



Bio-Formats Documentation

Release 5.0.0-rc1

The Open Microscopy Environment

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The following documentation is split into four parts. *About Bio-Formats* explains the goal of the software, discusses how it processes metadata, and provides other useful information such as version history and how to report bugs. *User Information* focuses on how to use Bio-Formats as a plugin for ImageJ and Fiji, and also gives details of other software packages which can use Bio-Formats to read and write microscopy formats. *Developer Documentation* covers more indepth information on using Bio-Formats as a Java library and how to interface from non-Java codes. Finally, *Formats* is a guide to all the file formats currently supported by Bio-Formats.

Part I

About Bio-Formats

Bio-Formats is a standalone Java library for reading and writing life sciences image file formats. It is capable of parsing both pixels and metadata for a large number of formats, as well as writing to several formats.

The primary goal of Bio-Formats is to facilitate the exchange of microscopy data between different software packages and organizations. It achieves this by converting proprietary microscopy data into an open standard called the [OME data model](#)¹, particularly into the [OME-TIFF](#)² file format.

We believe the standardization of microscopy metadata to a common structure is of vital importance to the community. A brief [article on the benefits of standardization](#)³ from [thinkstandards.net](#)⁴ provides an excellent summary. See also LOCI's article on [open source software in science](#)⁵.

¹<http://genomebiology.com/2005/6/5/R47>

²<http://www.openmicroscopy.org/site/support/ome-model/ome-tiff>

³<http://www.thinkstandards.net/benefits.html>

⁴<http://www.thinkstandards.net/>

⁵<http://loci.wisc.edu/software/oss>

WHY JAVA?

From a practical perspective, Bio-Formats is written in Java because it is cross-platform and widely used, with a vast array of libraries for handling common programming tasks. Java is one of the easiest languages from which to deploy cross-platform software. In contrast to C++, which has a large number of complex platform issues to consider, and Python, which leans heavily on C and C++ for many of its components (e.g., NumPy and SciPy), Java code is compiled one time into platform-independent byte code, which can be deployed as is to all supported platforms. And despite this enormous flexibility, Java manages to provide time performance nearly equal to C++, often better in the case of I/O operations (see further discussion on the [comparative speed of Java on the LOCI site](#)¹).

There are also historical reasons associated with the fact that the project grew out of work on the [VisAD Java component library](#)². You can read more about the origins of Bio-Formats on the [LOCI Bio-Formats homepage](#)³.

¹<http://loci.wisc.edu/faq/isnt-java-too-slow>

²<http://visad.ssec.wisc.edu>

³<http://loci.wisc.edu/software/bio-formats>

BIO-FORMATS METADATA PROCESSING

Pixels in microscopy are almost always very straightforward, stored on evenly spaced rectangular grids. It is the metadata (details about the acquisition, experiment, user, and other information) that can be complex. Using the OME data model enables applications to support a single metadata format, rather than the multitude of proprietary formats available today.

Every file format has a distinct set of metadata, stored differently. Bio-Formats processes and converts each format's metadata structures into a standard form called the [OME data model](#)¹, according to the [OME-XML](#)² specification. We have defined an open exchange format called [OME-TIFF](#)³ that stores its metadata as OME-XML. Any software package that supports OME-TIFF is also compatible with the dozens of formats listed on the Bio-Formats page, because Bio-Formats can convert your files to OME-TIFF format.

To facilitate support of OME-XML, we have created a [library in Java](#)⁴ for reading and writing [OME-XML](#)⁵ metadata.

There are three types of metadata in Bio-Formats, which we call core metadata, original metadata, and OME metadata.

1. **Core metadata** only includes things necessary to understand the basic structure of the pixels: image resolution; number of focal planes, time points, channels, and other dimensional axes; byte order; dimension order; color arrangement (RGB, indexed color or separate channels); and thumbnail resolution.
2. **Original metadata** is information specific to a particular file format. These fields are key/value pairs in the original format, with no guarantee of cross-format naming consistency or compatibility. Nomenclature often differs between formats, as each vendor is free to use their own terminology.
3. **OME metadata** is information from #1 and #2 converted by Bio-Formats into the OME data model. **Performing this conversion is the primary purpose of Bio-Formats.** Bio-Formats uses its ability to convert proprietary metadata into OME-XML as part of its integration with the OME and OMERO servers— essentially, they are able to populate their databases in a structured way because Bio-Formats sorts the metadata into the proper places. This conversion is nowhere near complete or bug free, but we are constantly working to improve it. We would greatly appreciate any and all input from users concerning missing or improperly converted metadata fields.

¹<http://genomebiology.com/2005/6/5/R47>

²<http://www.openmicroscopy.org/site/support/ome-model/ome-xml>

³<http://www.openmicroscopy.org/site/support/ome-model/ome-tiff>

⁴<http://www.openmicroscopy.org/site/support/ome-model/ome-xml/java-library.html>

⁵<http://www.openmicroscopy.org/site/support/ome-model/ome-xml>

For help, see the [Bio-Formats¹](#), [File Formats²](#) and [OME-XML and OME-TIFF³](#) sections of the [OME FAQ⁴](#) for answers to some common questions. Please [contact us⁵](#) if you have any questions or problems with Bio-Formats. There is a [guide for reporting bugs here](#).

For advanced users and developers, further information is available on the [troubleshooting page](#).

3.1 Reporting a bug

3.1.1 Before filing a bug report

If you think you have found a bug in Bio-Formats, the first thing to do is update your version of Bio-Formats to the latest trunk version. It is possible that the problem has already been addressed. For both Fiji and ImageJ users, select Update LOCI Plugins under the LOCI menu. Select Trunk Build.

You can also download the [newest version of Bio-Formats⁶](#). If you are not sure which version you need, select the Trunk Build under LOCI Tools complete bundle.

3.1.2 Sending a bug report

If you can still reproduce the bug after updating to the newest version of Bio-Formats, please send us a bug report. To ensure that any inquiries you make are resolved promptly, please include the following information:

- **Exact error message.** Copy and paste any error messages into the text of your email. Alternatively, attach a screenshot of the relevant windows.
- **Version information.** Indicate which release of Bio-Formats, which operating system, and which version of Java you are using.
- **Non-working data.** If possible, please send a non-working file. This helps us ensure that the problem is fixed for next release and will not reappear in later releases. We can provide you with an FTP server for uploading your file(s) if needed. Note that any data provided is used for internal testing only; we do not make images publicly available unless given explicit permission to do so.
- **Metadata and screenshots.** If possible, include any additional information about your data. We are especially interested in the expected dimensions (width, height, number of channels, Z slices, and timepoints). Screenshots of the image being successfully opened in other software are also useful.
- **Format details.** If you are requesting support for a new format, we ask that you send as much data as you have regarding this format (sample files, specifications, vendor/manufacturer information, etc.). This helps us to better support the format and ensures future versions of the format are also supported.

¹<http://www.openmicroscopy.org/site/support/faq/bio-formats>

²<http://www.openmicroscopy.org/site/support/faq/file-formats>

³<http://www.openmicroscopy.org/site/support/faq/ome-xml-and-ome-tiff>

⁴<http://www.openmicroscopy.org/site/support/faq>

⁵<http://www.openmicroscopy.org/site/community/mailing-lists>

⁶<http://downloads.openmicroscopy.org/bio-formats/>

Once you have gathered all the relevant information, send it as an e-mail to the [OME Users mailing list](#)⁷.

Please be patient - it may be a few days until you receive a response, but we reply to *every* email inquiry we receive.

3.2 Troubleshooting

This page is aimed at anyone who is responsible for supporting Bio-Formats, but may also be useful for advanced users looking to troubleshoot their own problems. Eventually, it might be best to move some of this to the FAQ or other documentation.

3.2.1 General tips

- Make sure to read the [FAQ](#)⁸, particularly the “File Formats”, “Bio-Formats”, and “OME-XML & OME-TIFF” sections
- If this page doesn’t help, it is worth quickly checking the following places where questions are commonly asked and/or bugs are reported:
 - [OME Trac](#)⁹
 - [Fiji Bugzilla](#) (for ImageJ/Fiji issues)¹⁰
 - [ome-devel mailing list](#)¹¹ (searchable using google with ‘site:lists.openmicroscopy.org.uk’)
 - [ome-users mailing list](#)¹² (searchable using google with ‘site:lists.openmicroscopy.org.uk’)
 - [ImageJ mailing list](#) (for ImageJ/Fiji issues)¹³
- Make sure to ask for a `_specific_` error message or description of the unexpected behavior, if one is not provided (“it does not work” is obviously not adequate).
- “My (12, 14, 16)-bit images look all black when I open them” is a common issue. In ImageJ/Fiji, this is almost always fixable by checking the “Autoscale” option; with the command line tools, the “-autoscale -fast” options should work. The problem is typically that the pixel values are very, very small relative to the maximum possible pixel value (4095, 16383, and 65535, respectively), so when displayed the pixels are effectively black.
- If the file is very, very small (4096 bytes) and any exception is generated when reading the file, then make sure it is not a [Mac OS X resource fork](#)¹⁴. The ‘file’ command should tell you:

```
$ file /path/to/suspicious-file
suspicious-file: AppleDouble encoded Macintosh file
```

3.2.2 Tips for ImageJ/Fiji

- The Bio-Formats version being used can be found by selecting “Help > About Plugins > LOCI Plugins”.
- “How do I make the options window go away?” is a common question. There are a few ways to do this:
 - To disable the options window only for files in a specific format, select “Plugins > LOCI > LOCI Plugins Configuration”, then pick the format from the list and make sure the “Windowless” option is checked.
 - To avoid the options window entirely, use the “Plugins > LOCI > Bio-Formats Windowless Importer” menu item to import files.
 - Open files by calling the Bio-Formats importer plugin from a macro.

⁷<http://lists.openmicroscopy.org.uk/mailman/listinfo/ome-users/>

⁸<http://www.openmicroscopy.org/site/support/faq>

⁹<http://trac.openmicroscopy.org.uk/ome>

¹⁰<http://fiji.sc/cgi-bin/bugzilla/index.cgi>

¹¹<http://lists.openmicroscopy.org.uk/pipermail/ome-devel>

¹²<http://lists.openmicroscopy.org.uk/pipermail/ome-users>

¹³<http://imagej.1557.n6.nabble.com/>

¹⁴http://en.wikipedia.org/wiki/Resource_fork#The_Macintosh_file_system

- A not uncommon cause of problems is that the user has multiple copies of loci_tools.jar in their ImageJ plugins folder, or has a copy of loci_tools.jar and a copy of bio-formats.jar. It is often difficult to determine for sure that this is the problem - the only error message that pretty much guarantees it is a “NoSuchMethodException”. If the user maintains that they downloaded the latest version and whatever error message/odd behavior they are seeing looks like it was fixed already, then it is worth suggesting that they remove all copies of loci_tools.jar and download a fresh version.

3.2.3 Tips for command line tools

- When run with no arguments, all of the command line tools will print information on usage.
- When run with the ‘-version’ argument, ‘showinf’ and ‘bfconvert’ will display the version of Bio-Formats that is being used (version number, build date, and Git commit reference).

3.2.4 Tips by format

3I/Olympus Slidebook (.sld)

- Slidebook support is generally not great, despite a lot of effort. This is the one format for which it is recommended to just export to OME-TIFF from the acquisition software and work with the exported files. Happily, there is free software from 3I which can do the export post-acquisition: <https://www.slidebook.com/reader.php>

DICOM

- Health care or institutional regulations often prevent users from sending problematic files, so often we have to solve the problem blind. In these cases, it is important to get the exact error message, and inform the user that fixing the problem may be an iterative process (i.e. they might have to try a couple of trunk builds before we can finally fix the problem).

ZVI

- If the ZVI reader plugin is installed in ImageJ/Fiji, then it will be used instead of Bio-Formats to read ZVI files. To check if this is the cause of the problem, make sure that the file opens correctly using “Plugins > LOCI > Bio-Formats Importer”; if that works, then just remove ZVI_Reader.class from the plugins folder.

BIO-FORMATS VERSIONS

Bio-Formats is updated whenever a new version of **OMERO**¹ is released. The version number is three numbers separated by dots; e.g., 4.0.0. See the *version history* for a list of major changes in each release.

The stable version of Bio-Formats is 4.4. For future development directions, see the 5.0² roadmap.

4.1 Version history

4.1.1 5.0.0-RC1 (2013 Dec 19)

- Updated Maven build system and launched new Artifactory repository (<http://artifacts.openmicroscopy.org>)
- **Added support for:**
 - *Bio-Rad SCN*
 - *Yokogawa CellVoyager* (thanks to Jean-Yves Tinevez)
 - *LaVision Inspector*
 - *PCORAW*
 - *Woolz* (thanks to Bill Hill)
- Added support for populating and parsing `ModuloAlong{Z, C, T}` annotations for FLIM/SPIM data
- Updated netCDF and slf4j version requirements - netCDF 4.3.19 and slf4j 1.7.2 are now required
- Updated and improved *MATLAB users* and *developers* documentation
- Many bug fixes including for Nikon ND2, Zeiss CZI, and CellWorX formats

4.1.2 5.0.0-beta1 (2013 June 20)

- Updated to 2013-06 OME-XML schema³
- Improved the performance in tiled formats
- Added caching of Reader metadata using <http://code.google.com/p/kryo/>
- **Added support for:**
 - *Aperio AFI*
 - *Inveon*
 - *MPI-BPC Inspector*
- **Many bug fixes, including:**
 - Add ZEN 2012/Lightsheet support to Zeiss CZI
 - Improved testing of autogenerated code

¹<http://www.openmicroscopy.org/site/support/omero5/>

²<http://trac.openmicroscopy.org.uk/ome/query?group=status&component=Bio-Formats&milestone=OMERO-5>

³<http://www.openmicroscopy.org/site/support/ome-model/>

- Moved OME-XML specification into Bio-Formats repository

4.1.3 4.4.9 (2013 Oct 16)

- Many bug fixes including improvements to support for ND2 format
- Java 1.6 is now the minimum supported version; Java 1.5 is no longer supported

4.1.4 4.4.8 (2013 May 2)

- No changes - release to keep version numbers in sync with OMERO

4.1.5 4.4.7 (2013 April 25)

- Many bug fixes to improve support for more than 20 formats
- Improved export to multi-file datasets
- Now uses slf4j for logging rather than using log4j directly, enabling other logging implementations to be used, for example when Bio-Formats is used as a component in other software using a different logging system.

4.1.6 4.4.6 (2013 February 11)

- Many bug fixes
- Further documentation improvements

4.1.7 4.4.5 (2012 November 13)

- Restructured and improved documentation
- **Many bug fixes, including:**
 - File grouping in many multi-file formats
 - Maven build fixes
 - ITK plugin fixes

4.1.8 4.4.4 (2012 September 24)

- Many bug fixes

4.1.9 4.4.2 (2012 August 22)

- Security fix for OMERO plugins for ImageJ

4.1.10 4.4.1 (2012 July 20)

- Fix a bug that prevented BigTIFF files from being read
- Fix a bug that prevented PerkinElmer .flex files from importing into OMERO

4.1.11 4.4.0 (2012 July 13)

- Many, many bug fixes
- **Added support for:**
 - .nd2 files from Nikon Elements version 4
 - PerkinElmer Operetta data
 - MJPEG-compressed AVIs
 - MicroManager datasets with multiple positions
 - Zeiss CZI data
 - IMOD data

4.1.12 4.3.3 (2011 October 18)

- **Many bug fixes, including:**
 - Speed improvements to HCImage/SimplePCI and Zeiss ZVI files
 - Reduce memory required by Leica LIF reader
 - More accurately populate metadata for Prairie TIFF datasets
 - Various fixes to improve the security of the OMERO plugin for ImageJ
 - Better dimension detection for Bruker MRI datasets
 - Better thumbnail generation for histology (SVS, NDPI) datasets
 - Fix stage position parsing for Metamorph TIFF datasets
 - Correctly populate the channel name for PerkinElmer Flex files

4.1.13 4.3.2 (2011 September 15)

- **Many bug fixes, including:**
 - Better support for Volocity datasets that contain compressed data
 - More accurate parsing of ICS metadata
 - More accurate parsing of cellSens .vsi files
- **Added support for a few new formats**
 - .inr
 - Canon DNG
 - Hitachi S-4800
 - Kodak .bip
 - JPX
 - Volocity Library Clipping (.acff)
 - Bruker MRI
- Updated Zeiss LSM reader to parse application tags
- Various performance improvements, particularly for reading/writing TIFFs
- Updated OMERO ImageJ plugin to work with OMERO 4.3.x

4.1.14 4.3.1 (2011 July 8)

- **Several bug fixes, including:**
 - Fixes for multi-position Deltavision files
 - Fixes for MicroManager 1.4 data
 - Fixes for 12 and 14-bit JPEG-2000 data
 - Various fixes for reading Volocity .mvd2 datasets
- Added various options to the ‘showinf’ and ‘bfconvert’ command line tools
- Added better tests for OME-XML backwards compatibility
- Added the ability to roughly stitch tiles in a multi-position dataset

4.1.15 4.3.0 (2011 June 14)

- **Many bug fixes, including:**
 - Many fixes for reading and writing sub-images
 - Fixes for stage position parsing in the Zeiss formats
 - File type detection fixes
- Updated JPEG-2000 reading and writing support to be more flexible
- **Added support for 9 new formats:**
 - InCell 3000
 - Trestle
 - Hamamatsu .ndpi
 - Hamamatsu VMS
 - SPIDER
 - Volocity .mvd2
 - Olympus SIS TIFF
 - IMAGIC
 - cellSens VSI
- Updated to 2011-06 OME-XML schema
- Minor speed improvements in many formats
- Switched version control system from SVN to Git
- Moved all Trac tickets into the OME Trac: <http://trac.openmicroscopy.org.uk>
- Improvements to testing frameworks
- Added Maven build system as an alternative to the existing Ant build system
- Added pre-compiled C++ bindings to the download page

4.1.16 4.2.2 (2010 December 6)

- **Several bug fixes, notably:**
 - Metadata parsing fixes for Zeiss LSM, Metamorph STK, and FV1000
 - Prevented leaked file handles when exporting to TIFF/OME-TIFF
 - Fixed how BufferedImages are converted to byte arrays
- Proper support for OME-XML XML annotations

- Added support for SCANCO Medical .aim files
- Minor improvements to ImageJ plugins
- Added support for reading JPEG-compressed AVI files

4.1.17 4.2.1 (2010 November 12)

- Many, many bug fixes
- **Added support for 7 new formats:**
 - CellWorX .pnl
 - ECAT7
 - Varian FDF
 - Perkin Elmer Densitometer
 - FEI TIFF
 - Compix/SimplePCI TIFF
 - Nikon Elements TIFF
- Updated Zeiss LSM metadata parsing, with generous assistance from Zeiss, FMI, and MPI-CBG
- Lots of work to ensure that converted OME-XML validates
- Improved file stitching functionality; non-numerical file patterns and limited regular expression-style patterns are now supported

4.1.18 4.2.0 (2010 July 9)

- Fixed many, many bugs in all aspects of Bio-Formats
- Reworked ImageJ plugins to be more user- and developer-friendly
- Added many new unit tests
- Added support for approximately 25 new file formats, primarily in the SPM domain
- Rewrote underlying I/O infrastructure to be thread-safe and based on Java NIO
- Rewrote OME-XML parsing/generation layer; OME-XML 2010-06 is now supported
- Improved support for exporting large images
- Improved support for exporting to multiple files
- Updated logging infrastructure to use slf4j and log4j

4.1.19 4.1.1 (2009 December 3)

- Fixed many bugs in popular file format readers

4.1 (2009 October 21):

- Fixed many bugs in most file format readers
- Significantly improved confocal and HCS metadata parsing
- Improved C++ bindings
- Eliminated references to Java AWT classes in core Bio-Formats packages
- Added support for reading Flex datasets from multiple servers
- Improved OME-XML generation; generated OME-XML is now valid
- Added support for Olympus ScanR data

- Added OSGi information to JARs
- Added support for Amira Mesh files
- Added support for LI-FLIM files
- Added more informative exceptions
- Added support for various types of ICS lifetime data
- Added support for Nikon EZ-C1 TIFFs
- Added support for Maia Scientific MIAS data

4.1.20 4.0.1 (2009 June 1)

- Lots of bug fixes in most format readers and writers
- Added support for Analyze 7.1 files
- Added support for Nifti files
- Added support for Cellomics .c01 files
- Refactored ImageJ plugins
- Bio-Formats, the common package, and the ImageJ plugins now require Java 1.5
- Eliminated native library dependency for reading lossless JPEGs
- Changed license from GPL v3 or later to GPL v2 or later
- Updated Olympus FV1000, Zeiss LSM, Zeiss ZVI and Nikon ND2 readers to parse ROI data
- Added option to ImageJ plugin for displaying ROIs parsed from the chosen dataset
- Fixed BufferedImage construction for signed data and unsigned int data

4.1.21 4.0.0 (2009 March 3)

- Improved OME data model population for Olympus FV1000, Nikon ND2, Metamorph STK, Leica LEI, Leica LIF, InCell 1000 and MicroManager
- Added TestNG tests for format writers
- Added option to ImageJ plugin to specify custom colors when customizing channels
- Added ability to upgrade the ImageJ plugin from within ImageJ
- Fixed bugs in Nikon ND2, Leica LIF, BioRad PIC, TIFF, PSD, and OME-TIFF
- Fixed bugs in Data Browser and Exporter plugins
- Added support for Axon Raw Format (ARF), courtesy of Johannes Schindelin
- Added preliminary support for IPLab-Mac file format

4.1.22 2008 December 29

- Improved metadata support for Deltavision, Zeiss LSM, MicroManager, and Leica LEI
- Restructured code base/build system to be component-driven
- Added support for JPEG and JPEG-2000 codecs within TIFF, OME-TIFF and OME-XML
- Added support for 16-bit compressed Flex files
- Added support for writing JPEG-2000 files
- Added support for Minolta MRW format
- Added support for the 2008-09 release of OME-XML

- Removed dependency on JMagick
- Re-added caching support to data browser plugin
- Updated loci.formats.Codec API to be more user-friendly
- Expanded loci.formats.MetadataStore API to better represent the OME-XML model
- Improved support for Nikon NEF
- Improved support for TillVision files
- Improved ImageJ import options dialog
- Fixed bugs with Zeiss LSM files larger than 4 GB
- Fixed minor bugs in most readers
- Fixed bugs with exporting from an Image5D window
- Fixed several problems with virtual stacks in ImageJ

4.1.23 2008 August 30

- Fixed bugs in many file format readers
- Fixed several bugs with swapping dimensions
- Added support for Olympus CellIR/APL files
- Added support for MINC MRI files
- Added support for Aperio SVS files compressed with JPEG 2000
- Added support for writing OME-XML files
- Added support for writing APNG files
- Added faster LZW codec
- Added drag and drop support to ImageJ shortcut window
- Re-integrated caching into the data browser plugin

4.1.24 2008 July 1

- Fixed bugs in most file format readers
- Fixed bugs in OME and OMERO download functionality
- Fixed bugs in OME server-side import
- Improved metadata storage/retrieval when uploading to and downloading from the OME Perl server
- Improved Bio-Formats ImageJ macro extensions
- Major updates to MetadataStore API
- Updated OME-XML generation to use 2008-02 schema by default
- Addressed time and memory performance issues in many readers
- Changed license from LGPL to GPL
- Added support for the FEI file format
- Added support for uncompressed Hamamatsu Aquacosmos NAF files
- Added support for Animated PNG files
- Added several new options to Bio-Formats ImageJ plugin
- Added support for writing ICS files

4.1.25 2008 April 17

- Fixed bugs in Slidebook, ND2, FV1000 OIB/OIF, Perkin Elmer, TIFF, Prairie, Openlab, Zeiss LSM, MNG, Molecular Dynamics GEL, and OME-TIFF
- Fixed bugs in OME and OMERO download functionality
- Fixed bugs in OME server-side import
- Fixed bugs in Data Browser
- Added support for downloading from OMERO 2.3 servers
- Added configuration plugin
- Updates to MetadataStore API
- Updates to OME-XML generation - 2007-06 schema used by default
- Added support for Li-Cor L2D format
- Major updates to TestNG testing framework
- Added support for writing multi-series OME-TIFF files
- Added support for writing BigTIFF files

4.1.26 2008 Feb 12

- Fixed bugs in QuickTime, SimplePCI and DICOM
- Fixed a bug in channel splitting logic

4.1.27 2008 Feb 8

- Many critical bugfixes in format readers and ImageJ plugins
- **Newly reborn Data Browser for 5D image visualization**
 - some combinations of import options do not work yet

4.1.28 2008 Feb 1

- Fixed bugs in Zeiss LSM, Metamorph STK, FV1000 OIB/OIF, Leica LEI, TIFF, Zeiss ZVI, ICS, Prairie, Openlab LIFF, Gatan, DICOM, QuickTime
- Fixed bug in OME-TIFF writer
- Major changes to MetadataStore API
- Added support for JPEG-compressed TIFF files
- **Added basic support for Aperio SVS files**
 - JPEG2000 compression is still not supported
- Improved “crop on import” functionality
- Improvements to bfconvert and bfview
- Improved OME-XML population for several formats
- Added support for JPEG2000-compressed DICOM files
- EXIF data is now parsed from TIFF files

4.1.29 2007 Dec 28

- Fixed bugs in Leica LEI, Leica TCS, SDT, Leica LIF, Visitech, DICOM, Imaris 5.5 (HDF), and Slidebook readers
- Better parsing of comments in TIFF files exported from ImageJ
- Fixed problem with exporting 48-bit RGB data
- Added logic to read multi-series datasets spread across multiple files
- Improved channel merging in ImageJ - requires ImageJ 1.39I
- Support for hyperstacks and virtual stacks in ImageJ - requires ImageJ 1.39I
- Added API for reading directly from a byte array or InputStream
- Metadata key/value pairs are now stored in ImageJ's "Info" property
- Improved OMERO download plugin - it is now much faster
- Added "open all series" option to ImageJ importer
- ND2 reader based on Nikon's SDK now uses our own native bindings
- Fixed metadata saving bug in ImageJ
- Added sub-channel labels to ImageJ windows
- Major updates to 4D Data Browser
- Minor updates to automated testing suite

4.1.30 2007 Dec 1

- Updated OME plugin for ImageJ to support downloading from OMERO
- Fixed bug with floating point TIFFs
- Fixed bugs in Visitech, Zeiss LSM, Imaris 5.5 (HDF)
- Added alternate ND2 reader that uses Nikon's native libraries
- Fixed calibration and series name settings in importer
- Added basic support for InCell 1000 datasets

4.1.31 2007 Nov 21

- Fixed bugs in ND2, Leica LIF, DICOM, Zeiss ZVI, Zeiss LSM, FV1000 OIB, FV1000 OIF, BMP, Evotec Flex, BioRad PIC, Slidebook, TIFF
- Added new ImageJ plugins to slice stacks and do "smart" RGB merging
- **Added "windowless" importer plugin**
 - uses import parameters from IJ_Prefs.txt, without prompting the user
- Improved stack slicing and colorizing logic in importer plugin
- **Added support for DICOM files compressed with lossless JPEG**
 - requires native libraries
- Fixed bugs with signed pixel data
- Added support for Imaris 5.5 (HDF) files
- Added 4 channel merging to importer plugin
- Added API methods for reading subimages
- Major updates to the 4D Data Browser

4.1.32 2007 Oct 17

- Critical OME-TIFF bugfixes
- Fixed bugs in Leica LIF, Zeiss ZVI, TIFF, DICOM, and AVI readers
- Added support for JPEG-compressed ZVI images
- Added support for BigTIFF
- Added importer plugin option to open each plane in a new window
- Added MS Video 1 codec for AVI

4.1.33 2007 Oct 1

- Added support for compressed DICOM images
- Added support for uncompressed LIM files
- Added support for Adobe Photoshop PSD files
- Fixed bugs in DICOM, OME-TIFF, Leica LIF, Zeiss ZVI, Visitech, PerkinElmer and Metamorph
- Improved indexed color support
- Addressed several efficiency issues
- Fixed how multiple series are handled in 4D data browser
- Added option to reorder stacks in importer plugin
- Added option to turn off autoscaling in importer plugin
- Additional metadata convenience methods

4.1.34 2007 Sept 11

- Major improvements to ND2 support; lossless compression now supported
- Support for indexed color images
- Added support for Simple-PCI .cxd files
- Command-line OME-XML validation
- Bugfixes in most readers, especially Zeiss ZVI, Metamorph, PerkinElmer and Leica LEI
- Initial version of Bio-Formats macro extensions for ImageJ

4.1.35 2007 Aug 1

- Added support for latest version of Leica LIF
- Fixed several issues with Leica LIF, Zeiss ZVI
- Better metadata mapping for Zeiss ZVI
- Added OME-TIFF writer
- Added MetadataRetrieve API for retrieving data from a MetadataStore
- Miscellaneous bugfixes

4.1.36 2007 July 16

- Fixed several issues with ImageJ plugins
- Better support for Improvision and Leica TCS TIFF files
- Minor improvements to Leica LIF, ICS, QuickTime and Zeiss ZVI readers
- Added searchable metadata window to ImageJ importer

4.1.37 2007 July 2

- Fixed issues with ND2, Openlab LIFF and Slidebook
- Added support for Visitech XYS
- Added composite stack support to ImageJ importer

4.1.38 2007 June 18

- Fixed issues with ICS, ND2, MicroManager, Leica LEI, and FV1000 OIF
- Added support for large (> 2 GB) ND2 files
- Added support for new version of ND2
- Minor enhancements to ImageJ importer
- Implemented more flexible logging
- Updated automated testing framework to use TestNG
- Added package for caching images produced by Bio-Formats

4.1.39 2007 June 6

- Fixed OME upload/download bugs
- Fixed issues with ND2, EPS, Leica LIF, and OIF
- Added support for Khoros XV
- Minor improvements to the importer

4.1.40 2007 May 24

- Better Slidebook support
- Added support for Quicktime RPZA
- Better Leica LIF metadata parsing
- Added support for BioRad PIC companion files
- Added support for bzip2-compressed files
- Improved ImageJ plugins
- Native support for FITS and PGM

4.1.41 2007 May 2

- Added support for NRRD
- Added support for Evotec Flex (requires LuraWave Java SDK with license code)
- Added support for gzip-compressed files
- Added support for compressed QuickTime headers
- Fixed QuickTime Motion JPEG-B support
- Fixed some memory issues (repeated small array allocations)
- Fixed issues reading large (> 2 GB) files
- Removed “ignore color table” logic, and replaced with Leica-specific solution
- Added status event reporting to readers
- Added API to toggle metadata collection
- Support for multiple dimensions rasterized into channels
- Deprecated reader and writer methods that accept the ‘id’ parameter
- Deprecated IFormatWriter.save in favor of saveImage and saveBytes
- Moved dimension swapping and min/max calculation logic to delegates
- Separate GUI logic into isolated loci.formats.gui package
- Miscellaneous bugfixes and tweaks in most readers and writers
- Many other bugfixes and improvements

4.1.42 2007 Mar 16

- Fixed calibration bugs in importer plugin
- Enhanced metadata support for additional formats
- Fixed LSM bug

4.1.43 2007 Mar 7

- Added support for Micro-Manager file format
- Fixed several bugs – Leica LIF, Leica LEI, ICS, ND2, and others
- Enhanced metadata support for several formats
- Load series preview thumbnails in the background
- Better implementation of openBytes(String, int, byte[]) for most readers
- Expanded unit testing framework

4.1.44 2007 Feb 28

- Better series preview thumbnails
- Fixed bugs with multi-channel Leica LEI
- Fixed bugs with “ignore color tables” option in ImageJ plugin

4.1.45 2007 Feb 26

- Many bugfixes: Leica LEI, ICS, FV1000 OIB, OME-XML and others
- Better metadata parsing for BioRad PIC files
- Enhanced API for calculating channel minimum and maximum values
- Expanded MetadataStore API to include more semantic types
- Added thumbnails to series chooser in ImageJ plugin
- Fixed plugins that upload and download from an OME server

4.1.46 2007 Feb 7

- Added plugin for downloading images from OME server
- Improved HTTP import functionality
- Added metadata filtering – unreadable metadata is no longer shown
- Better metadata table for multi-series datasets
- Added support for calibration information in Gatan DM3
- Eliminated need to install JAI Image I/O Tools to read ND2 files
- Fixed ZVI bugs: metadata truncation, and other problems
- Fixed bugs in Leica LIF: incorrect calibration, first series labeling
- Fixed memory bug in Zeiss LSM
- Many bugfixes: PerkinElmer, Deltavision, Leica LEI, LSM, ND2, and others
- IFormatReader.close(boolean) method to close files temporarily
- Replaced Compression utility class with extensible Compressor interface
- Improved testing framework to use .bioformats configuration files

4.1.47 2007 Jan 5

- Added support for Prairie TIFF
- Fixed bugs in Zeiss LSM, OIB, OIF, and ND2
- Improved API for writing files
- Added feature to read files over HTTP
- Fixed bugs in automated testing framework
- Miscellaneous bugfixes

4.1.48 2006 Dec 22

- Expanded ImageJ plugin to optionally use Image5D or View5D
- Improved support for ND2 and JPEG-2000 files
- Added automated testing framework
- Fixed bugs in Zeiss ZVI reader
- Miscellaneous bugfixes

4.1.49 2006 Nov 30

- Added support for ND2/JPEG-2000
- Added support for MRC
- Added support for MNG
- Improved support for floating-point images
- Fixed problem with 2-channel Leica LIF data
- Minor tweaks and bugfixes in many readers
- Improved file stitching logic
- Allow ImageJ plugin to be called from a macro

4.1.50 2006 Nov 2

- Bugfixes and improvements for Leica LIF, Zeiss LSM, OIF and OIB
- Colorize channels when they are split into separate windows
- Fixed a bug with 4-channel datasets

4.1.51 2006 Oct 31

- Added support for Imaris 5 files
- Added support for RGB ICS images

4.1.52 2006 Oct 30

- Added support for tiled TIFFs
- Fixed bugs in ICS reader
- Fixed importer plugin deadlock on some systems

4.1.53 2006 Oct 27

- Multi-series support for Slidebook
- Added support for Alicona AL3D
- Fixed plane ordering issue with FV1000 OIB
- Enhanced dimension detection in FV1000 OIF
- Added preliminary support for reading NEF images
- Added option to ignore color tables
- Fixed ImageJ GUI problems
- Fixed spatial calibration problem in ImageJ
- Fixed some lingering bugs in Zeiss ZVI support
- Fixed bugs in OME-XML reader
- Tweaked ICS floating-point logic
- Fixed memory leaks in all readers
- Better file stitching logic

4.1.54 2006 Oct 6

- Support for 3i SlideBook format (single series only for now)
- Support for 16-bit RGB palette TIFF
- Fixed bug preventing import of certain Metamorph STK files
- Fixed some bugs in PerkinElmer UltraView support
- Fixed some bugs in Leica LEI support
- Fixed a bug in Zeiss ZVI support
- Fixed bugs in Zeiss LSM support
- Fixed a bug causing slow identification of Leica datasets
- Fixed bugs in the channel merging logic
- Fixed memory leak for OIB format
- Better scaling of 48-bit RGB data to 24-bit RGB
- Fixed duplicate channels bug in “open each channel in a separate window”
- Fixed a bug preventing PICT import into ImageJ
- Better integration with HandleExtraFileTypes
- Better virtual stack support in Data Browser plugin
- Fixed bug in native QuickTime random access
- Keep aspect ratio for computed thumbnails
- Much faster file stitching logic

4.1.55 2006 Sep 27

- PerkinElmer: support for PE UltraView
- Openlab LIFF: support for Openlab v5
- Leica LEI: bugfixes, and support for multiple series
- ZVI, OIB, IPW: more robust handling of these formats (eliminated custom OLE parsing logic in favor of Apache POI)
- OIB: better metadata parsing (but maybe still not perfect?)
- LSM: fixed a bug preventing import of certain LSMs
- Metamorph STK: fixed a bug resulting in duplicate image planes
- User interface: use of system look & feel for file chooser dialog when available
- Better notification when JAR libraries are missing

4.1.56 2006 Sep 6

- Leica LIF: multiple distinct image series within a single file
- Zeiss ZVI: fixes and improvements contributed by Michel Boudinot
- Zeiss LSM: fixed bugs preventing the import of certain LSM files
- TIFF: fixed a bug preventing import of TIFFs created with Bio-Rad software

4.1.57 2006 Mar 31

- First release

Part II

User Information

USING BIO-FORMATS WITH IMAGEJ AND FIJI

The following sections explain the features of Bio-Formats and how to use it within *ImageJ* and *Fiji*:

5.1 ImageJ

*ImageJ*¹ is an image processing and analysis application written in Java, widely used in the life sciences fields, with an extensible plugin infrastructure. You can use Bio-Formats as a plugin for ImageJ to read and write images in the formats it supports.

5.1.1 Installation

Download *loci_tools.jar*² and drop it into your **ImageJ/plugins** folder. Next time you run ImageJ, a new LOCI submenu with several plugins will appear in the Plugins menu, including the Bio-Formats Importer and Bio-Formats Exporter.

5.1.2 Usage

The Bio-Formats Importer plugin can display image stacks in several ways:

- In a standard ImageJ window (including as a hyperstack)
- Using the **LOCI Data Browser**³ plugin (included)
- With Joachim Walter’s *Image5D*⁴ plugin (if installed)
- With Rainer Heintzmann’s *View5D*⁵ plugin (if installed)

ImageJ v1.37 and later automatically (via *HandleExtraFileTypes*) calls the Bio-Formats logic, if installed, as needed when a file is opened within ImageJ—e.g., when using File/Open instead of explicitly choosing “Bio-Formats Importer” from the Plugins/LOCI menu.

For a more detailed description of each plugin, see the *Bio-Formats page*⁶ of the Fiji wiki.

5.1.3 Upgrading

To upgrade, just overwrite the old *loci_tools.jar* with the *latest one*⁷. Step-by-step upgrade instructions for Windows are available *here*.

You may want to download the latest version of ImageJ first, to take advantage of new features and bug-fixes.

As of the 4.0.0 release, you can also upgrade the Bio-Formats plugin directly from ImageJ. Select “Plugins>LOCI>Update LOCI Plugins” from the ImageJ menu, then select which release you would like to use. You will then need to restart ImageJ to complete the upgrade process.

¹<http://rsb.info.nih.gov/ij/>

²<http://downloads.openmicroscopy.org/bio-formats/>

³<http://loci.wisc.edu/software/data-browser>

⁴<http://developer.imagej.net/plugins/image5d>

⁵<http://www.nanoimaging.de/View5D>

⁶<http://fiji.sc/Bio-Formats>

⁷<http://downloads.openmicroscopy.org/bio-formats/>

5.1.4 Macros and plugins

Bio-Formats is fully scriptable in a macro, and callable from a plugin. To use in a macro, use the Macro Recorder to record a call to the Bio-Formats Importer with the desired options. You can also perform more targeted metadata queries using the Bio-Formats macro extensions.

Here are some example ImageJ macros and plugins that use Bio-Formats to get you started:

`basicMetadata.txt`⁸ - A macro that uses the Bio-Formats macro extensions to print the chosen file's basic dimensional parameters to the Log.

`planeTimings.txt`⁹ - A macro that uses the Bio-Formats macro extensions to print the chosen file's plane timings to the Log.

`recursiveTiffConvert.txt`¹⁰ - A macro for recursively converting files to TIFF using Bio-Formats.

`bfOpenAsHyperstack.txt`¹¹ - This macro from Wayne Rasband opens a file as a hyperstack using only the Bio-Formats macro extensions (without calling the Bio-Formats Importer plugin).

`zvi2HyperStack.txt`¹² - This macro from Sebastien Huart reads in a ZVI file using Bio-Formats, synthesizes the LUT using emission wavelength metadata, and displays the result as a hyperstack.

`dvSplitTimePoints.txt`¹³ - This macro from Sebastien Huart splits timepoints/channels on all DV files in a folder.

`batchTiffConvert.txt`¹⁴ - This macro converts all files in a directory to TIFF using the Bio-Formats macro extensions.

`Read_Image`¹⁵ - A simple plugin that demonstrates how to use Bio-Formats to read files into ImageJ.

`Mass_Importer`¹⁶ - A simple plugin that demonstrates how to open all image files in a directory using Bio-Formats, grouping files with similar names to avoiding opening the same dataset more than once.

5.2 Fiji

Fiji¹⁷ is an image processing package. It can be described as a distribution of *ImageJ* together with Java, Java 3D and a lot of plugins organized into a *coherent menu structure*¹⁸. Fiji compares to ImageJ as Ubuntu compares to Linux.

Fiji works with Bio-Formats out of the box, because it comes bundled with the *Bio-Formats ImageJ plugins*.

5.2.1 Upgrading

Upgrading Bio-Formats within Fiji is as simple as invoking the "Update Fiji" command from the Help menu. By default, Fiji even automatically checks for updates every time it is launched, so you will always be notified when new versions of Bio-Formats (or any other bundled plugin) are available.

Note: Fiji currently ships with the latest 4.4.x Bio-Formats release. Alternately, you can *enable the "Bio-Formats 5" update site*¹⁹ to receive the latest Bio-Formats 5 bugfixes and updates.

For further details on Bio-Formats in Fiji, see the *Bio-Formats Fiji wiki page*²⁰.

⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/macros/basicMetadata.txt>

⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/macros/planeTimings.txt>

¹⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/macros/recursiveTiffConvert.txt>

¹¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/macros/bfOpenAsHyperstack.txt>

¹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/macros/zvi2HyperStack.txt>

¹³<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/macros/dvSplitTimePoints.txt>

¹⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/macros/batchTiffConvert.txt>

¹⁵https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/Read_Image.java

¹⁶https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/Mass_Importer.java

¹⁷<http://fiji.sc/>

¹⁸http://fiji.sc/Plugins_Menu

¹⁹http://fiji.sc/Bio-Formats#Daily_builds

²⁰<http://fiji.sc/Bio-Formats>

5.3 Bio-Formats features in ImageJ and Fiji

When you select Bio-Formats under the Plugin menu, you will see the following features:

- The **Bio-Formats Importer** is a plugin for *loading images* into ImageJ or Fiji. It can read over 100 proprietary life sciences formats and standardizes their acquisition metadata into the common *OME data model*. It will also extract and set basic metadata values such as *spatial calibration*²¹ if they are available in the file.
- The **Bio-Formats Exporter** is a plugin for exporting data to disk. It can save to the open *OME-TIFF*²² file format, as well as several movie formats (e.g. QuickTime, AVI) and graphics formats (e.g. PNG, JPEG).
- The **Bio-Formats Remote Importer** is a plugin for importing data from a remote URL. It is likely to be less robust than working with files on disk, so we recommend downloading your data to disk and using the regular Bio-Formats Importer whenever possible.
- The **Bio-Formats Windowless Importer** is a version of the Bio-Formats Importer plugin that runs with the last used settings to avoid any additional dialogs beyond the file chooser. If you always use the same import settings, you may wish to use the windowless importer to save time (Learn more *here*).
- The **Bio-Formats Macro Extensions** plugin prints out the set of commands that can be used to create macro extensions. The commands and the instructions for using them are printed to the ImageJ log window.
- The **Stack Slicer** plugin is a helper plugin used by the Bio-Formats Importer. It can also be used to split a stack across channels, focal planes or time points.
- The **LOCI Plugins Configuration** dialog is a useful way to configure the behavior of each file format. The Formats tab lists supported file formats and toggles each format on or off, which is useful if your file is detected as the wrong format. It also toggles whether each format bypasses the importer options dialog through the “Windowless” checkbox. You can also configure any specific option for each format. The Libraries tab provides a list of available helper libraries used by Bio-Formats.
- The **LOCI Plugins Shortcut Window** opens a small window with a quick-launch button for each LOCI plugin. Dragging and dropping files onto the shortcut window opens them quickly using the **Bio-Formats Importer** plugin.
- The **Update LOCI Plugins** command will check for LOCI Plugins updates. We recommend you update to the newest Trunk build as soon as you think you may have *discovered a bug*.

5.4 Installing Bio-Formats in ImageJ

(Since *FIJI* is essentially *ImageJ* with plugins like *Bio-Formats* already built in, people who install *Fiji* can skip this section.)

Once you *download*²³ and install *ImageJ*, you can install the *Bio-Formats* plugin by going to the *Bio-Formats download page*²⁴.

For most end-users, we recommend downloading the **loci_tools.jar** complete bundle.

However, you must decide which version of it you want to install. There are three primary versions of *Bio-Formats*: the trunk build, the daily builds, and the Stable Release. Which version you should download depends on your needs:

- The **trunk build** is automatically updated every time any change is made to the source code on the main “trunk” branch in Git, LOCI’s software version control system. This build has the latest bug fixes, but it is not well tested and may have also introduced new bugs.
- The **daily build** is a compilation of that day’s changes that occurs daily around midnight. It is not any better tested than the trunk build; but if you download it multiple times in a day, you can be sure you’ll get the same version each time.
- The **stable release** is thoroughly tested and has documentation to match. The list of supported formats on the *Bio-Formats* site corresponds to the most recent stable release. We do not add new formats to the list until a release containing support for that format has been completed. The stable release is less likely to contain bugs.

The stable release is also more useful to programmers because they can link their software to a known, fixed version of *Bio-Formats*. *Bio-Formats*’ behavior won’t be changing “out from under them” as they continue developing their own programs.

²¹<http://fiji.sc/SpatialCalibration>

²²<http://www.openmicroscopy.org/site/support/ome-model/ome-tiff>

²³<http://rsbweb.nih.gov/ij/download.html>

²⁴<http://downloads.openmicroscopy.org/bio-formats/>

We often **recommend that most people simply use the trunk build** for two reasons. First, trunk may contain bug-fixes or new features you want anyway; secondly, you will have to reproduce any bug you encounter in Bio-Formats against the latest trunk build before submitting a bug report. Rather than using the stable release until you find a bug that requires you to upgrade and reproduce it, why not just use the trunk build to begin with?

Once you decide which version you need, go to the Bio-Formats [download page](#)²⁵ and save the appropriate **loci_tools.jar** to the Plugins directory within ImageJ.

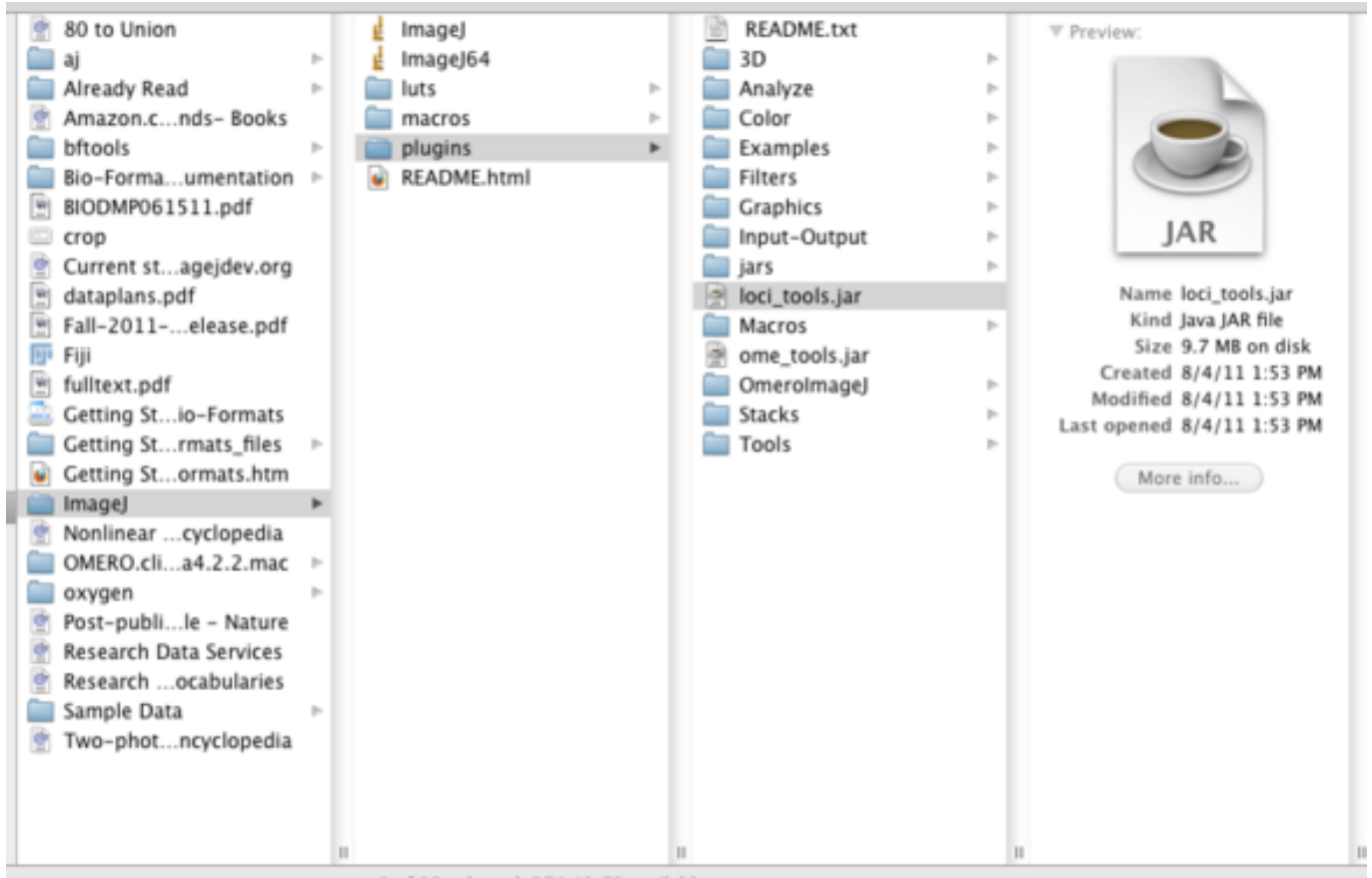
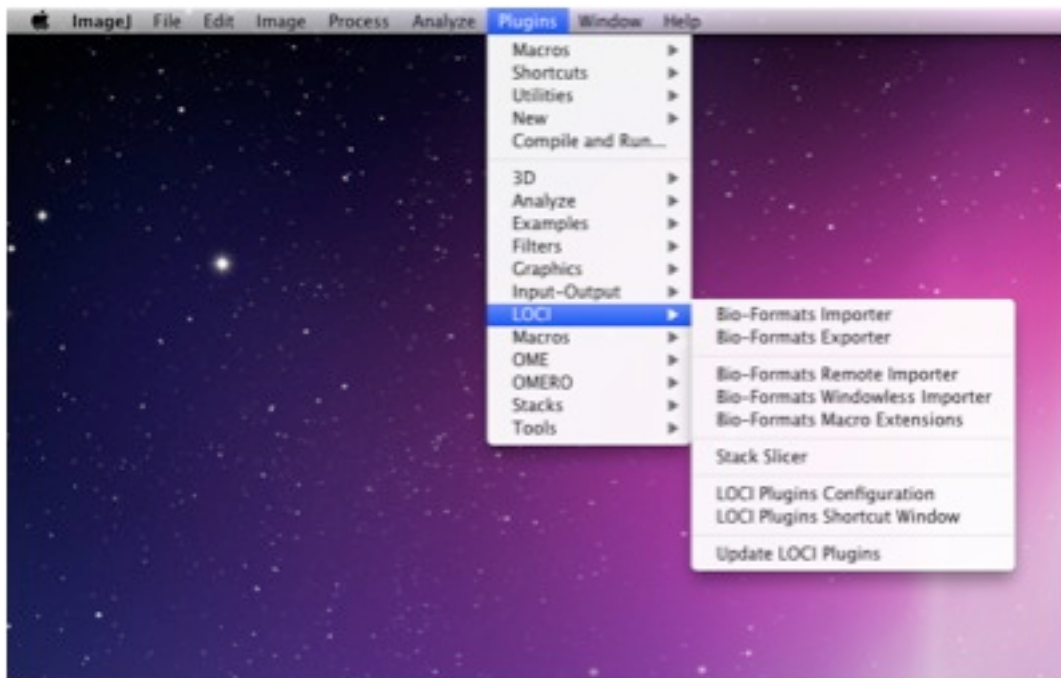


Figure 5.1: Plugin Directory for ImageJ: Where in ImageJ's file structure you should place the file once you downloaded it.

You may have to quit and restart ImageJ. Once you restart it, you will find Bio-Formats in the LOCI option under the Plugins menu:

²⁵<http://downloads.openmicroscopy.org/bio-formats/>



You are now ready to start using Bio-Formats.

5.5 Using Bio-Formats to load images into ImageJ

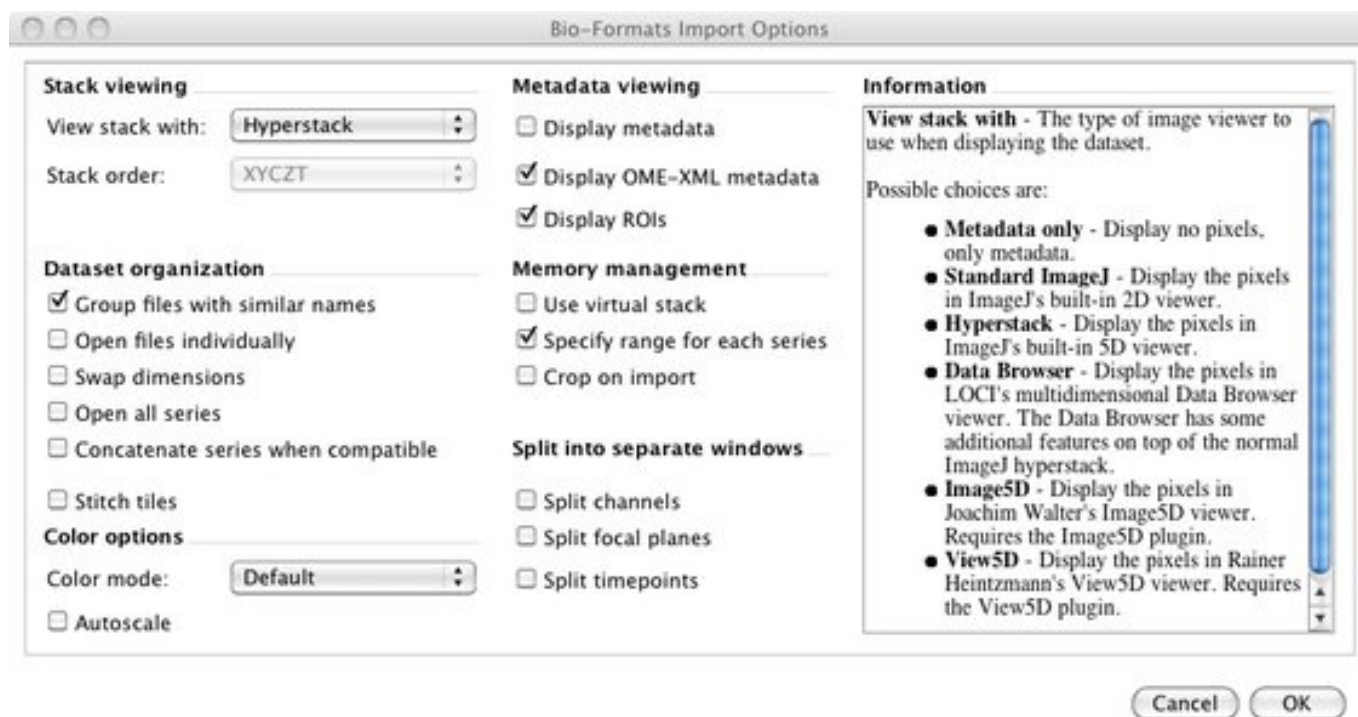
This section will explain how to use Bio-Formats to import files into ImageJ and how to use the settings on the Bio-Formats Import Options screen.

5.5.1 Opening files

There are three ways you can open a file using Bio-Formats:

1. Select the Bio-Formats Importer under the LOCI plugins menu.
2. Drag and drop it onto the LOCI Plugins Shortcut window.
3. Use the Open command in the File menu.

Unless you used the LOCI Plugins Configuration dialog to open the file type windowlessly, you know you used Bio-Formats to open a file when you see a screen like this:



If you used the File > Open command and did not see the Bio-Formats Import Options screen, ImageJ/Fiji probably used another plugin instead of Bio-Formats to open the file. If this happens and you want to open a file using Bio-Formats, use one of the other two methods instead.

5.5.2 Opening files windowlessly

When you open a file with Bio-Formats, the Import Options Screen automatically recalls the settings you last used to open a file with that specific format (e.g. JPG, TIF, LSM, etc.). If you always choose the same options whenever you open files in a specific file format, you can save yourself time by bypassing the Bio-Formats Import Options screen. You can accomplish this two ways:

1. You can select the **Bio-Formats Windowless Importer**, located in the LOCI menu under ImageJ's Plugin menu. When you select this option, Bio-Formats will import the file using the same settings you used the last time you imported a file with the same format.
2. If you invariably use the same settings when you open files in a specific format, you can always bypass the Import Options Screen by changing the settings in the **LOCI Plugins Configuration** option, which is also located in the LOCI menu under ImageJ's Plugin menu.

Once you select this option, select the file format you are interested in from the list on the left side of the screen. Check both the **Enabled** and **Windowless** boxes. Once you do this, whenever you open a file using the **Bio-Formats Windowless Importer**, the **Bio-Formats Importer**, or the drag-and-drop method described in the previous section, the file will always open the same way using the last setting used.

Please note that if you want to change any of the import settings once you enable this windowless option, you will have to go back to the **LOCI Plugins Configuration** screen, unselect the windowless option, open a file using the regular **Bio-Formats Importer**, select your settings, and re-select the windowless option.

5.5.3 Group files with similar names

One of the most important features of Bio-Formats is to combine multiple files from a data set into one coherent, multi-dimensional image.

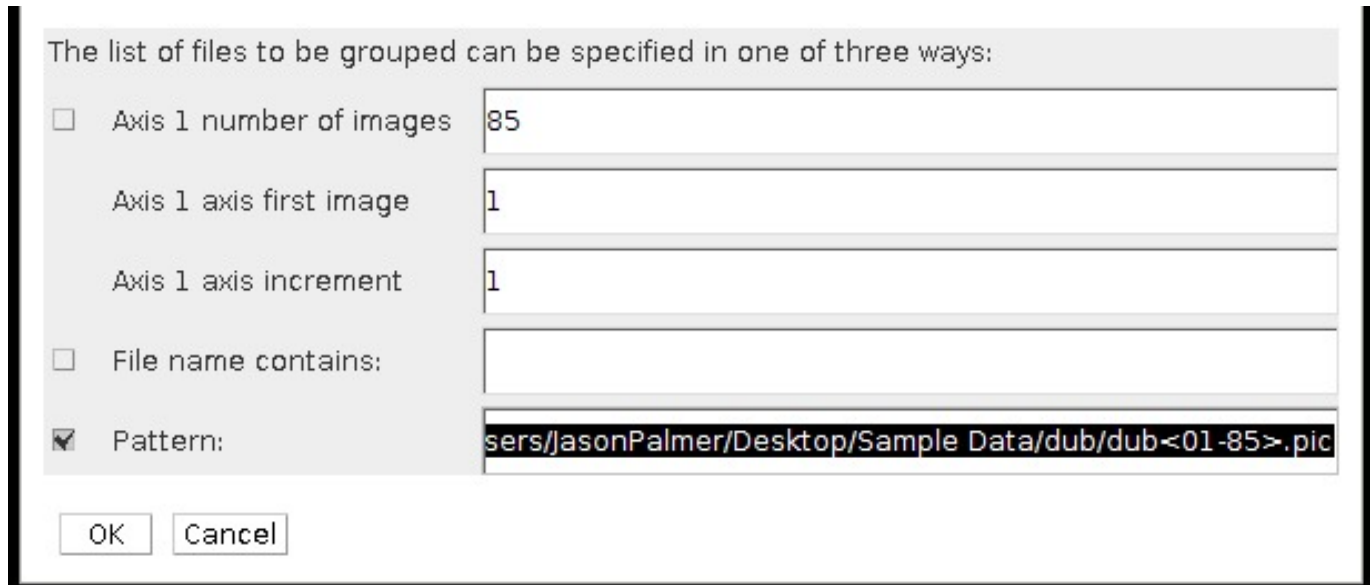
To demonstrate how to use the **Group files with similar names** feature, you can use the [dub²⁶](http://www.loci.wisc.edu/sample-data/dub) data set available under LOCI's [Sample Data²⁷](http://www.loci.wisc.edu/sample-data) page. You will notice that it is a large dataset: each of the 85 files shows the specimen at 33 optical sections along the z-plane at a specific time.

²⁶<http://www.loci.wisc.edu/sample-data/dub>

²⁷<http://www.loci.wisc.edu/software/sample-data>

If you open just one file in ImageJ/Fiji using the **Bio-Formats Importer**, you will get an image incorporating three dimensions (x, y, z). However, if you select **Group files with similar names** from the Bio-Formats Import Options screen, you will be able to create a 4-D image (x, y, z, and t) incorporating the 85 files.

After clicking OK, you will see a screen like this:



This screen allows you to select which files within the 85-file cluster to use to create that 4-D image. Some information will be pre-populated in the fields. Unless you want to change the settings in that field, there is no need to change or delete it. If you click OK at this point, you will load all 85 files.

However, you can specify which files you want to open by adjusting the “axis information”, the file “name contains,” or the “pattern” sections. Even though there are three options, you only need to make changes to one of them. Since Bio-Format’s precedence for processing data is from top to bottom, only the uppermost section that you made changes to will be used. If you change multiple boxes, any information you enter into lower boxes will be ignored.

To return to the example involving the dub data set, suppose you want to open the first image and only every fifth image afterwards (i.e. dub01, dub06, dub11 . . . dub81). This would give you 17 images. There are different ways to accomplish this:

You can use the **Axis Settings** only when your files are numbered in sequential order and you want to open only a subset of the files that have similar names. Since the dub data set is numbered sequentially, you can use this feature.

Axis 1 number of images refers to the total number of images you want to open. Since you want to view 17 images, enter 17. **Axis 1 axis first image** specifies which image in the set you want to be the first. Since you want to start with dub01, enter 1 in that box. You also want to view only every fifth image, so enter 5 in the **Axis 1 axis increment** box.

The **File name contains** box should be used if all of the files that you want to open have common text. This is especially useful when the files are not numbered. For example, if you have “Image_Red.tif”, “Image_Green.tif”, and “Image_Blue.tif” you could enter “Image_” in the box to group them all.

To continue the example involving the dub data set, you cannot use the **file name contains** box to open every fifth image. However, if you only wanted to open dub10 through dub19, you could enter “dub1” in the **file name contains** box.

The **pattern** box can be used to do either of the options listed above or much more. This box can accept a single file name like “dub01.pic.” It can also contain a pattern that use “<” and “>” to specify what numbers or text the file names contain.

There are three basic forms to the “< >” blocks:

- Text enumeration - “Image_<Red,Green,Blue>.tif” is the pattern for Image_Red.tif, Image_Green.tif, Image_Blue.tif. (Note that the order you enter the file names is the order in which they will be loaded.)
- Number range - “dub<1-85>.pic” is the pattern for “dub1.pic”, “dub2.pic”, “dub3.pic” . . . “dub85.pic”.
- Number range with step - “dub<1-85:5>.pic” is the pattern for “dub1.pic”, “dub6.pic”, “dub11.pic”, “dub11.pic” . . . “dub85.pic”.

It can also accept a [Java regular expression](http://download.oracle.com/javase/1.5.0/docs/api/java/util/regex/Pattern.html)²⁸.

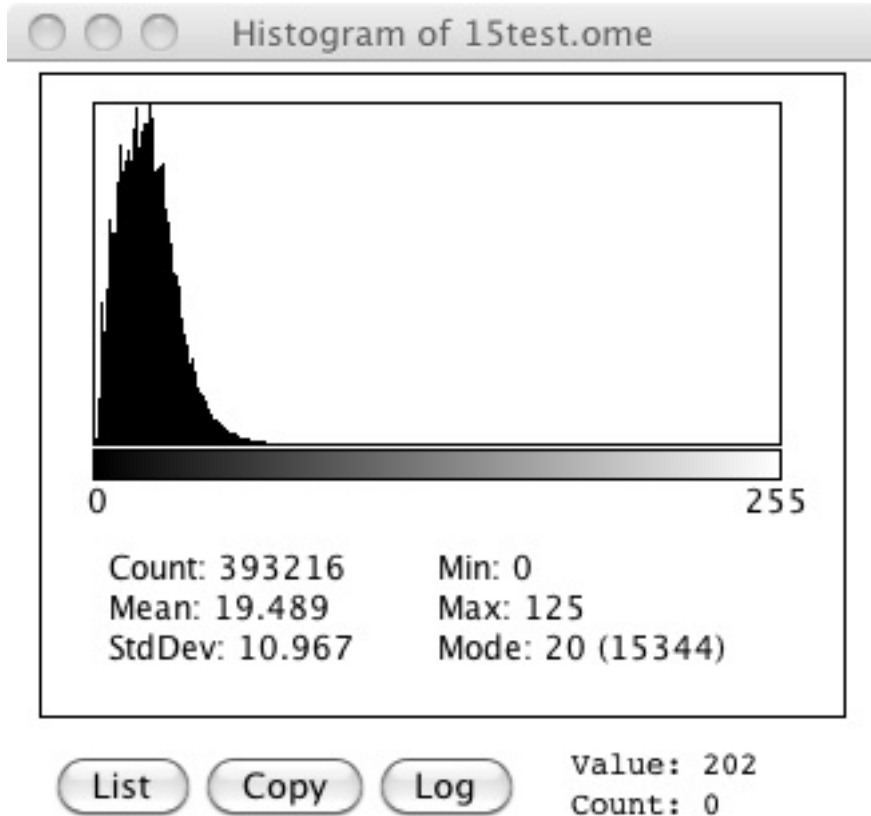
²⁸<http://download.oracle.com/javase/1.5.0/docs/api/java/util/regex/Pattern.html>

5.5.4 Autoscale

Autoscale helps increase the brightness and contrast of an image by adjusting the range of light intensity within an image to match the range of possible display values. Note that Autoscale does not change your data. It just changes how it is displayed.

Each pixel in an image has a numerical value ascribed to it to describe its intensity. The bit depth—the number of possible values—depends on the number of bits used in the image. Eight bits, for example, gives 256 values to express intensity where 0 is completely black, 255 is completely white, and 1 through 254 display increasingly lighter shades of grey.

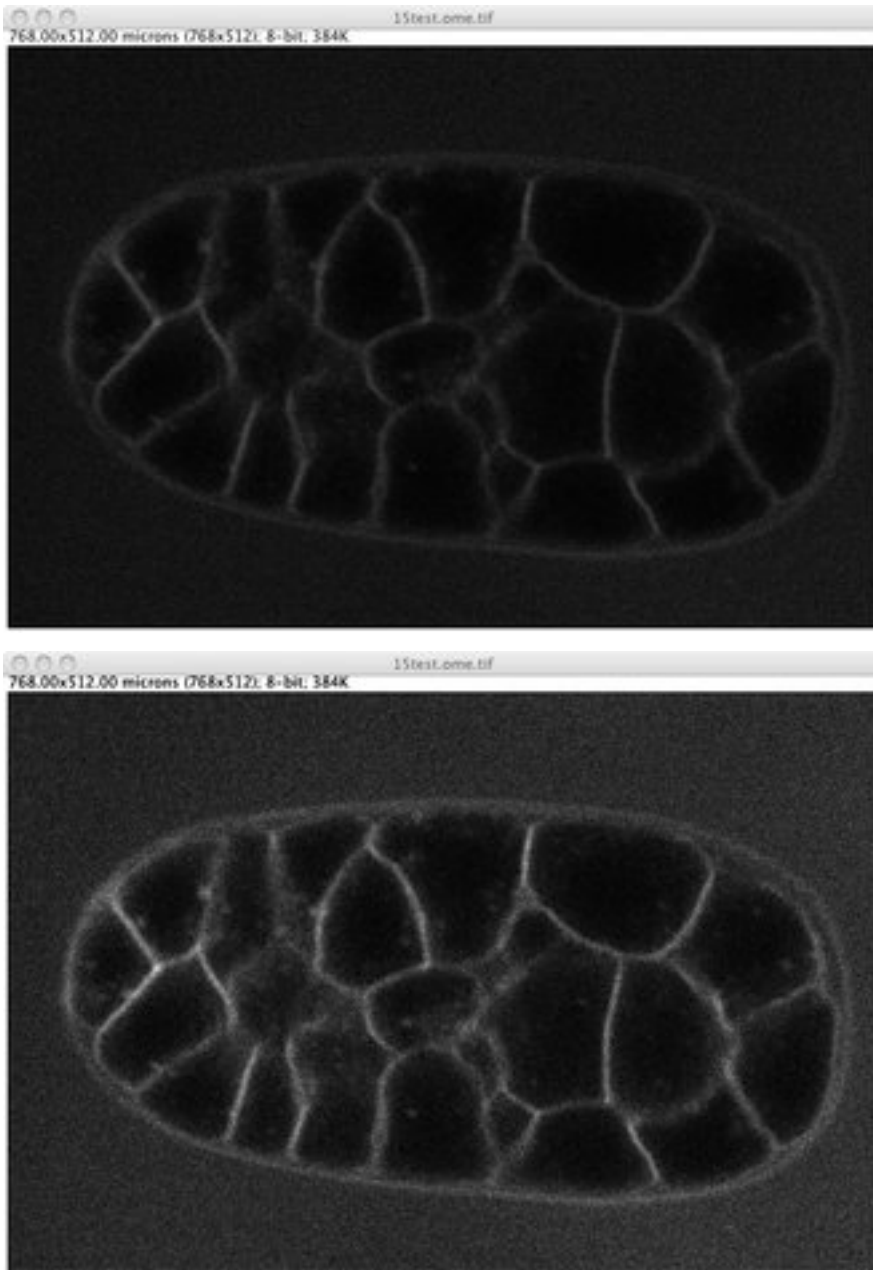
ImageJ can collect the intensity information about each pixel from an image or stack and create a histogram. (You can see it by selecting Histogram under the Analyze menu.) Here is the histogram of a one particular image:



Notice that the histogram heavily skews right. Even though there are 256 possible values, only 0 through 125 are being used.

Autoscale adjusts the image so the smallest and largest number in that image or stack's histogram become the darkest and brightest settings. For this image, pixels with the intensity of 125 will be displayed in pure white. The other values will be adjusted too to help show contrast between values that were too insignificant to see before.

Here is one image Bio-Formats imported with and without using Autoscale:

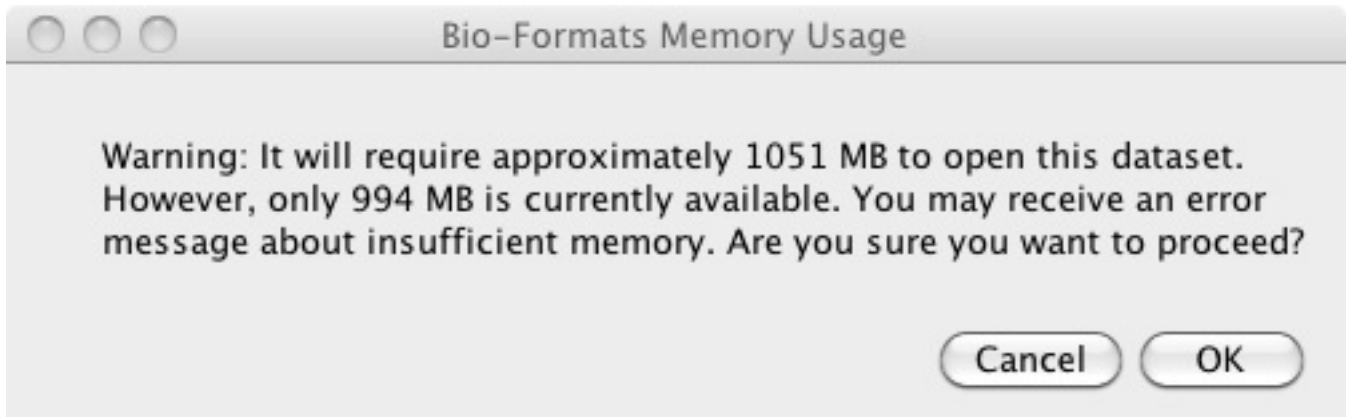


Autoscale readjusts the image based on the highest value in the entire data set. This means if the highest value in your dataset is close to maximum display value, Autoscale's adjusting may be undetectable to the eye.

ImageJ/Fiji also has its own tools for adjusting the image, which are available by selecting Brightness/Contrast, which is under the Adjust option in the Image menu.

5.6 Managing memory in ImageJ/Fiji using Bio-Formats

When dealing with a large stack of images, you may receive a warning like this:



This means the allotted memory is less than what Bio-Formats needs to load all the images. If you have a very large data set, you may have to:

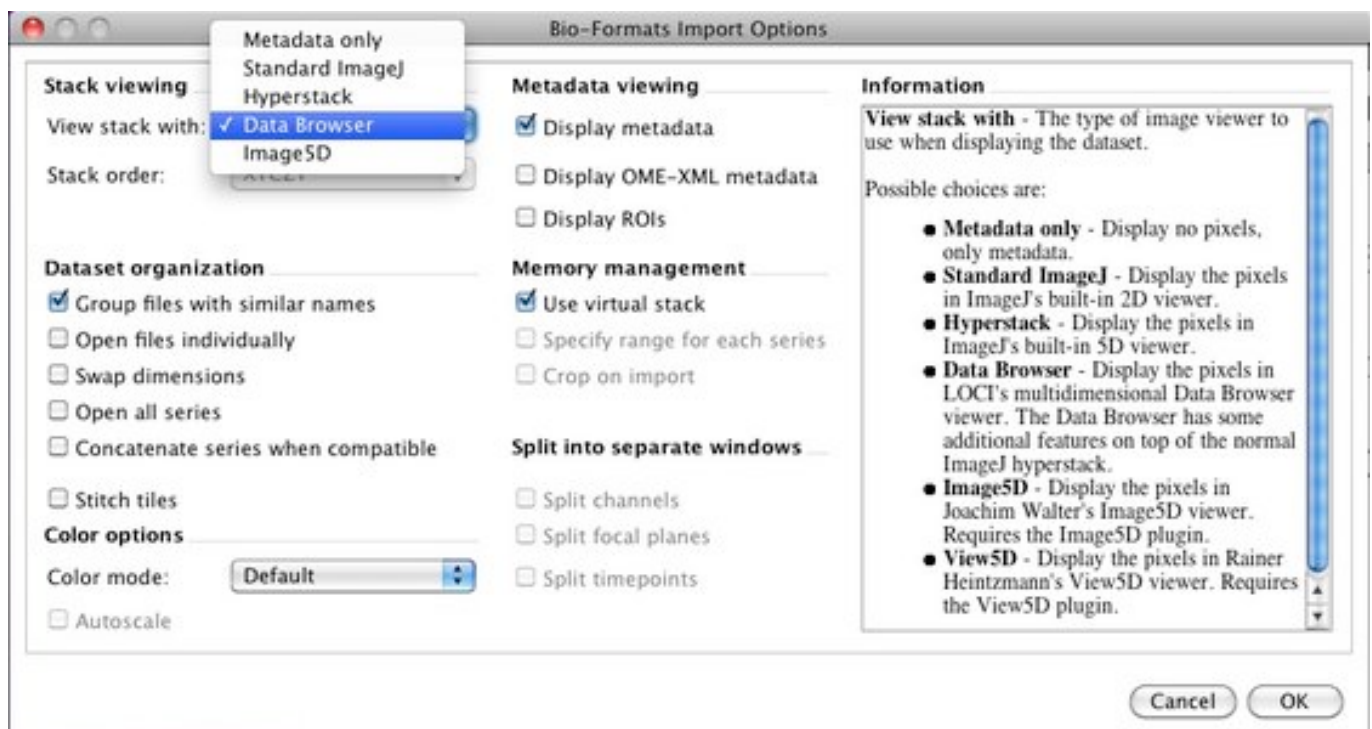
- View your stack with Data Browser
- Crop the view area
- Open only a subset of images
- Use Virtual Stack
- Increase ImageJ/Fiji's memory.

If your files contain JPEG or JPEG-2000 images, you may see this memory warning even if your file size is smaller than the amount of allocated memory. This is because compressed images like JPEG need to be decompressed into memory before being displayed and require more memory than their file size suggests. If you are having this issue, try utilizing one of the memory management tools below.

5.6.1 View your stack with Data Browser

Data Browser is another part of Bio-Formats that enables users to view large 3, 4, or 5-D datasets by caching a subset of all the images available. This enables users to view a stack that is bigger than the computer's memory.

You can select Data Browser as an option for **View stack with**, the leftmost, uppermost option in the **Bio-Formats Import Options** screen.



Note that when you use Data Browser, other features like cropping and specifying range are not available. You can, however, adjust the size of the image cache in the Data Browser after you open the files. You can read more about it on LOCI's [Data Browser page](#)²⁹.

5.6.2 Cropping the view area

Crop on Import is useful if your images are very large and you are only interested in one specific section of the stack you are importing. If you select this feature, you will see a screen where you can enter the height and width (in pixels) of the part of image you want to see. Note that these measurements are from the top left corner of the image.

5.6.3 Opening only a subset of images

The **Specify Range for Each Series** option is useful for viewing a portion of a data set where all the plane images are encapsulated into one file (e.g. the Zeiss LSM format). If your file has a large quantity of images, you can specify which channels, Z-planes, and times you want to load.

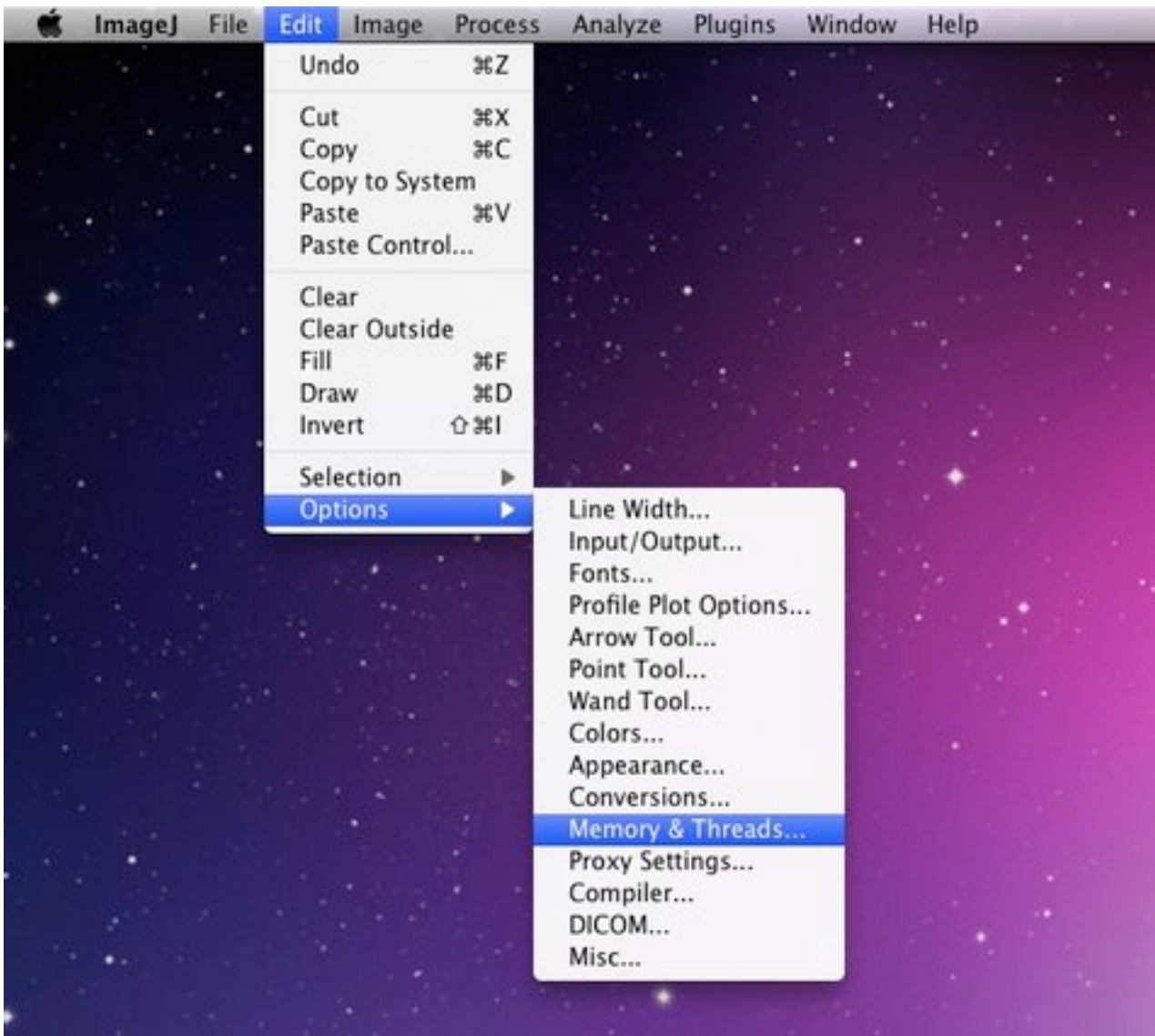
5.6.4 Use Virtual Stack

Virtual Stack conserves memory by not loading specific images until necessary. Note that unlike Data Browser, Virtual Stack does not contain a buffer and may produce choppy animations.

5.6.5 Increasing ImageJ/Fiji's memory

Finally, you can also increase the amount of the computer memory devoted to ImageJ/Fiji by selecting **Memory & Threads** under the **Edit** menu.

²⁹<http://www.loci.wisc.edu/software/data-browser>



Generally, allocating more than 75% of the computer's total memory will cause ImageJ/Fiji to become slow and unstable.

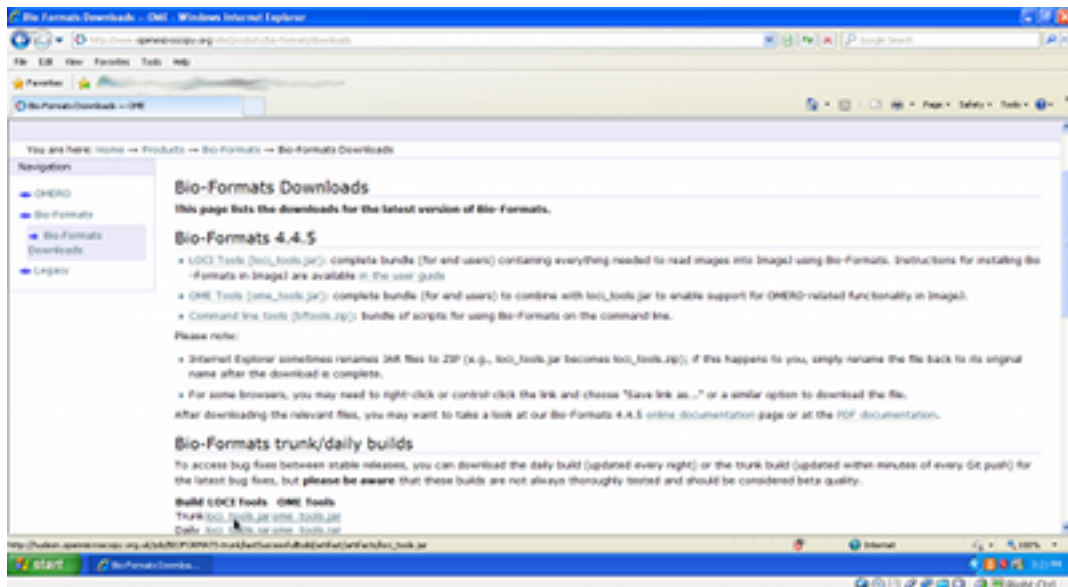
Please note that unlike the other three features, ImageJ/Fiji itself provides this feature and not Bio-Formats. You can find out more about this feature by looking at ImageJ's [documentation](#)³⁰.

5.7 Upgrading the Bio-Formats importer for ImageJ to the latest trunk build

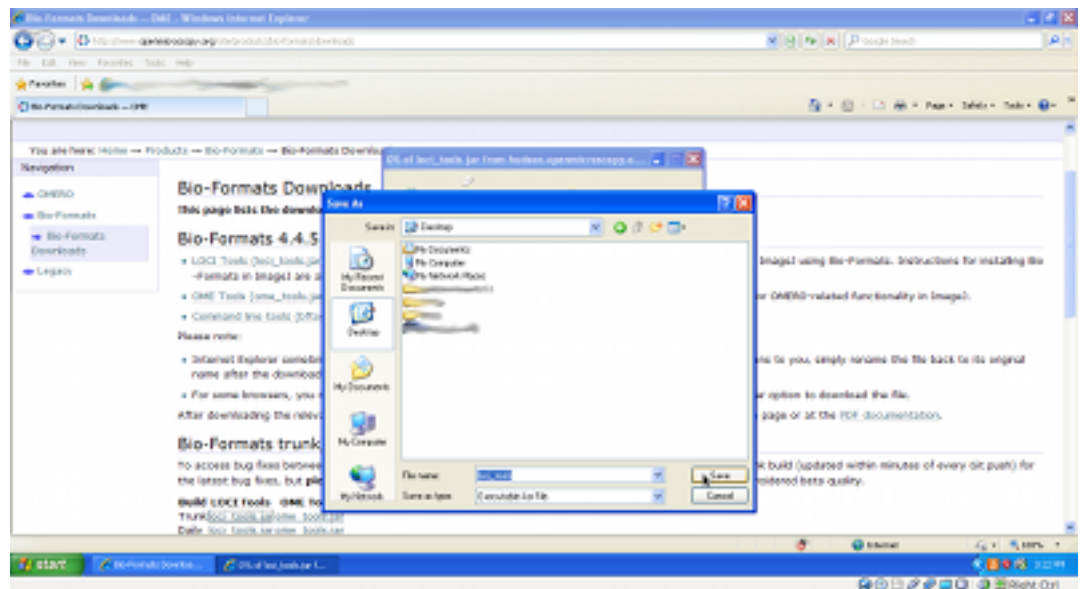
1) Download the latest trunk build of `loci_tools.jar` from [Bio-Formats downloads](#)³¹

³⁰<http://rsbweb.nih.gov/ij/docs/menus/edit.html#options>

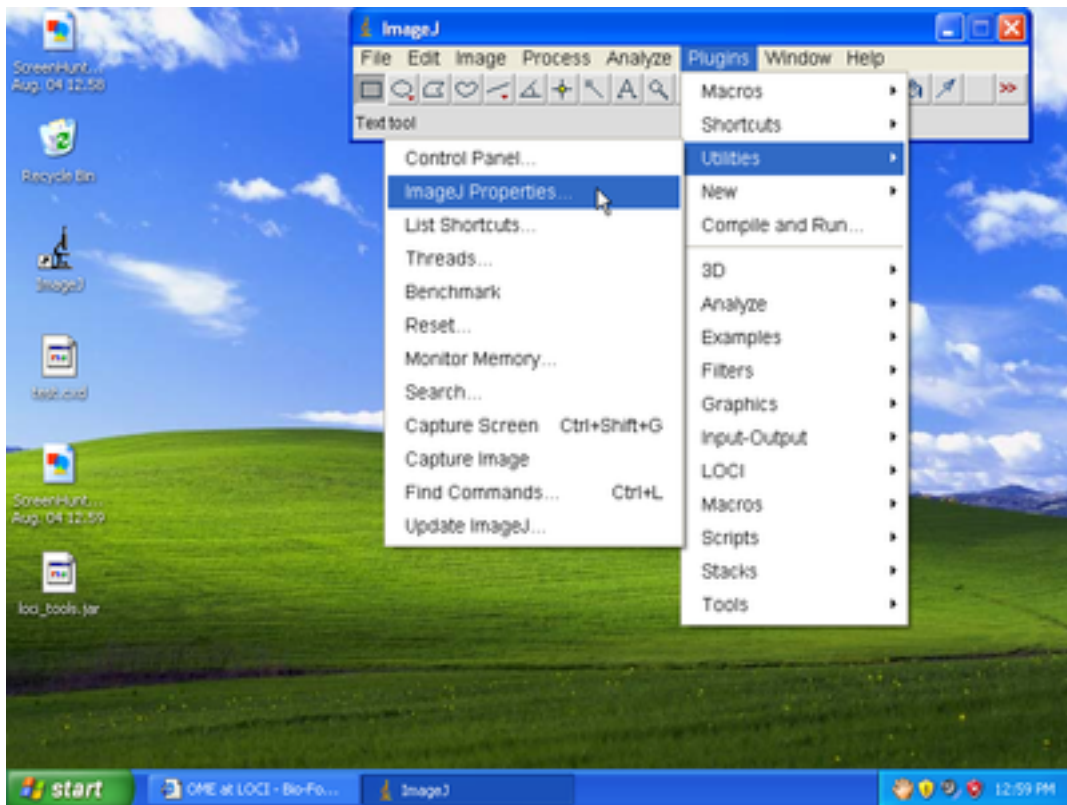
³¹<http://downloads.openmicroscopy.org/bio-formats/>



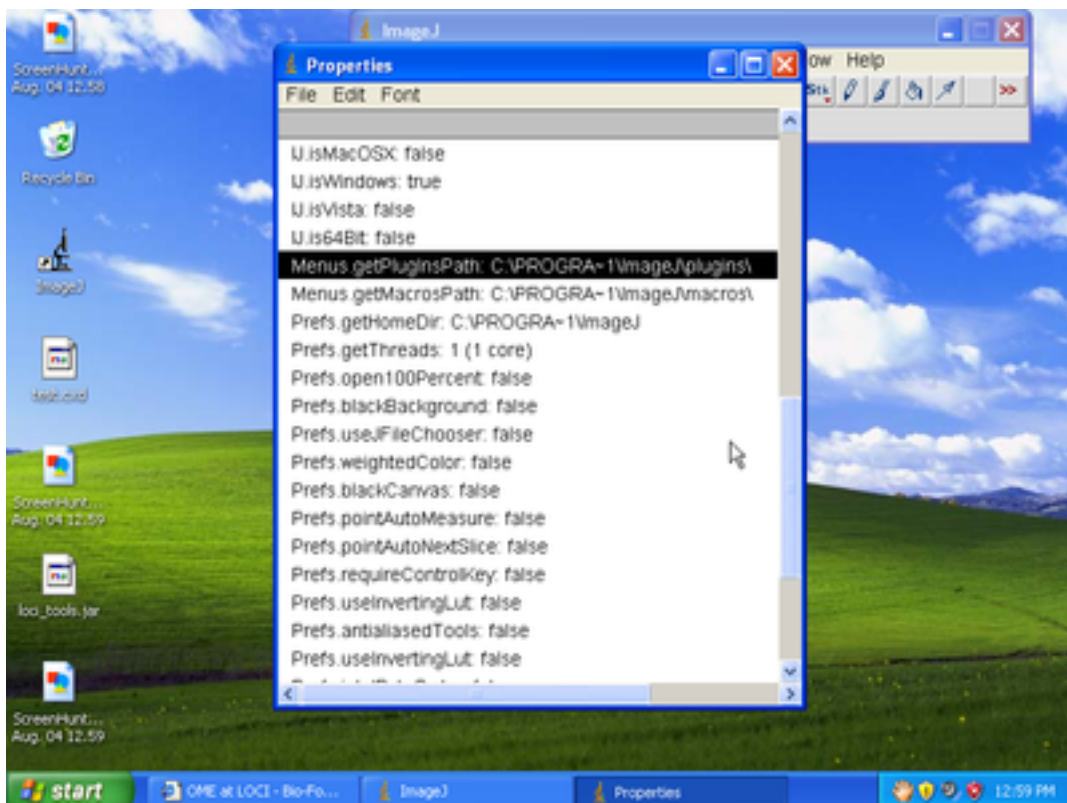
2) Internet Explorer will ask you where it should save **loci_tools.jar**. Select 'Desktop'.



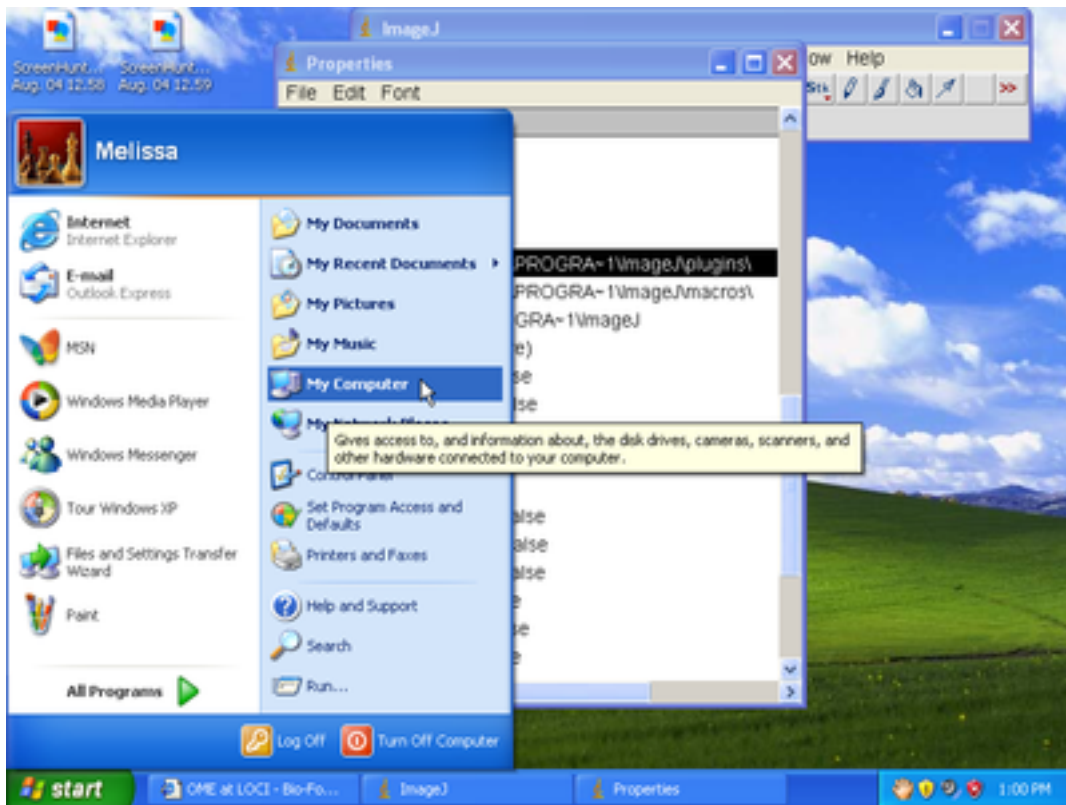
3. Start ImageJ.
4. Select "Plugins > Utilities > ImageJ Properties..."



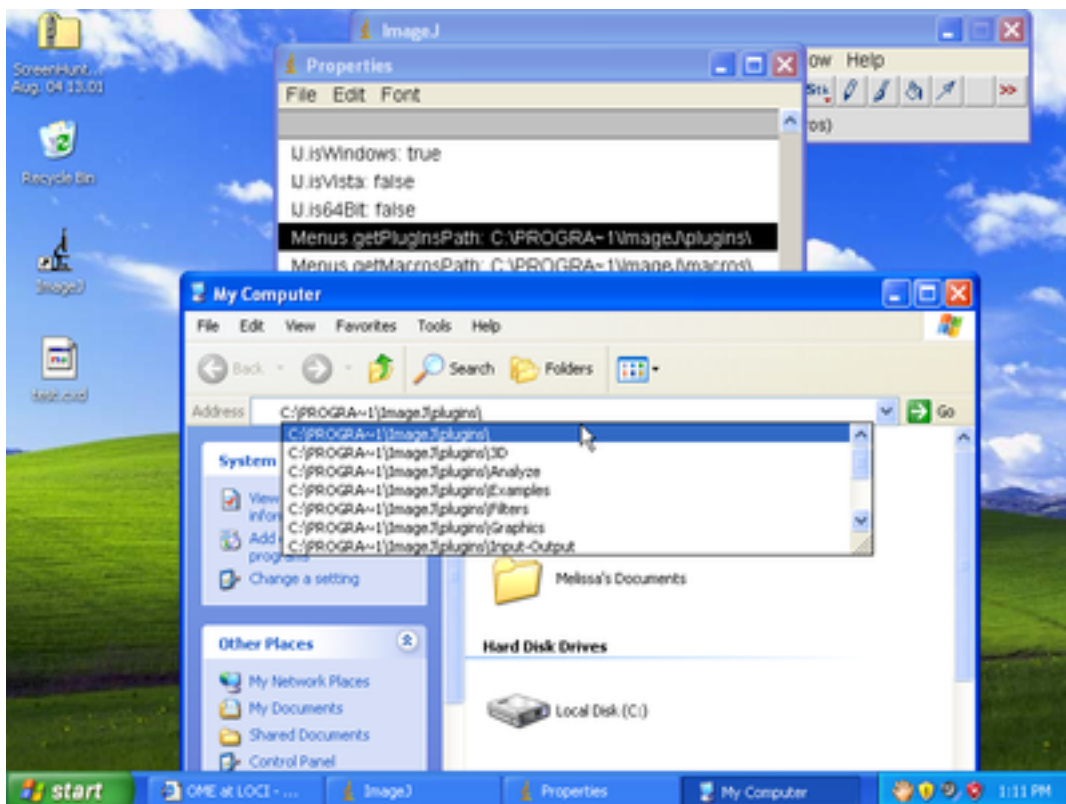
5) Scroll through the **Properties** window until you find a line that starts with “Menus.getPlugInsPath” (highlighted).



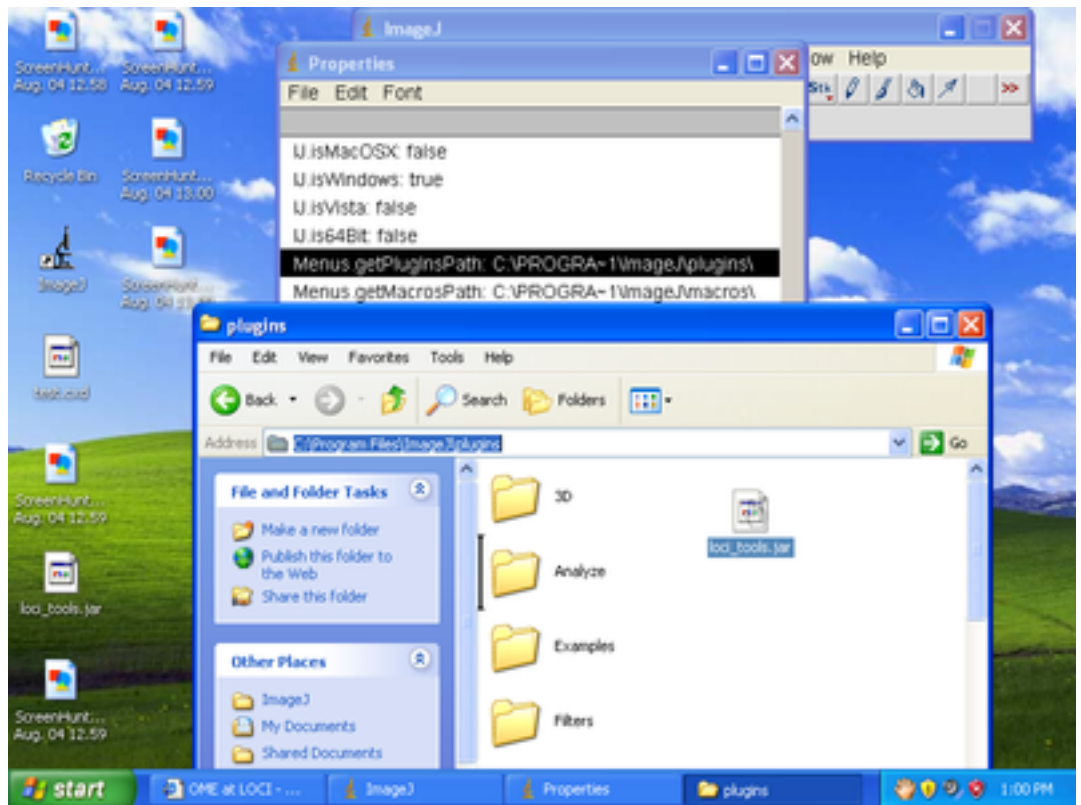
6) Leaving ImageJ and the Properties window open, click the **Start** button, then **My Computer**.



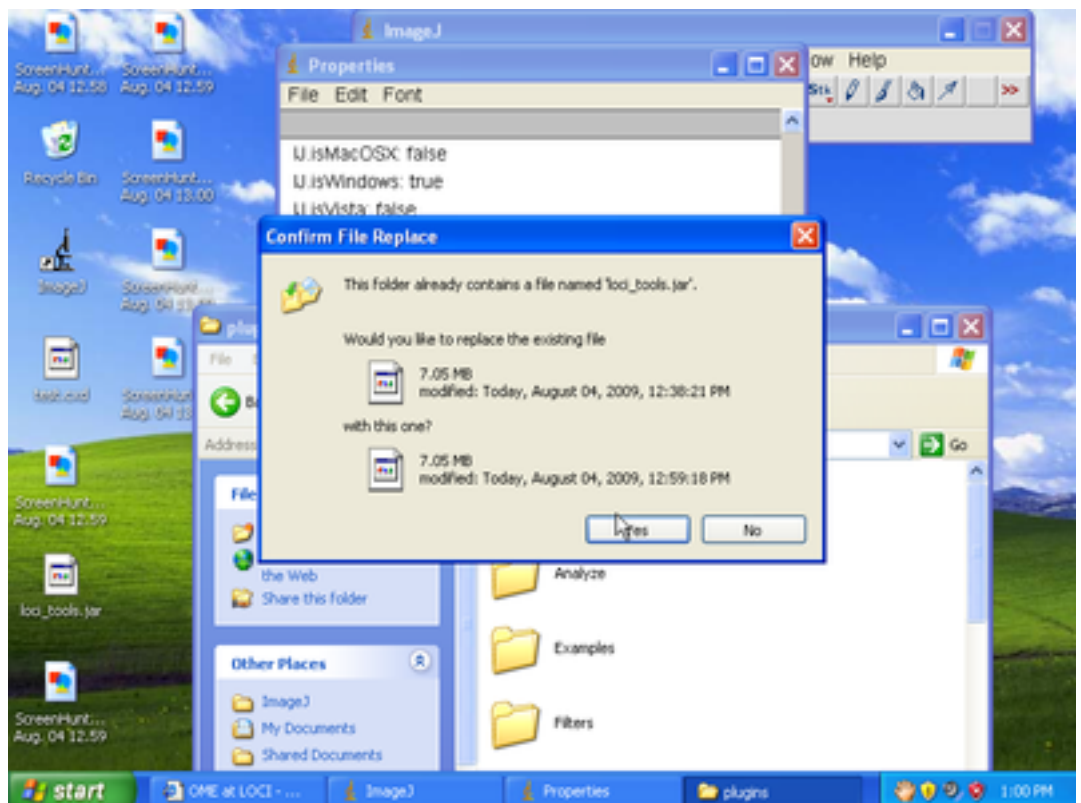
7) Type the path from step 5 into the address bar in the **My Computer** window, then hit the **Enter** key. The path should look something like this `C:\PROGRA~1\ImageJ\plugins\`



8) Click “loci_tools.jar” on your Desktop and drag it to the “plugins” window.



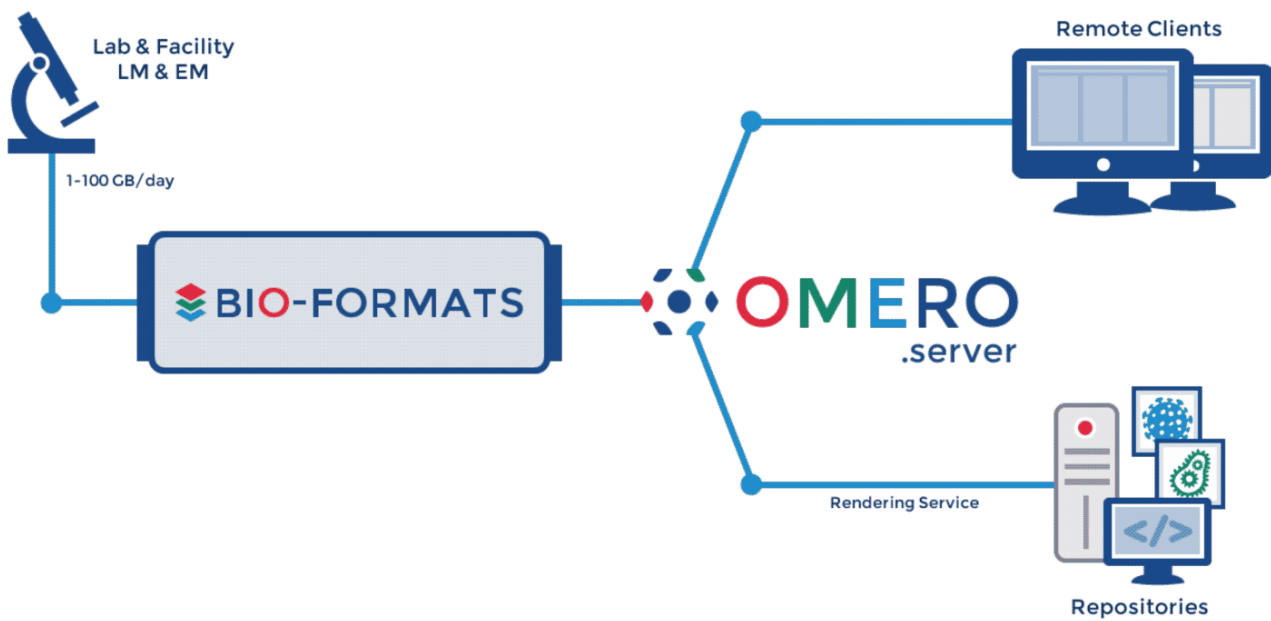
9. If you are asked to replace an existing file, click “Yes”.



10. Close ImageJ.
11. Open ImageJ.
- 12) ImageJ now recognizes the latest trunk build of the Bio-Formats importer.

OMERO

OMERO.importer uses Bio-Formats to read image pixels and propagate metadata into the OMERO.server system. Please refer to the [OMERO documentation](#)¹ for further information.



¹<http://www.openmicroscopy.org/site/support/omero5/>

IMAGE SERVER APPLICATIONS

7.1 BISQUE

The **BISQUE**¹ (Bio-Image Semantic Query User Environment) Database, developed at the Center for Bio-Image Informatics at UCSB, was developed for the exchange and exploration of biological images. The Bisque system supports several areas useful for imaging researchers from image capture to image analysis and querying. The bisque system is centered around a database of images and metadata. Search and comparison of datasets by image data and content is supported. Novel semantic analyses are integrated into the system allowing high level semantic queries and comparison of image content.

Bisque integrates with Bio-Formats by calling the *showinf command line tool*.

7.2 OME Server

OME² is a set of software that interacts with a database to manage images, image metadata, image analysis and analysis results. The OME system is capable of leveraging Bio-Formats to import files.

Please note - the OME server is no longer maintained and has now been superseded by the **OMERO server**³.

7.2.1 Installation

For **OME Perl v2.6.1**⁴ and later, the command line installer automatically downloads the latest **loci_tools.jar** and places it in the proper location. This location is configurable, but is **/OME/java/loci_tools.jar** by default.

For a list of what was recognized for a particular import into the OME server, go to the Image details page in the web interface, and click the “Image import” link in the upper right hand box.

Bio-Formats is capable of parsing original metadata for supported formats, and standardizes what it can into the OME data model. For the rest, it expresses the metadata in OME terms as key/value pairs using an OriginalMetadata custom semantic type. However, this latter method of metadata representation is of limited utility, as it is not a full conversion into the OME data model.

Bio-Formats is enabled in OME v2.6.1 for all formats except:

- OME-TIFF
- Metamorph HTD
- Deltavision DV
- Metamorph STK
- Bio-Rad PIC
- Zeiss LSM
- TIFF
- BMP

¹<http://www.bioimage.ucsb.edu/bisque>

²<http://openmicroscopy.org/site/support/legacy/ome-server>

³<http://www.openmicroscopy.org/site/support/omero5/>

⁴<http://cvs.openmicroscopy.org.uk/>

- DICOM
- OME-XML

The above formats have their own Perl importers that override Bio-Formats, meaning that Bio-Formats is not used to process them by default. However, you can override this behavior (except for Metamorph HTD, which Bio-Formats does not support) by editing an OME database configuration value:

```
% psql ome
```

To see the current file format reader list:

```
ome=# select value from configuration where name='import_formats';
 value
-----
['OME::ImportEngine::OMETIFFreader', 'OME::ImportEngine::MetamorphHTDFormat',
'OME::ImportEngine::DVreader', 'OME::ImportEngine::STKreader',
'OME::ImportEngine::BioradReader', 'OME::ImportEngine::LSMreader',
'OME::ImportEngine::TIFFreader', 'OME::ImportEngine::BMPreader',
'OME::ImportEngine::DICOMreader', 'OME::ImportEngine::XMLreader',
'OME::ImportEngine::BioFormats']
(1 row)
```

To remove extraneous readers from the list:

```
ome=# update configuration set value=['\OME::ImportEngine::MetamorphHTDFormat\',
\OME::ImportEngine::XMLreader\', '\OME::ImportEngine::BioFormats\'] where
name='import_formats';
UPDATE 1
ome=# select value from configuration where name='import_formats';
 value
-----
['OME::ImportEngine::MetamorphHTDFormat', 'OME::ImportEngine::XMLreader',
'OME::ImportEngine::BioFormats']
(1 row)
```

To reset things back to how they were:

```
ome=# update configuration set value=['\OME::ImportEngine::OMETIFFreader\',
\OME::ImportEngine::MetamorphHTDFormat\', '\OME::ImportEngine::DVreader\',
\OME::ImportEngine::STKreader\', '\OME::ImportEngine::BioradReader\',
\OME::ImportEngine::LSMreader\', '\OME::ImportEngine::TIFFreader\',
\OME::ImportEngine::BMPreader\', '\OME::ImportEngine::DICOMreader\',
\OME::ImportEngine::XMLreader\', '\OME::ImportEngine::BioFormats\'] where
name='import_formats';
```

Lastly, please note that Li-Cor L2D files cannot be imported into an OME server (see [this Trac ticket](#)⁵ for details). Since the OME perl server has been discontinued, we have no plans to fix this limitation.

7.2.2 Upgrading

You can upgrade your OME server installation to take advantage of a [new Bio-Formats release](#)⁶ by overwriting the old `loci_tools.jar` with the new one.

7.2.3 Source Code

The source code for the Bio-Formats integration with OME server spans three languages, using piped system calls in both directions to communicate, with imported pixels written to OMEIS pixels files. The relevant source files are:

⁵<http://dev.loci.wisc.edu/trac/software/ticket/266>

⁶<http://downloads.openmicroscopy.org/bio-formats/>

- `OmeisImporter.java`⁷ – omebf Java command line tool
- `BioFormats.pm`⁸ – Perl module for OME Bio-Formats importer
- `omeis.c`⁹ – OMEIS C functions for Bio-Formats (search for “bioformats” case insensitively to find relevant sections)

⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/ome/OmeisImporter.java>

⁸<http://svn.openmicroscopy.org.uk/svn/ome/trunk/src/perl2/OME/ImportEngine/BioFormats.pm>

⁹<http://svn.openmicroscopy.org.uk/svn/ome/trunk/src/C/omeis/omeis.c>

LIBRARIES AND SCRIPTING APPLICATIONS

8.1 Command line tools

There are several scripts for using Bio-Formats on the command line.

8.1.1 Installation

Download [bftools.zip](#)¹, unzip it into a new folder, then download [loci_tools.jar](#)² and place it in the same folder.

The zip file contains both Unix scripts and Windows batch files. Currently available tools include:

showinf Prints information about a given image file to the console, and displays the image itself in the Bio-Formats image viewer.

ijview Displays the given image file in ImageJ using the Bio-Formats Importer plugin (requires **ij.jar**).

bfconvert Converts an image file from one format to another. Bio-Formats must support writing to the output file (determined by extension; see the *Supported Formats*).

formatlist Displays a list of supported file formats in HTML, plaintext or XML.

xmlindent A simple XML prettifier similar to `xmllint --format` but more robust in that it attempts to produce output regardless of syntax errors in the XML.

xmlvalid A command-line XML validation tool, useful for checking an OME-XML document for compliance with the OME-XML schema.

omeul A command-line client-side import tool for OME.

tiffcomment Dumps the comment from the given TIFF file's first IFD entry; useful for examining the OME-XML block in an OME-TIFF file.

All scripts require **loci_tools.jar** in the same directory as the command line tools.

8.1.2 Tutorial

There is a [Bio-Formats command line tools tutorial](#)³ on the FARSIGHT web site.

8.1.3 Using the tools directly from source

If you have *checked out the source from the Git repository* you already have the command line tools in the `tools` directory. You can configure the scripts to use your source tree instead of **loci_tools.jar** in the same directory by following these steps:

1. Point your CLASSPATH to the checked-out directory and the JAR files in the **jar** folder.
 - E.g. on Windows with Java 1.6 or later, if you have checked out the source at `C:\code\loci`, set your CLASSPATH environment variable to the value `C:\code\loci\jar*;C:\code\loci`. You can access the environment variable configuration area by right-clicking on My Computer, choosing Properties, Advanced tab, Environment Variables button.

¹<http://downloads.openmicroscopy.org/bio-formats/>

²<http://downloads.openmicroscopy.org/bio-formats/>

³http://www.farsight-toolkit.org/wiki/FARSIGHT_Tutorials/Bio-Formats

2. Compile the source with `ant compile`.
3. Set the `LOCI_DEVEL` environment variable to any value (the variable just needs to be defined).

8.1.4 Version checker

If you run `bftools` outside of the OMERO environment, you may encounter an issue with the automatic version checker causing a tool to crash when trying to connect to `upgrade.openmicroscopy.org.uk`. The error message will look something like this:

```
Failed to compare version numbers
java.io.IOException: Server returned HTTP response code: 400 for URL:
http://upgrade.openmicroscopy.org.uk?version=4.4.8;os.name=Linux;os.
version=2.6.32-358.6.2.el6.x86_64;os.arch=amd64;java.runtime.version=
1.6.0_24-b24;java.vm.vendor=Sun+Microsystems+Inc.;bioformats.caller=
Bio-Formats+utilities
```

To avoid this issue, call the tool with the `-no-upgrade` parameter.

8.2 FARSIGHT

FARSIGHT⁴ is a collection of modules for image analysis created by LOCI's collaborators at the [University of Houston](#)⁵. These open source modules are built on the *ITK* library and thus can take advantage of ITK's support for Bio-Formats to process otherwise unsupported image formats.

The principal FARSIGHT module that benefits from Bio-Formats is the [Nucleus Editor](#)⁶, though in principle any FARSIGHT-based code that reads image formats via the standard ITK mechanism will be able to leverage Bio-Formats.

See also:

[FARSIGHT Downloads page](#)⁷

[FARSIGHT HowToBuild tutorial](#)⁸

8.3 i3dcore

i3dcore⁹, also known as the CBIA 3D image representation library, is a 3D image processing library developed at the [Centre for Biomedical Image Analysis](#)¹⁰. Together with **i3dalgo**¹¹ and **i4dcore**¹², **i3dcore** forms a continuously developed templated cross-platform C++ suite of libraries for multidimensional image processing and analysis.

i3dcore is capable of reading images with Bio-Formats using [Java for C++](#)¹³ (`java4cpp`).

See also:

[Download i3dcore](#)¹⁴

[CBIA Software Development](#)¹⁵

⁴<http://www.farsight-toolkit.org/>

⁵<http://www.uh.edu/>

⁶<http://www.farsight-toolkit.org/wiki/NucleusEditor>

⁷<http://www.farsight-toolkit.org/wiki/Special:FarsightDownloads>

⁸http://www.farsight-toolkit.org/wiki/FARSIGHT_HowToBuild

⁹http://cbia.fi.muni.cz/user_dirs/i3dlib_doc/i3dcore/index.html

¹⁰<http://cbia.fi.muni.cz/software-development.html>

¹¹http://cbia.fi.muni.cz/user_dirs/i3dlib_doc/i3dalgo/index.html

¹²http://cbia.fi.muni.cz/user_dirs/of_doc/libi4d.html

¹³<http://java4cpp.kapott.org/>

¹⁴http://cbia.fi.muni.cz/user_dirs/i3dlib_doc/i3dcore/index.html#download

¹⁵<http://cbia.fi.muni.cz/software-development.html>

8.4 ImgLib

`ImgLib2`¹⁶ is a multidimensional image processing library. It provides a general mechanism for writing image analysis algorithms, without writing case logic for `bit depth`¹⁷, or worrying about the source of the pixel data (arrays in memory, files on disk, etc.).

The `SCIFIO`¹⁸ project provides an `ImgOpener`¹⁹ utility class for reading data into `ImgLib2` data structures using Bio-Formats.

8.5 ITK

The `Insight Toolkit`²⁰ (ITK) is an open-source, cross-platform system that provides developers with an extensive suite of software tools for image analysis. Developed through extreme programming methodologies, ITK employs leading-edge algorithms for registering and segmenting multidimensional data.

ITK provides an `ImageIO` plug-in structure that works via discovery through a dependency injection scheme. This allows a program built on ITK to load plug-ins for reading and writing different image types without actually linking to the `ImageIO` libraries required for those types. Such encapsulation automatically grants two major boons: firstly, programs can be easily extended just by virtue of using ITK (developers do not have to specifically accommodate or anticipate what plug-ins may be used). Secondly, the architecture provides a distribution method for open source software, like Bio-Formats, which have licenses that might otherwise exclude them from being used with other software suites.

The `SCIFIO ImageIO`²¹ plugin provides an for ITK `imageIO` base that uses `Bio-Formats`²² to read and write supported life sciences file formats. This plugin allows any program built on ITK to read any of the image types supported by Bio-Formats.

8.5.1 Prerequisites

You should have `CMake`²³ installed, to allow the configuration of ITK builds. If you want the latest ITK development build, you will need `Git`²⁴ as well.

8.5.2 Installation

Simply download ITK from the [Kitware software page](#)²⁵. Using `CMake`, set the following configuration flag:

```
Fetch_SCIFIO = ON
```

Note: This flag is only visible in “advanced” mode within `CMake`

If you would like to use the utility classes included with the `SCIFIO imageIO`, also set the flag:

```
BUILD_TESTING = ON
```

Then build ITK as normal. It will automatically download and build the latest `SCIFIO imageIO` plugin.

8.5.3 Usage

Applications using the installed ITK should automatically defer to the `SCIFIO ImageIO`, and thus Bio-Formats, when reading or saving images not natively supported by ITK.

¹⁶<http://imglib2.net/>

¹⁷http://en.wikipedia.org/wiki/Color_depth

¹⁸<http://scif.io/>

¹⁹<https://github.com/scifio/scifio/blob/master/scifio/src/main/java/io/scif/img/ImgOpener.java>

²⁰<http://itk.org/>

²¹<https://github.com/scifio/scifio-imageio>

²²<http://farsight-toolkit.org/wiki/Bio-Formats>

²³<http://www.cmake.org/>

²⁴<http://git-scm.com/>

²⁵<http://www.itk.org/ITK/resources/software.html>

To use the SCIFIO test utility, run:

```
ITKIOSCIFIOTestDriver
```

from your `${ITK_BUILD}/bin` directory. This program has four separate applications that can be directly invoked using the syntax:

```
ITKIOSCIFIOTestDriver [Program to run] [Program arguments]
```

The programs are as follows:

itkSCIFIOImageInfoTest Displays basic information to verify the SCIFIO imageIO works, using .fake images.

itkSCIFIOImageIOTest Reads an input image, and writes it out as a specified type

itkRGBSCIFIOImageTest Same as itkSCIFIOImageIOTest but for RGB²⁶ types

itkVectorImageSCIFIOImageIOTest Same as itkSCIFIOImageIOTest but for VectorImage²⁷ type

For example, to convert a .czi image to a .tif, you would use:

```
ITKIOSCIFIOTestDriver itkSCIFIOImageIOTest in.czi out.tif
```

8.5.4 Troubleshooting

Please send any issues, suggestions or requests to the [insight users mailing list](#)²⁸.

8.6 Qu for MATLAB

[Qu for MATLAB](#)²⁹ is a MATLAB toolbox for the visualization and analysis of N-dimensional datasets targeted to the field of biomedical imaging, developed by Aaron Ponti.

- Uses Bio-Formats to read files
- Open source software available under the Mozilla Public License

See also:

[Qu for MATLAB download page](#)³⁰

8.7 Subimager

[Subimager](#)³¹, the SUBprocess IMAGE servER, is an HTTP server that uses Bio-Formats as a back-end to serve .TIF images. Subimager is designed to be run as a subprocess of CellProfiler to provide CellProfiler with the capability to read and write a variety of image formats. It can be used as a stand-alone image server. It was developed by the [Broad Institute](#)³² to facilitate integration with their [CellProfiler](#)³³ image analysis application.

²⁶http://www.itk.org/Doxygen/html/classitk_1_1RGBPixel.html

²⁷http://www.itk.org/Doxygen/html/classitk_1_1VectorImage.html

²⁸<http://www.itk.org/ITK/help/mailling.html>

²⁹http://www.scs2.net/home/index.php?option=com_content&view=article&id=46%3Aqu-for-matlab&catid=34%3Aqu&Itemid=55

³⁰http://www.scs2.net/home/index.php?option=com_content&view=article&id=46%3Aqu-for-matlab&catid=34%3Aqu&Itemid=55&limitstart=3

³¹<https://github.com/CellProfiler/subimager>

³²<http://www.broadinstitute.org/>

³³<http://www.cellprofiler.org/>

NUMERICAL DATA PROCESSING APPLICATIONS

9.1 IDL

IDL¹ (Interactive Data Language) is a popular data visualization and analysis platform used for interactive processing of large amounts of data including images.

IDL possesses the ability to interact with Java applications via its IDL-Java bridge. Karsten Rodenacker has written a script that uses Bio-Formats to read in image files to IDL.

9.1.1 Installation

Download the `ij_read_bio_formats.pro`² script from Karsten Rodenacker's [IDL goodies \(?\)](#)³ web site. See the comments at the top of the script for installation instructions and caveats.

9.1.2 Upgrading

To use a newer version of Bio-Formats, overwrite the requisite JAR files with the [newer version](#)⁴ and restart IDL.

9.2 KNIME

KNIME⁵ (Konstanz Information Miner) is a user-friendly and comprehensive open-source data integration, processing, analysis, and exploration platform. KNIME supports image import using Bio-Formats using the [KNIME Image Processing](#)⁶ (a.k.a. KNIP) plugin.

9.3 MATLAB

MATLAB⁷ is a high-level language and interactive environment that facilitates rapid development of algorithms for performing computationally intensive tasks.

Calling Bio-Formats from MATLAB is fairly straightforward, since MATLAB has built-in interoperability with Java. We have created a [set of scripts](#)⁸ for reading image files. Note the minimum supported MATLAB version is R2007b (7.5).

¹<http://www.exelisvis.com/ProductsServices/IDL.aspx>

²http://www.helmholtz-muenchen.de/ibb/homepage/karsten.rodenacker/IDL/_pro/ij_read_bio_formats.pro

³<http://www.helmholtz-muenchen.de/ibb/homepage/karsten.rodenacker/IDL/index.php>

⁴<http://downloads.openmicroscopy.org/bio-formats/>

⁵<http://knime.org/>

⁶<http://tech.knime.org/community/image-processing>

⁷<http://www.mathworks.com/products/matlab/>

⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/matlab>

9.3.1 Installation

Download **bfmatlab.zip** and **loci_tools.jar** from the Bio-Formats [downloads page](#)⁹. Unzip **bfmatlab.zip** into a new folder, move **loci_tools.jar** into the same folder and add this folder to your MATLAB path.

9.3.2 Usage

Please see *Using Bio-Formats in MATLAB* for usage instructions. If you intend to extend the existing .m files, please also see the *developer page* for more information on how to use Bio-Formats in general.

9.3.3 Performance

In our tests (MATLAB R14 vs. java 1.6.0_20), the script executes at approximately half the speed of our *showinf command line tool*, due to overhead from copying arrays.

9.3.4 Upgrading

To use a newer version of Bio-Formats, overwrite **loci_tools.jar** with the [newer version](#)¹⁰ and restart MATLAB.

9.3.5 Alternative scripts

Several other groups have developed their own MATLAB scripts that use Bio-Formats, including the following:

- <https://github.com/prakatmac/bf-tools/>
- [imread for multiple life science image file formats](#)¹¹

9.4 VisAD

The [VisAD](#)¹² visualization toolkit is a Java component library for interactive and collaborative visualization and analysis of numerical data. VisAD uses Bio-Formats to read many image formats, notably TIFF.

9.4.1 Installation

The **visad.jar** file has Bio-Formats bundled inside, so no further installation is necessary.

9.4.2 Upgrading

It should be possible to use a newer version of Bio-Formats by putting the latest **loci_tools.jar**¹³ or **bio-formats.jar**¹⁴ before **visad.jar** in the class path. Alternately, you can create a “VisAD Lite” using the `make lite` command from VisAD source, and use the resultant **visad-lite.jar**, which is a stripped down version of VisAD without sample applications or Bio-Formats bundled in.

⁹<http://downloads.openmicroscopy.org/bio-formats/>

¹⁰<http://downloads.openmicroscopy.org/bio-formats/>

¹¹<http://www.mathworks.com/matlabcentral/fileexchange/32920-imread-for-multiple-life-science-image-file-formats>

¹²<http://www.ssec.wisc.edu/%7Ebillh/visad.html>

¹³<http://downloads.openmicroscopy.org/bio-formats/>

¹⁴<http://downloads.openmicroscopy.org/bio-formats/>

VISUALIZATION AND ANALYSIS APPLICATIONS

10.1 Bitplane Imaris

*Imaris*¹ is Bitplane's core scientific software module that delivers all the necessary functionality for data visualization, analysis, segmentation and interpretation of 3D and 4D microscopy datasets. Combining speed, precision and ease-of-use, Imaris provides a complete set of features for working with three- and four-dimensional multi-channel images of any size, from a few megabytes to multiple gigabytes in size.

As of *version 7.2*², Imaris integrates with *Fiji*, which includes Bio-Formats. See [this page](#)³ for a detailed list of Imaris' features.

10.2 CellProfiler

*CellProfiler*⁴—developed by the Broad Institute⁵'s *Imaging Platform*⁶—is free open-source software designed to enable biologists without training in computer vision or programming to quantitatively measure phenotypes from thousands of images automatically. CellProfiler uses Bio-Formats to read images from disk, as well as write movies.

10.2.1 Installation

The CellProfiler distribution comes with Bio-Formats included, so no further installation is necessary.

10.2.2 Upgrading

It should be possible to use a newer version of Bio-Formats by replacing the bundled **loci_tools.jar** with a newer version.

- For example, on Mac OS X, Ctrl+click the CellProfiler icon, choose Show Package Contents, and replace the following files:
 - Contents/Resources/bioformats/loci_tools.jar
 - Contents/Resources/lib/python2.5/bioformats/loci_tools.jar

See also:

[CellProfiler web site](#)⁷

10.3 Comstat2

Comstat2 is a Java-based computer program for the analysis and treatment of biofilm images in 3D. It is the Master's project of *Martin Vorregaard*⁸.

¹<http://www.bitplane.com/>

²<http://www.bitplane.com/go/releasenotes?product=Imaris&version=7.2&patch=0>

³<http://www.bitplane.com/imaris/imaris>

⁴<http://www.cellprofiler.org/>

⁵<http://www.broadinstitute.org/>

⁶<http://www.broadinstitute.org/science/platforms/imaging/imaging-platform>

⁷<http://www.cellprofiler.org/>

⁸<http://www.comstat.dk/>

Comstat2 uses the *Bio-Formats Importer plugin for ImageJ* to read files in TIFF and Leica LIF formats.

See also:

Comstat2 - a modern 3D image analysis environment for biofilms⁹

10.4 Endrov

Endrov¹⁰ (or <http://www.endrov.net>) (EV) is a multi-purpose image analysis program developed by the Thomas Burglin group¹¹ at Karolinska Institute¹², Department of Biosciences and Nutrition.

10.4.1 Installation

The EV distribution comes bundled with the core Bio-Formats library (**bio-formats.jar**), so no further installation is necessary.

10.4.2 Upgrading

It should be possible to use a newer version of Bio-Formats by downloading the latest **bio-formats.jar**¹³ and putting it into the `libs` folder of the EV distribution, overwriting the old file.

You could also include some *optional libraries*, to add support for additional formats, if desired.

10.5 FocalPoint

FocalPoint¹⁴ is an image browser, similar to *Windows Explorer*¹⁵ or other *file manager*¹⁶ application, specifically designed to work with more complex image types. FocalPoint uses Bio-Formats to generate thumbnails for some formats.

10.5.1 Installation

FocalPoint is bundled with Bio-Formats, so no further installation is necessary.

10.5.2 Upgrading

It should be possible to use a newer version of Bio-Formats¹⁷ by overwriting the old **loci_tools.jar** within the FocalPoint distribution. For Mac OS X, you will have to control click the FocalPoint program icon, choose “Show Package Contents” and navigate into Contents/Resources/Java to find the **loci_tools.jar** file.

10.6 Graphic Converter

Graphic Converter¹⁸ is a Mac OS application for opening, editing, and organizing photos. Versions 6.4.1 and later use Bio-Formats to open all file formats supported by Bio-Formats.

⁹http://www2.imm.dtu.dk/pubdb/views/publication_details.php?id=5628

¹⁰<https://github.com/mahogny/Endrov>

¹¹<http://www.biosci.ki.se/groups/tbu>

¹²<http://www.ki.se/>

¹³<http://downloads.openmicroscopy.org/bio-formats/>

¹⁴<http://www.bioinformatics.bbsrc.ac.uk/projects/focalpoint/>

¹⁵http://en.wikipedia.org/wiki/Windows_Explorer

¹⁶http://en.wikipedia.org/wiki/File_manager

¹⁷<http://downloads.openmicroscopy.org/bio-formats/>

¹⁸<http://www.lemkesoft.com>

10.7 Icy

Icy¹⁹ is an open-source image analysis and visualization software package that combines a user-friendly graphical interface with the ability to write scripts and plugins that can be uploaded to a centralized website. It uses Bio-Formats internally to read images and acquisition metadata, so no further installation is necessary.

10.8 imago

Mayachitra imago²⁰ is an advanced desktop image management package that enables scientists to easily store, manage, search, and analyze 5D biological images and their analysis results. imago integrates flexible annotation and metadata management with advanced image analysis tools.

imago uses Bio-Formats to read files in some formats, including Bio-Rad PIC, Image-Pro Workspace, Metamorph TIFF, Leica LCS LEI, Olympus FluoView FV1000, Nikon NIS-Elements ND2, and Zeiss LSM.

A free 30-day trial version of imago is available [here](#)²¹.

10.9 Iqm

Iqm²² is an image processing application written in Java. It is mainly constructed around the Java JAI library and furthermore it incorporates the functionality of the popular ImageJ image processing software.

Because iqm integrates with ImageJ, it can take advantage of the *Bio-Formats ImageJ plugin* to read image data.

10.10 Macnification

Macnification²³ is a Mac OS X application for organizing, editing, analyzing and annotating microscopic images, designed for ease of use. It is being developed by Orbicule²⁴.

Macnification uses Bio-Formats to read files in some formats, including Gatan DM3, ICS, ImagePro SEQ, ImagePro IPW, Metamorph STK, OME-TIFF and Zeiss LSM.

See also:

[Free trial download](#)²⁵

10.11 MIPAV

The MIPAV²⁶ (Medical Image Processing, Analysis, and Visualization) application—developed at the [Center for Information Technology](#)²⁷ at the [National Institutes of Health](#)²⁸—enables quantitative analysis and visualization of medical images of numerous modalities such as PET, MRI, CT, or microscopy. You can use Bio-Formats as a plugin for MIPAV to read images in the formats it supports.

¹⁹<http://icy.bioimageanalysis.org/>

²⁰<http://mayachitra.com/imago/index.html>

²¹<http://mayachitra.com/imago/download-trial.php>

²²<http://code.google.com/p/iqm/>

²³<http://www.orbicule.com/macnification/>

²⁴<http://www.orbicule.com>

²⁵<http://www.orbicule.com/macnification/download>

²⁶<http://mipav.cit.nih.gov/>

²⁷<http://cit.nih.gov/>

²⁸<http://nih.gov/>

10.11.1 Installation

Follow these steps to install the Bio-Formats plugin for MIPAV:

1. Download `loci_tools.jar`²⁹ and drop it into your MIPAV folder.
2. Download the `plugin source code`³⁰ into your user `mipav/plugins` folder.
3. From the command line, compile the plugin with:

```
cd mipav/plugins
javac -cp $MIPAV:$MIPAV/loci\_tools.jar \\  
    PlugInBioFormatsImporter.java
```

4. where `$MIPAV` is the location of your MIPAV installation.
5. Add `loci_tools.jar` to MIPAV's class path:
 - How to do so depends on your platform.
 - E.g., in Mac OS X, edit the `mipav.app/Contents/Info.plist` file.
6. Run MIPAV and a new “BioFormatsImporter - read image” menu item will appear in the Plugins > File submenu.

See the `readme file`³¹ for more information.

To upgrade, just overwrite the old `loci_tools.jar` with the `latest one`³². You may want to download the latest version of MIPAV first, to take advantage of new features and bug-fixes.

10.12 Vaa3D

Vaa3D³³, developed by the Peng Lab³⁴ at the HHMI Janelia Farm Research Campus³⁵, is a handy, fast, and versatile 3D/4D/5D Image Visualization & Analysis System for Bioimages & Surface Objects.

Vaa3D can use Bio-Formats via the `Bio-Formats C++ bindings`³⁶ to read images.

10.13 VisBio

VisBio³⁷ is a biological visualization tool designed for easy visualization and analysis of multidimensional image data. VisBio uses Bio-Formats to import files as the Bio-Formats library originally grew out of our efforts to continually expand the file format support within VisBio.

10.13.1 Installation

VisBio is bundled with Bio-Formats, so no further installation is necessary.

10.13.2 Upgrading

It should be possible to use a `newer version of Bio-Formats`³⁸ by overwriting the old `bio-formats.jar` and optional libraries within the VisBio distribution. For Mac OS X, you'll have to control click the VisBio program icon, choose “Show Package Contents” and navigate into `Contents/Resources/Java` to find the JAR files.

²⁹<http://downloads.openmicroscopy.org/bio-formats/>

³⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/utis/mipav/PlugInBioFormatsImporter.java>

³¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/utis/mipav/readme.txt>

³²<http://downloads.openmicroscopy.org/bio-formats/>

³³<http://vaa3d.org>

³⁴<http://penglab.janelia.org/>

³⁵<http://www.hhmi.org/janelia/>

³⁶http://www.farsight-toolkit.org/wiki/FARSIGHT_Tutorials/Building_Software/Bio-Formats/Building_C%2B%2B_Bindings

³⁷<http://www.loci.wisc.edu/visbio/>

³⁸<http://downloads.openmicroscopy.org/bio-formats/>

10.14 XuvTools

XuvTools³⁹ is automated 3D stitching software for biomedical image data. As of release 1.8.0, XuvTools uses Bio-Formats to read image data.

³⁹<http://www.xuvtools.org>

Part III

Developer Documentation

USING BIO-FORMATS

11.1 An in-depth guide to using Bio-Formats

11.1.1 Overview

This document describes various things that are useful to know when working with Bio-Formats. It is recommended that you obtain the Bio-Formats source by following the directions on the *source code page*, rather than using an official release. It is also recommended that you have a copy of the *Javadocs*¹ nearby - the notes that follow will make more sense when you see the API.

For a complete list of supported formats, see the Bio-Formats *supported formats table*.

For a few working examples of how to use Bio-Formats, see *these Github pages*²

11.1.2 Basic file reading

Bio-Formats provides several methods for retrieving data from files in an arbitrary (supported) format. These methods fall into three categories: raw pixels, core metadata, and format-specific metadata. All methods described here are present and documented in *loci.formats.IFormatReader*³ - it is advised that you take a look at the source and/or the Javadocs. In general, it is recommended that you read files using an instance of *ImageReader*⁴. While it is possible to work with readers for a specific format, *ImageReader* contains additional logic to automatically detect the format of a file and delegate subsequent calls to the appropriate reader.

Prior to retrieving pixels or metadata, it is necessary to call *setId(String)*⁵ on the reader instance, passing in the name of the file to read. Some formats allow multiple series (5D image stacks) per file; in this case you may wish to call *setSeries(int)*⁶ to change which series is being read.

Raw pixels are always retrieved one plane at a time. Planes are returned as raw byte arrays, using one of the *openBytes* methods.

Core metadata is the general term for anything that might be needed to work with the planes in a file. A list of core metadata fields is given below, with the appropriate accessor method in parentheses:

- image width (*getSizeX()*⁷)
- image height (*getSizeY()*⁸)
- number of series per file (*getSeriesCount()*⁹)
- total number of images per series (*getImageCount()*¹⁰)
- number of slices in the current series (*getSizeZ()*¹¹)
- number of timepoints in the current series (*getSizeT()*¹²)

¹<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/>

²<http://github.com/openmicroscopy/bioformats/tree/develop/components/bio-formats/utills>

³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/IFormatReader.java>

⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/ImageReader.java>

⁵[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatHandler.html#setId\(java.lang.String\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatHandler.html#setId(java.lang.String))

⁶[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#setSeries\(int\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#setSeries(int))

⁷[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeX\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeX())

⁸[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeY\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeY())

⁹[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSeriesCount\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSeriesCount())

¹⁰[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getImageCount\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getImageCount())

¹¹[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeZ\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeZ())

¹²[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeT\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeT())

- number of actual channels in the current series (`getSizeC()`¹³)
- number of channels per image (`getRGBChannelCount()`¹⁴)
- the ordering of the images within the current series (`getDimensionOrder()`¹⁵)
- whether each image is RGB (`isRGB()`¹⁶)
- whether the pixel bytes are in little-endian order (`isLittleEndian()`¹⁷)
- whether the channels in an image are interleaved (`isInterleaved()`¹⁸)
- the type of pixel data in this file (`getPixelType()`¹⁹)

All file formats are guaranteed to accurately report core metadata.

Format-specific metadata refers to any other data specified in the file - this includes acquisition and hardware parameters, among other things. This data is stored internally in a `java.util.Hashtable`, and can be accessed in one of two ways: individual values can be retrieved by calling `getMetadataValue(String)`²⁰, which gets the value of the specified key. Alternatively, `getMetadata()`²¹ will return the entire Hashtable. Note that the keys in this Hashtable are different for each format, hence the name “format-specific metadata”.

See *Bio-Formats metadata processing* for more information on the metadata capabilities that Bio-Formats provides.

11.1.3 File reading extras

The previous section described how to read pixels as they are stored in the file. However, the native format is not necessarily convenient, so Bio-Formats provides a few extras to make file reading more flexible.

- There are a few “wrapper” readers (that implement `IFormatReader`) that take a reader in the constructor, and manipulate the results somehow, for convenience. Using them is similar to the `java.io.InputStream/OutputStream` model: just layer whichever functionality you need by nesting the wrappers.
 - `BufferedImageReader`²² extends `IFormatReader`, and allows pixel data to be returned as `BufferedImages` instead of raw byte arrays.
 - `FileStitcher`²³ extends `IFormatReader`, and uses advanced pattern matching heuristics to group files that belong to the same dataset.
 - `ChannelSeparator`²⁴ extends `IFormatReader`, and makes sure that all planes are grayscale - RGB images are split into 3 separate grayscale images.
 - `ChannelMerger`²⁵ extends `IFormatReader`, and merges grayscale images to RGB if the number of channels is greater than 1.
 - `ChannelFiller`²⁶ extends `IFormatReader`, and converts indexed color images to RGB images.
 - `MinMaxCalculator`²⁷ extends `IFormatReader`, and provides an API for retrieving the minimum and maximum pixel values for each channel.
 - `DimensionSwapper`²⁸ extends `IFormatReader`, and provides an API for changing the dimension order of a file.

¹³[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeC\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSizeC())

¹⁴[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getRGBChannelCount\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getRGBChannelCount())

¹⁵[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getDimensionOrder\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getDimensionOrder())

¹⁶[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isRGB\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isRGB())

¹⁷[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isLittleEndian\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isLittleEndian())

¹⁸[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isInterleaved\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isInterleaved())

¹⁹[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getPixelType\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getPixelType())

²⁰[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getMetadataValue\(java.lang.String\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getMetadataValue(java.lang.String))

²¹[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getMetadata\(\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getMetadata())

²²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/gui/BufferedImageReader.java>

²³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/FileStitcher.java>

²⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/ChannelSeparator.java>

²⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/ChannelMerger.java>

²⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/ChannelFiller.java>

²⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/MinMaxCalculator.java>

²⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/DimensionSwapper.java>

- [ImageTools](#)²⁹ and [loci.formats.gui.AWTImageTools](#)³⁰ provide a number of methods for manipulating `BufferedImages` and primitive type arrays. In particular, there are methods to split and merge channels in a `BufferedImage/array`, as well as converting to a specific data type (e.g. convert short data to byte data).

11.1.4 Writing files

The following file formats can be written using Bio-Formats:

- TIFF (uncompressed, LZW, JPEG, or JPEG-2000)
- OME-TIFF (uncompressed, LZW, JPEG, or JPEG-2000)
- JPEG
- PNG
- AVI (uncompressed)
- QuickTime (uncompressed is supported natively; additional codecs use QTJava)
- Encapsulated PostScript (EPS)
- OME-XML (not recommended)

The writer API (see [loci.formats.IFormatWriter](#)³¹) is very similar to the reader API, in that files are written one plane at time (rather than all at once).

All writers allow the output file to be changed before the last plane has been written. This allows you to write to any number of output files using the same writer and output settings (compression, frames per second, etc.), and is especially useful for formats that do not support multiple images per file.

Please see [loci.formats.tools.ImageConverter](#)³² and *this guide to exporting to OME-TIFF files* for examples of how to write files.

11.1.5 Arcane notes and implementation details

Known oddities:

- Importing multi-file formats (Leica LEI, PerkinElmer, FV1000 OIF, ICS, and Prairie TIFF, to name a few) can fail if any of the files are renamed. There are “best guess” heuristics in these readers, but they are not guaranteed to work in general. So please do not rename files in these formats.
- If you are working on a Macintosh, make sure that the data and resource forks of your image files are stored together. Bio-Formats does not handle separated forks (the native QuickTime reader tries, but usually fails).

11.2 Generating test images

Sometimes it is nice to have a file of a specific size or pixel type for testing. To generate a file (that contains gradient images):

```
touch "my-special-test-file&pixelType=uint8&sizeX=8192&sizeY=8192.fake"
```

Whatever is before the `&` is the image name; remaining key value pairs should be pretty self-explanatory. Just replace the values with whatever you need for testing.

There are a few other keys that can be added as well:

²⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/ImageTools.java>

³⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/gui/AWTImageTools.java>

³¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/IFormatWriter.java>

³²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-tools/src/loci/formats/tools/ImageConverter.java>

Key	Value
sizeZ	number of Z sections
sizeC	number of channels
sizeT	number of timepoints
bitsPerPixel	number of valid bits (<= number of bits implied by pixel type)
rgb	number of channels that are merged together
dimOrder	dimension order (e.g. XYZCT)
little	whether or not the pixel data should be little-endian
interleaved	whether or not merged channels are interleaved
indexed	whether or not a color lookup table is present
falseColor	whether or not the color lookup table is just for making the image look pretty
series	number of series (Images)
lutLength	number of entries in the color lookup table

You can often work with the .fake file directly, but in some cases support for those files is disabled and so you will need to convert the file to something else. Make sure that you have Bio-Formats built and the JARs in your CLASSPATH (individual JARs or just loci_tools.jar):

```
bfconvert test&pixelType=uint8&sizeX=8192&sizeY=8192.fake test.tiff
```

If you do not have the command line tools installed, substitute `loci.formats.tools.ImageConverter`³³ for `bfconvert`.

³³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-tools/src/loci/formats/tools/ImageConverter.java>

BIO-FORMATS AS A JAVA LIBRARY

12.1 API documentation

12.1.1 Using Bio-Formats as a Java library

If you wish to make use of Bio-Formats within your own software, you can [download bio-formats.jar¹](#) to use it as a library. Just add **bio-formats.jar** to your CLASSPATH or build path. You will also need **loci-common.jar** for common I/O functions, **ome-xml.jar** for metadata standardization, and **SLF4J²** for logging.

There are also certain packages that if present will be utilized to provide additional functionality. To include one, just place it in the same folder.

Package	Filename	License	Notes
Apache Jakarta POI ³ library, LOCI fork	poi-loci.jar⁴	Apache	For OLE-based formats (zvi, oib, ipw, cxd)
MDB Tools project ⁵ Java port, LOCI fork	mdbtools-java.jar⁶	LGPL	For Olympus CellR and Zeiss LSM metadata (mdb)
JAI Image I/O Tools ⁷ pure Java implementation, LOCI fork	jai_imageio.jar⁸	BSD	For JPEG2000-based formats (nd2, jp2)
NetCDF Java library ⁹	netcdf-4.3.19.jar¹⁰	LGPL	For HDF5-based formats (Imaris 5.5, MINC MRI)
QuickTime for Java ¹¹	QTJava.zip	Commercial	For additional QuickTime codecs

See the list in the [Bio-Formats toplevel build file¹²](#) for a complete and up-to-date list of all optional libraries, which can all be found in our [Git repository¹³](#).

Examples of usage

[ImageConverter¹⁴](#) - A simple command line tool for converting between formats.

[ImageInfo¹⁵](#) - A more involved command line utility for thoroughly reading an input file, printing some information about it, and displaying the pixels onscreen using the Bio-Formats viewer.

[MinimumWriter¹⁶](#) - A command line utility demonstrating the minimum amount of metadata needed to write a file.

¹<http://downloads.openmicroscopy.org/bio-formats/>

²<http://slf4j.org/>

³<http://jakarta.apache.org/poi/>

⁴<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/lastSuccessfulBuild/artifact/artifacts/poi-loci.jar>

⁵<http://sourceforge.net/projects/mdbtools>

⁶<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/lastSuccessfulBuild/artifact/artifacts/mdbtools-java.jar>

⁷<http://java.net/projects/jai-imageio>

⁸http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/lastSuccessfulBuild/artifact/artifacts/jai_imageio.jar

⁹<http://www.unidata.ucar.edu/software/netcdf-java/>

¹⁰<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/lastSuccessfulBuild/artifact/artifacts/netcdf-4.3.19.jar>

¹¹<http://www.apple.com/quicktime/download/standalone.html>

¹²<https://github.com/openmicroscopy/bioformats/blob/develop/build.xml>

¹³<https://github.com/openmicroscopy/bioformats/blob/develop/jar>

¹⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-tools/src/loci/formats/tools/ImageConverter.java>

¹⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-tools/src/loci/formats/tools/ImageInfo.java>

¹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/utills/MinimumWriter.java>

`PrintTimestamps`¹⁷ - A command line example demonstrating how to extract timestamps from a file.

`Simple_Read`¹⁸ - A simple ImageJ plugin demonstrating how to use Bio-Formats to read files into ImageJ (see *ImageJ*).

`Read_Image`¹⁹ - An ImageJ plugin that uses Bio-Formats to build up an image stack, reading image planes one by one (see *ImageJ*).

`Mass_Importer`²⁰ - A simple plugin for ImageJ that demonstrates how to open all image files in a directory using Bio-Formats, grouping files with similar names to avoiding opening the same dataset more than once (see *ImageJ*).

A Note on Java Web Start (`loci_tools.jar` vs. `bio-formats.jar`)

To use Bio-Formats with your Java Web Start application, we recommend using `bio-formats.jar` rather than `loci_tools.jar`—the latter is merely a bundle of `bio-formats.jar` plus all its optional dependencies.

The `loci_tools.jar` bundle is intended as a convenience (e.g. to simplify installation as an ImageJ plugin), but is by no means the only solution for developers. We recommend using `bio-formats.jar` as a separate entity depending on your needs as a developer.

The bundle is quite large because we have added support for several formats that need large helper libraries (e.g. Imaris' HDF-based format). However, these additional libraries are optional; Bio-Formats has been coded using reflection so that it can both compile and run without them.

When deploying a JNLP-based application, using `loci_tools.jar` directly is not the best approach, since every time Bio-Formats is updated, the server would need to feed another 8+ MB JAR file to the client. Rather, Web Start is a case where you should keep the JARs separate, since JNLP was designed to make management of JAR dependencies trivial for the end user. By keeping `bio-formats.jar` and the optional dependencies separate, only a <1 MB JAR needs to be updated when `bio-formats.jar` changes.

As a developer, you have the option of packaging `bio-formats.jar` with as many or as few optional libraries as you wish, to cut down on file size as needed. You are free to make whatever kind of “stripped down” version you require. You could even build a custom `bio-formats.jar` that excludes certain classes, if you like.

For an explicit enumeration of all the optional libraries included in `loci_tools.jar`, see the `loci-tools-libraries` variable of the `ant/toplevel.properties`²¹ file of the distribution. You can also read our notes about each in the source distribution's `Ant build.xml`²² script.

Also see [Bio-Formats Javadocs](#)²³

12.2 Examples

12.2.1 Exporting files using Bio-Formats

This guide pertains to version 4.2 and later.

Basic conversion

The first thing we need to do is set up a reader:

```
// create a reader that will automatically handle any supported format
IFormatReader reader = new ImageReader();
// tell the reader where to store the metadata from the dataset
MetadataStore metadata;

try {
    ServiceFactory factory = new ServiceFactory();
    OMEXMLService service = factory.getInstance(OMEXMLService.class);
    metadata = service.createOMEXMLMetadata();
}
```

¹⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/utils/PrintTimestamps.java>

¹⁸https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/Simple_Read.java

¹⁹https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/Read_Image.java

²⁰https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utils/Mass_Importer.java

²¹<https://github.com/openmicroscopy/bioformats/blob/develop/ant/toplevel.properties>

²²<https://github.com/openmicroscopy/bioformats/blob/develop/build.xml#L240>

²³<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/>

```

}
catch (DependencyException exc) {
    throw new FormatException("Could not create OME-XML store.", exc);
}
catch (ServiceException exc) {
    throw new FormatException("Could not create OME-XML store.", exc);
}

reader.setMetadataStore(metadata);
// initialize the dataset
reader.setId("/path/to/file");

```

Now, we set up our writer:

```

// create a writer that will automatically handle any supported output format
IFormatWriter writer = new ImageWriter();
// give the writer a MetadataRetrieve object, which encapsulates all of the
// dimension information for the dataset (among many other things)
writer.setMetadataRetrieve(MetadataTools.asRetrieve(reader.getMetadataStore()));
// initialize the writer
writer.setId("/path/to/output/file");

```

Note that the extension of the file name passed to ‘writer.setId(...)’ determines the file format of the exported file.

Now that everything is set up, we can start writing planes:

```

for (int series=0; series<reader.getSeriesCount(); series++) {
    reader.setSeries(series);
    writer.setSeries(series);

    for (int image=0; image<reader.getImageCount(); image++) {
        writer.saveBytes(image, reader.openBytes(image));
    }
}

```

Finally, make sure to close both the reader and the writer. Failure to do so can cause:

- file handle leaks
- memory leaks
- truncated output files

Fortunately, closing the files is very easy:

```

reader.close();
writer.close();

```

Converting large images

The flaw in the previous example is that it requires an image plane to be fully read into memory before it can be saved. In many cases this is fine, but if you are working with very large images (especially > 4 GB) this is problematic. The solution is to break each image plane into a set of reasonably-sized tiles and save each tile separately - thus substantially reducing the amount of memory required for conversion.

For now, we’ll assume that your tile size is 1024 x 1024, though in practice you will likely want to adjust this. Assuming you have an IFormatReader and IFormatWriter set up as in the previous example, let’s start writing planes:

```

int tileWidth = 1024;
int tileHeight = 1024;

for (int series=0; series<reader.getSeriesCount(); series++) {
    reader.setSeries(series);
    writer.setSeries(series);

    // determine how many tiles are in each image plane
    // for simplicity, we'll assume that the image width and height are
    // multiples of 1024

    int tileRows = reader.getSizeY() / tileHeight;
    int tileColumns = reader.getSizeX() / tileWidth;

    for (int image=0; image<reader.getImageCount(); image++) {
        for (int row=0; row<tileRows; row++) {
            for (int col=0; col<tileColumns; col++) {
                // open a tile - in addition to the image index, we need to specify
                // the (x, y) coordinate of the upper left corner of the tile,
                // along with the width and height of the tile

                int xCoordinate = col * tileWidth;
                int yCoordinate = row * tileHeight;
                byte[] tile =
                    reader.openBytes(image, xCoordinate, yCoordinate, tileWidth, tileHeight);
                writer.saveBytes(
                    image, tile, xCoordinate, yCoordinate, tileWidth, tileHeight);
            }
        }
    }
}

```

As noted, the example assumes that the width and height of the image are multiples of the tile dimensions. Be careful, as this is not always the case; the last column and/or row may be smaller than preceding columns/rows. An exception will be thrown if you attempt to read or write a tile that is not completely contained by the original image plane. Most writers perform best if the tile width is equal to the image width, although specifying any valid width should work.

As before, you need to close the reader and writer.

Converting to multiple files

The recommended method of converting to multiple files is to use a single `IFormatWriter`, like so:

```

// you should have set up a reader as in the first example
ImageWriter writer = new ImageWriter();
writer.setMetadataRetrieve(MetadataTools.asRetrieve(reader.getMetadataStore()));
// replace this with your own filename definitions
// in this example, we're going to write half of the planes to one file
// and half of the planes to another file
String[] outputFiles =
    new String[] {"/path/to/file/1.tiff", "/path/to/file/2.tiff"};
writer.setId(outputFiles[0]);

int planesPerFile = reader.getImageCount() / outputFiles.length;
for (int file=0; file<outputFiles.length; file++) {
    writer.changeOutputFile(outputFiles[file]);
    for (int image=0; image<planesPerFile; image++) {
        int index = file * planesPerFile + image;
        writer.saveBytes(image, reader.openBytes(index));
    }
}

```

```
reader.close();
writer.close();
```

The advantage here is that the relationship between the files is preserved when converting to formats that support multi-file datasets internally (namely OME-TIFF). If you are only converting to graphics formats (e.g. JPEG, AVI, MOV), then you could also use a separate `IFormatWriter` for each file, like this:

```
// again, you should have set up a reader already
String[] outputFiles = new String[] {"/path/to/file/1.avi", "/path/to/file/2.avi"};
int planesPerFile = reader.getImageCount() / outputFiles.length;
for (int file=0; file<outputFiles.length; file++) {
    ImageWriter writer = new ImageWriter();
    writer.setMetadataRetrieve(MetadataTools.asRetrieve(reader.getMetadataStore()));
    writer.setId(outputFiles[file]);
    for (int image=0; image<planesPerFile; image++) {
        int index = file * planesPerFile + image;
        writer.saveBytes(image, reader.openBytes(index));
    }
    writer.close();
}
```

Known issues

List of Trac tickets²⁴

12.2.2 Further details on exporting raw pixel data to OME-TIFF files

This document explains how to export pixel data to OME-TIFF using Bio-Formats version 4.2 and later.

The first thing that must happen is we must create the object that stores OME-XML metadata. This is done as follows:

```
ServiceFactory factory = new ServiceFactory();
OMEXMLService service = factory.getInstance(OMEXMLService.class);
IMetadata omexml = service.createOMEXMLMetadata();
```

The ‘omexml’ object can now be used in our code to store OME-XML metadata, and by the file format writer to retrieve OME-XML metadata.

Now that we have somewhere to put metadata, we need to populate as much metadata as we can. The minimum amount of metadata required is:

- endianness of the pixel data
- the order in which dimensions are stored
- the bit depth of the pixel data
- the number of channels
- the number of timepoints
- the number of Z sections
- the width (in pixels) of an image
- the height (in pixels) of an image
- the number of samples per channel (3 for RGB images, 1 otherwise)

We populate that metadata as follows:

²⁴<http://trac.openmicroscopy.org.uk/ome/query?status=accepted&status=new&status=reopened&keywords=export&component=Bio-Formats&col=id&col=summary&col=status&col=type&col=priority&col=milestone&col=component&order=priority>


```

omexml.setImageID("Image:0", 0);
omexml.setPixelsID("Pixels:0", 0);

// specify that the pixel data is stored in big-endian order
// replace 'TRUE' with 'FALSE' to specify little-endian order
omexml.setPixelsBinDataBigEndian(Boolean.TRUE, 0, 0);

omexml.setPixelsDimensionOrder(DimensionOrder.XYCZT, 0);
omexml.setPixelsType(PixelType.UINT16, 0);
omexml.setPixelsSizeX(new PositiveInteger(width), 0);
omexml.setPixelsSizeY(new PositiveInteger(height), 0);
omexml.setPixelsSizeZ(new PositiveInteger(zSectionCount), 0);
omexml.setPixelsSizeC(new PositiveInteger(channelCount *
samplesPerChannel), 0);
omexml.setPixelsSizeT(new PositiveInteger(timepointCount), 0);

for (int channel=0; channel<channelCount; channel++) {
    omexml.setChannelID("Channel:0:" + channel, 0, channel);
    omexml.setChannelSamplesPerPixel(new PositiveInteger(samplesPerChannel),
0, channel);
}

```

There is much more metadata that can be stored; please see the Javadoc for `loci.formats.meta.MetadataStore` for a complete list.

Now that we have defined all of the metadata, we need to create a file writer:

```
ImageWriter writer = new ImageWriter();
```

Now we must associate the 'omexml' object with the file writer:

```
writer.setMetadataRetrieve(omexml);
```

The writer now knows to retrieve any metadata that it needs from 'omexml'.

We now tell the writer which file it should write to:

```
writer.setId("output-file.ome.tiff");
```

It is critical that the file name given to the writer ends with ".ome.tiff" or ".ome.tif", as it is the file name extension that determines which format will be written.

Now that everything is set up, we can save the image data. This is done plane by plane, and we assume that the pixel data is stored in a 2D byte array 'pixelData':

```

int sizeC = omexml.getPixelsSizeC(0).getValue();
int sizeZ = omexml.getPixelsSizeZ(0).getValue();
int sizeT = omexml.getPixelsSizeT(0).getValue();
int samplesPerChannel = omexml.getChannelSamplesPerPixel(0).getValue();
sizeC /= samplesPerChannel;

int imageCount = sizeC * sizeZ * sizeT;

for (int image=0; image<imageCount; image++) {
    writer.saveBytes(image, pixelData[image]);
}
}

```

Finally, we must tell the writer that we are finished, so that the output file can be properly closed:

```
writer.close();
```

There should now be a complete OME-TIFF file at whichever path was specified above.

12.2.3 Converting files from FV1000 OIB/OIF to OME-TIFF

This document explains how to convert a file from FV1000 OIB/OIF to OME-TIFF using Bio-Formats version 4.2 and later.

The first thing that must happen is we must create the object that stores OME-XML metadata. This is done as follows:

```
ServiceFactory factory = new ServiceFactory();
OMEXMLService service = factory.getInstance(OMEXMLService.class);
IMetadata omexml = service.createOMEXMLMetadata();
```

The ‘omexml’ object can now be used by both a file format reader and a file format writer for storing and retrieving OME-XML metadata.

Now that have somewhere to put metadata, we need to create a file reader and writer:

```
ImageReader reader = new ImageReader();
ImageWriter writer = new ImageWriter();
```

Now we must associate the ‘omexml’ object with the file reader and writer:

```
reader.setMetadataStore(omexml);
writer.setMetadataRetrieve(omexml);
```

The reader now knows to store all of the metadata that it parses into ‘omexml’, and the writer knows to retrieve any metadata that it needs from ‘omexml’.

We now tell the reader and writer which files will be read from and written to, respectively:

```
reader.setId("input-file.oib");
writer.setId("output-file.ome.tiff");
```

It is critical that the file name given to the writer ends with “.ome.tiff” or “.ome.tif”, as it is the file name extension that determines which format will be written.

Now that everything is set up, we can convert the image data. This is done plane by plane:

```
for (int series=0; series<reader.getSeriesCount(); series++) {
    reader.setSeries(series);
    writer.setSeries(series);

    byte[] plane = new byte[FormatTools.getPlaneSize(reader)];
    for (int image=0; image<reader.getImageCount(); image++) {
        reader.openBytes(image, plane);
        writer.saveBytes(image, plane);
    }
}
```

The body of the outer ‘for’ loop may also be replaced with the following:

```
reader.setSeries(series);
writer.setSeries(series);
```

```
for (int image=0; image<reader.getImageCount(); image++) {
    byte[] plane = reader.openBytes(image);
    writer.saveBytes(image, plane);
}
```

But note that this will be a little slower.

Finally, we must tell the reader and writer that we are finished, so that the input and output files can be properly closed:

```
reader.close();
writer.close();
```

There should now be a complete OME-TIFF file at whichever path was specified above.

12.2.4 Using Bio-Formats in MATLAB

This section assumes that you have installed the M-files and `loci_tools.jar`, as instructed in the *MATLAB user information page*. Note the minimum supported MATLAB version is R2007b (7.5).

Increasing JVM memory settings

The default JVM settings in MATLAB can result in `java.lang.OutOfMemoryError: Java heap space` exceptions when opening large image files using Bio-Formats. Information about the Java heap space usage in MATLAB can be retrieved using:

```
java.lang.Runtime.getRuntime().maxMemory
```

Default JVM settings can be increased by creating a `java.opts` file in the startup directory and overriding the default memory settings. We recommend using `-Xmx512m` in your `java.opts` file.

See also:

<http://www.mathworks.com/matlabcentral/answers/92813> How do I increase the heap space for the Java VM in MATLAB 6.0 (R12) and later versions?

Opening an image file

The first thing to do is initialize a file with the `bfopen`²⁵ function:

```
data = bfopen('/path/to/data/file');
```

This function returns an `n`-by-4 cell array, where `n` is the number of series in the dataset. If `s` is the series index between 1 and `n`:

- The `data{s, 1}` element is an `m`-by-2 cell array, where `m` is the number of planes in the `s`-th series. If `t` is the plane index between 1 and `m`:
 - The `data{s, 1}{t, 1}` element contains the pixel data for the `t`-th plane in the `s`-th series.
 - The `data{s, 1}{t, 2}` element contains the label for the `t`-th plane in the `s`-th series.
- The `data{s, 2}` element contains original metadata key/value pairs that apply to the `s`-th series.
- The `data{s, 3}` element contains color lookup tables for each plane in the `s`-th series.
- The `data{s, 4}` element contains a standardized OME metadata structure, which is the same regardless of the input file format, and contains common metadata values such as physical pixel sizes - see *OME metadata* below for examples.

²⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/matlab/bfopen.m>

Accessing planes

Here is an example of how to unwrap specific image planes for easy access:

```
data = b fopen('/path/to/data/file');
seriesCount = size(data, 1);
series1 = data{1, 1};
series2 = data{2, 1};
series3 = data{3, 1};
metadataList = data{1, 2};
% ...etc.
series1_planeCount = size(series1, 1);
series1_plane1 = series1{1, 1};
series1_label1 = series1{1, 2};
series1_plane2 = series1{2, 1};
series1_label2 = series1{2, 2};
series1_plane3 = series1{3, 1};
series1_label3 = series1{3, 2};
% ...etc.
```

Displaying images

If you want to display one of the images, you can do so as follows:

```
data = b fopen('/path/to/data/file');
% plot the 1st series's 1st image plane in a new figure
series1 = data{1, 1};
series1_plane1 = series1{1, 1};
series1_label1 = series1{1, 2};
series1_colorMaps = data{1, 3};
figure('Name', series1_label1);
if (isempty(series1_colorMaps{1}))
    colormap(gray);
else
    colormap(series1_colorMaps{1});
end
imagesc(series1_plane1);
```

This will display the first image of the first series with its associated color map (if present). If you would prefer not to apply the color maps associated with each image, simply comment out the calls to `colormap`.

If you have the image processing toolbox, you could instead use:

```
imshow(series1_plane1, []);
```

You can also create an animated movie (assumes 8-bit unsigned data):

```
v = linspace(0, 1, 256)';
cmap = [v v v];
for p = 1 : size(series1, 1)
    M(p) = im2frame(uint8(series1{p, 1}), cmap);
end
movie(M);
```

Retrieving metadata

There are two kinds of metadata:

- **Original metadata** is a set of key/value pairs specific to the input format of the data. It is stored in the `data{s, 2}` element of the data structure returned by `bfopen`.
- **OME metadata** is a standardized metadata structure, which is the same regardless of input file format. It is stored in the `data{s, 4}` element of the data structure returned by `bfopen`, and contains common metadata values such as physical pixel sizes, instrument settings, and much more. See the [OME Model and Formats](#)²⁶ documentation for full details.

Original metadata To retrieve the metadata value for specific keys:

```
data = bfopen('/path/to/data/file');
% Query some metadata fields (keys are format-dependent)
metadata = data{1, 2};
subject = metadata.get('Subject');
title = metadata.get('Title');
```

To print out all of the metadata key/value pairs for the first series:

```
data = bfopen('/path/to/data/file');
metadata = data{1, 2};
metadataKeys = metadata.keySet().iterator();
for i=1:metadata.size()
    key = metadataKeys.nextElement();
    value = metadata.get(key);
    fprintf('%s = %s\n', key, value)
end
```

OME metadata Conversion of metadata to the OME standard is one of Bio-Formats' primary features. The OME metadata is always stored the same way, regardless of input file format.

To access physical voxel and stack sizes of the data:

```
data = bfopen('/path/to/data/file');
omeMeta = data{1, 4};
stackSizeX = omeMeta.getPixelsSizeX(0).getValue(); % image width, pixels
stackSizeY = omeMeta.getPixelsSizeY(0).getValue(); % image height, pixels
stackSizeZ = omeMeta.getPixelsSizeZ(0).getValue(); % number of Z slices
voxelSizeX = omeMeta.getPixelsPhysicalSizeX(0).getValue(); % in μm
voxelSizeY = omeMeta.getPixelsPhysicalSizeY(0).getValue(); % in μm
voxelSizeZ = omeMeta.getPixelsPhysicalSizeZ(0).getValue(); % in μm
```

For more information about the methods to retrieve the metadata, see the [MetadataRetrieve](#)²⁷ Javadoc page.

To convert the OME metadata into a string, use the `dumpXML()` method:

```
omeXML = char(omeMeta.dumpXML());
```

Reading from an image file

The main inconvenience of the `bfopen.m`²⁸ function is that it loads all the content of an image regardless of its size.

To access the file reader without loading all the data, use the low-level `bfGetReader.m`²⁹ function:

²⁶<http://www.openmicroscopy.org/site/support/ome-model/>

²⁷<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/meta/MetadataRetrieve.html>

²⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/matlab/bfopen.m>

²⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/matlab/bfGetReader.m>

```
reader = bfGetReader('path/to/data/file');
```

You can then access the OME metadata using the `getMetadataStore()` method:

```
omeMeta = reader.getMetadataStore();
```

Individual planes can be queried using the `bfGetPlane.m`³⁰ function:

```
series1_plane1 = bfGetPlane(reader, 1);
```

Saving files

The basic code for saving a 5D array into an OME-TIFF file is located in the `bfsave.m`³¹ function.

For instance, the following code will save a single image of 64 pixels by 64 pixels with 8 unsigned bits per pixels:

```
plane = zeros(64, 64, 'uint8');
bfsave(plane, 'my-file.ome.tiff');
```

And the following code snippet will produce an image of 64 pixels by 64 pixels with 2 channels and 2 timepoints:

```
plane = zeros(64, 64, 1, 2, 2, 'uint8');
bfsave(plane, 'my-file.ome.tiff');
```

For more information about the methods to store the metadata, see the `MetadataStore`³² Javadoc page.

12.2.5 Source code

If you are interested in the latest Bio-Formats source code from our `Git`³³ repository, you can access it using the repository path:

```
git@github.com:openmicroscopy/bioformats.git
```

You can also browse the [Bio-Formats source on GitHub](#)³⁴

To build the code, you can use our Ant build script—try “`ant -p`” for a list of targets. In general, “`ant jars`” or “`ant tools`” is the correct command.

Lastly, you can browse the [Bio-Formats Javadocs online](#)³⁵, or generate them yourself using the “`docs`” Ant target.

³⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/matlab/bfGetPlane.m>

³¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/matlab/bfsave.m>

³²<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/meta/MetadataStore.html>

³³<http://git-scm.com/>

³⁴<https://github.com/openmicroscopy/bioformats>

³⁵<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/>

INTERFACING FROM NON-JAVA CODE

13.1 Interfacing with Bio-Formats from non-Java code

Bio-Formats is written in Java, and is easiest to use with other Java code. However, it is possible to call Bio-Formats from a program written in another language. But how to do so depends on your program's needs.

Technologically, there are two broad categories of solutions: **in-process** approaches, and **inter-process** communication.

For details, see LOCI's article [Interfacing from non-Java code](#)¹.

Recommended **in-process solution**: *Bio-Formats C++ bindings*

Recommended **inter-process solution**: *Subimager*

13.2 Bio-Formats C++ bindings

To make Bio-Formats accessible to software written in C++, we have created a Bio-Formats C++ interface (BF-CPP for short). It uses LOCI's `jar2lib`² program to generate a C++ proxy class for each equivalent Bio-Formats Java class. The resulting proxies are then compiled into a library, which represents the actual interface from C++ to Bio-Formats. Using this library in your projects gives you access to the image support of Bio-Formats.

BF-CPP comes with some standalone examples which you can use as a starting point in your own project:

- `showinf`³
- `minimum_writer`⁴

Other projects using BF-CPP include:

- *WiscScan*⁵ which uses BF-CPP to write *OME-TIFF*⁶ files.
- *XuvTools* which uses an adapted version of BF-CPP called *BlitzBioFormats*⁷.

See the *build instructions* (*Windows, Mac OS X, Linux*) for details on compiling BF-CPP from source. Once this is done, simply include it in your project as you would any other external library.

13.3 Build instructions for C++ bindings

This package provides language bindings for calling into the Bio-Formats Java library from C++ in a cross-platform manner. As of this writing the bindings are functional with GCC on Linux and Mac OS X systems, as well as with Visual C++ 2005 and Visual C++ 2008 on Windows.

¹<http://loci.wisc.edu/software/interfacing-non-java-code>

²<http://loci.wisc.edu/software/jar2lib>

³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/cppwrap/showinf.cpp>

⁴https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/cppwrap/minimum_writer.cpp

⁵<http://loci.wisc.edu/software/wiscscan>

⁶<http://www.openmicroscopy.org/site/support/ome-model/ome-tiff>

⁷<http://www.xuvtools.org/devel:libblitzbioformats>

13.3.1 Compile-time dependencies

To build the Bio-Formats C++ bindings from source, the following modules are required:

- **Apache Maven**⁸ Maven is a software project management and comprehension tool. Along with Ant, it is one of the supported build systems for the Bio-Formats Java library, and is used to generate the Bio-Formats C++ bindings.
- **CMake**⁹ CMake is a cross-platform, open source build system generator, commonly used to build C++ projects in a platform-independent manner. CMake supports GNU make as well as Microsoft Visual Studio, allowing the Bio-Formats C++ bindings to be compiled on Windows, Mac OS X, Linux and potentially other platforms.
- **Boost Thread**¹⁰ Boost is a project providing open source portable C++ source libraries. It has become a suite of de facto standard libraries for C++. The Bio-Formats C++ bindings require the Boost Thread module in order to handle C++ threads in a platform independent way.
- **Java Development Kit**¹¹ At runtime, only the Java Runtime Environment (JRE) is necessary to execute the Bio-Formats code. However, the full J2SE development kit is required at compile time on some platforms (Windows in particular), since it comes bundled with the JVM shared library (jvm.lib) necessary to link with Java.

For information on installing these dependencies, refer to the page for your specific platform: [Windows](#), [Mac OS X](#), [Linux](#).

13.3.2 How to build

The process of building the Bio-Formats C++ bindings is divided into two steps:

1. Generate a C++ project consisting of “proxies” which wrap the Java code. This step utilizes the Maven project management tool, specifically a Maven plugin called cppwrap.
2. Compile this generated C++ project. This step utilizes the cross-platform CMake build system.

For details on executing these build steps, refer to the page for your specific platform: [Windows](#), [Mac OS X](#), [Linux](#).

13.3.3 Build results

If all goes well, the build system will:

1. Generate the Bio-Formats C++ proxy classes;
2. Build the Jace C++ library;
3. Build the Java Tools C++ library;
4. Build the Bio-Formats C++ shared library;
5. Build the showinf and minimum_writer command line tools, for testing the functionality.

Please be patient, as the build may require several minutes to complete.

Afterwards, the dist/scifio subdirectory will contain the following files:

1. **libjace.so / libjace.jnilib / jace.dll** : Jace shared library
2. **libscifio.so / libscifio.dylib / scifio.dll** : SCIFIO C++ shared library
3. **jace-runtime.jar** : Jace Java classes needed at runtime
4. **loci_tools.jar** : Bio-Formats Java library needed at runtime
5. **libjtools.so / libjtools.jnilib / jtools.dll** : Java Tools shared library
6. **showinf / showinf.exe** : Example command line application
7. **minimum_writer / minimum_writer.exe** : Example command line application

Items 1-4 are necessary and required to deploy Bio-Formats with your C++ application. Item 5 (jtools) is a useful helper library for managing the Java virtual machine from C++, but is not strictly necessary to use Bio-Formats. All other files, including the example programs and various build files generated by CMake, are not needed.

If you prefer, instead of using the loci_tools.jar bundle, you can provide individual JAR files as appropriate for your application. For details, see [using Bio-Formats as a Java library](#).

Please direct any questions to the OME team on the [forums](#)¹² or [mailing lists](#)¹³.

13.4 Building C++ bindings in Windows

13.4.1 Compile-time dependencies – Windows

Windows users will need to visit the appropriate web sites and download and install the relevant binaries for all the dependencies. To configure the tools, you will need to edit or create several environment variables on your system. Access them by clicking the “Environment Variables” button from Control Panel, System, Advanced tab. Use semicolons to separate multiple directories in the PATH variable.

13.4.2 Compile-time dependencies – Windows – Maven

Download [Maven](#)¹⁴.

Unpack the Maven archive into your Program Files, then add the folder’s bin subdirectory to your PATH environment variable; e.g.:

```
C:\Program Files\apache-maven-3.0.4\bin
```

Once set, new Command Prompts will recognize “mvn” as a valid command.

13.4.3 Compile-time dependencies – Windows – CMake

Download and run the [CMake installer](#)¹⁵.

During installation, select the “Add CMake to the system PATH for all users” option to ensure that Bio-Formats build system can find your CMake executable.

Once installed, new Command Prompts will recognize “cmake” and “cmake-gui” as valid commands.

13.4.4 Compile-time dependencies – Windows – Boost

The easiest way to install the Boost Thread library on Windows is to use the free installer from [BoostPro](#)¹⁶.

When running the installer:

- Under “Compilers,” check the version of Visual C++ matching your system.
- Under “Variants,” check all eight boxes.
- When choosing components, check “Boost DateTime” and “Boost Thread.”

13.4.5 Compile-time dependencies – Windows – Java Development Kit

Download and install the [JDK](#)¹⁷.

After the installation is complete, create a new environment variable called JAVA_HOME pointing to your Java installation; e.g.:

```
C:\Program Files\Java\jdk1.6.0_25
```

Setting JAVA_HOME is the easiest way to ensure that Maven can locate Java.

You will also need to append your JDK’s client or server VM folder to the PATH; e.g.:

```
%JAVA_HOME%\jre\bin\client
```

¹²<http://www.openmicroscopy.org/community/>

¹³<http://lists.openmicroscopy.org.uk/mailman/listinfo/>

¹⁴<http://maven.apache.org/>

¹⁵<http://cmake.org/>

¹⁶<http://www.boostpro.com/download/>

¹⁷<http://www.oracle.com/technetwork/java/javase/downloads/>

This step ensures that a directory containing `jvm.dll` is present in the `PATH`. If you do not perform this step, you will receive a runtime error when attempting to initialize a JVM from native code.

Optionally, you can add the `bin` subdirectory to the `PATH`; e.g.:

```
%JAVA_HOME%\bin
```

Once set, new Command Prompts will recognize (e.g.) “`javac`” as a valid command.

13.4.6 Compile-time dependencies – Windows – Visual C++

In addition to the other prerequisites, you will also need a working copy of Visual C++. We have tested compilation with Visual C++ 2005 Professional and Visual C++ 2008 Express; other versions may or may not work.

You can download [Visual C++ Express for free](#)¹⁸.

You must launch the environment at least once before you will be able to compile the Bio-Formats C++ bindings.

13.4.7 How to build - Windows

Run Command Prompt and change to your Bio-Formats working copy. Then run:

```
# generate the Bio-Formats C++ bindings
cd components\scifio
mvn -DskipTests package dependency:copy-dependencies cppwrap:wrap

# build the Bio-Formats C++ bindings
cd target\cppwrap
mkdir build
cd build
cmake-gui ..
```

The CMake GUI will open. Click the Configure button, and a dialog will appear. Select your installed version of Visual Studio, and click Finish.

When configuring, you can use the `J2L_WIN_BUILD_DEBUG` flag to indicate if this will be a Debug or Release build. If the flag is checked it will build as Debug, unchecked will build as Release.

Once configuration is complete, click Configure again, repeating as necessary until the Generate button becomes available. Then click Generate. Once generation is complete, close the CMake window.

Back at the Command Prompt, type:

```
start jace.sln
```

The solution will then open in Visual Studio. Select Release or Debug as appropriate from the drop-down menu. Press F7 to compile (or select Build Solution from the Build menu).

13.5 Building C++ bindings in Mac OS X

13.5.1 Compile-time dependencies – Mac OS X

To install dependencies on Mac OS X, we advise using [Homebrew](#)¹⁹:

```
brew install maven cmake boost
```

Unless otherwise configured, this will install binaries into `/usr/local/`.

¹⁸<http://www.microsoft.com/express/>

¹⁹<https://github.com/mxcl/homebrew/>

13.5.2 How to build – Mac OS X

The following commands will generate and build the Bio-Formats C++ bindings:

```
# generate the C++ bindings
cd components/scifio
mvn -DskipTests package dependency:copy-dependencies cppwrap:wrap

# compile the C++ bindings
cd target/cppwrap
mkdir build
cd build
cmake ..
make
```

13.6 Building C++ bindings in Linux

13.6.1 Compile-time dependencies – Linux

The following directions are specific to Ubuntu Linux. Other Linux distributions may have similar packages available; check your package manager.

To install dependencies on Ubuntu Linux, execute:

```
# install code generation prerequisites
sudo aptitude install maven2

# install build prerequisites
sudo aptitude install build-essential cmake libboost-thread-dev

# install Java Development Kit
sudo aptitude install sun-java6-jdk
sudo update-alternatives --config java
```

Then select Sun's Java implementation as the system default.

It may be possible to use a different Java compiler (i.e., omit the sun-java6-jdk package and update-alternatives step), but we have only tested the compilation process with Sun's Java compiler.

13.6.2 How to build – Linux

The following commands will generate and build the Bio-Formats C++ bindings:

```
# generate the Bio-Formats C++ bindings
cd components/scifio
mvn -DskipTests package dependency:copy-dependencies cppwrap:wrap

# build the Bio-Formats C++ bindings
cd target/cppwrap
mkdir build
cd build
cmake ..
make
```

SCIFIO provides the core architecture of the Bio-Formats library and also includes reader and writer implementations for open file formats. The more permissive BSD license enables non-GPL third party software to read and write OME-TIFF using SCIFIO alone.

14.1 Scientific Imaging Formats Input and Output

SCIFIO is a refactoring of *Bio-Formats*. Classic Bio-Formats uses [OME-XML](http://www.openmicroscopy.org/site/support/ome-model/ome-xml)¹ to model the metadata for a given image, standardizing all supported formats to this schema. This tight integration, along with the naming itself of Bio-Formats, discourages potential users from outside the life sciences (if their imaging requirements include metadata outside the OME-XML specification). Furthermore, the steps of processing image formats are obfuscated by their consolidation into a single **Reader** class; this increases the entry barrier for 3rd party developers to add support for additional formats. Finally, the GPL licensing of Bio-Formats precludes its inclusion in non-GPL software packages such as ImageJ, ITK, VCell and VisAD.

SCIFIO aims to resolve these issues by reversing the OME-XML dependency and teasing apart the stages of image format conversion and processing. SCIFIO will define the core components of flexible image format support. OME-XML will become one type of metadata, which Bio-Formats will still use to standardize the metadata of a wide variety of image formats. Thus Bio-Formats will become an extension to SCIFIO, but the underlying structure will allow any number of such extensions to coexist. Dynamic discovery mechanisms will allow these modules to be used as needed, as long as the underlying program incorporates the SCIFIO core. Further, the SCIFIO core will include support only for the open source formats currently supported by Bio-Formats, allowing distribution under the BSD license (though individual modules can fall under any licensing framework, and Bio-Formats will continue to have a dual GPL + commercial license).

For further information, see the [SCIFIO home page](http://scif.io/)².

¹<http://www.openmicroscopy.org/site/support/ome-model/ome-xml>

²<http://scif.io/>

WRITING NEW BIO-FORMATS FILE FORMAT READERS

15.1 Bio-Formats file format reader guide

This document is a brief guide to writing new Bio-Formats file format readers.

All format readers should extend either `loci.formats.FormatReader`¹ or a reader in `loci.formats.in`².

15.1.1 Methods to override

- `boolean isSingleFile(String id)`³ Whether or not the named file is expected to be the only file in the dataset. This only needs to be overridden for formats whose datasets can contain more than one file.
- `boolean isThisType(RandomAccessInputStream)`⁴ Check the first few bytes of a file to determine if the file can be read by this reader. You can assume that index 0 in the stream corresponds to the index 0 in the file. Return true if the file can be read; false if not (or if there is no way of checking).
- `int fileGroupOption(String id)`⁵ Returns an indication of whether or not the files in a multi-file dataset can be handled individually. The return value should be one of the following:
 - `FormatTools.MUST_GROUP`: the files cannot be handled separately
 - `FormatTools.CAN_GROUP`: the files may be handled separately or as a single unit
 - `FormatTools.CANNOT_GROUP`: the files must be handled separately

This method only needs to be overridden for formats whose datasets can contain more than one file.

- `String[] getSeriesUsedFiles(boolean noPixels)`⁶ You only need to override this if your format uses multiple files in a single dataset. This method should return a list of all files associated with the given file name and the current series (i.e. every file needed to display the current series). If the `noPixels` flag is set, then none of the files returned should contain pixel data. For an example of how this works, see `loci.formats.in.PerkinElmerReader`⁷. It is recommended that the first line of this method be `FormatTools.assertId(currentId, true, 1)` - this ensures that the file name is non-null.
- `byte[] openBytes(int, byte[], int, int, int, int)`⁸ Returns a byte array containing the pixel data for a subimage specified image from the given file. The dimensions of the subimage (upper left X coordinate, upper left Y coordinate, width, and height) are specified in the final four int parameters. This should throw a `FormatException` if the image number is invalid (less than 0 or \geq the number of images). The ordering of the array returned by `openBytes` should correspond to the values returned by `isLittleEndian()` and `isInterleaved()`. Also, the length of the byte array should be `[image width * image height * bytes per pixel]`. Extra bytes will generally be truncated. It is recommended that the first line of this method be `FormatTools.checkPlaneParameters(this, no, buf.length, x, y, w, h)` - this ensures that all of the parameters are valid.

¹ <https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/FormatReader.java>

² <https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/>

³ [http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isSingleFile\(java.lang.String\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isSingleFile(java.lang.String))

⁴ [http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isThisType\(loci.common.RandomAccessInputStream\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#isThisType(loci.common.RandomAccessInputStream))

⁵ [http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#fileGroupOption\(java.lang.String\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#fileGroupOption(java.lang.String))

⁶ [http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSeriesUsedFiles\(boolean\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#getSeriesUsedFiles(boolean))

⁷ <https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PerkinElmerReader.java>

⁸ [http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#openBytes\(int, byte\[\], int, int, int, int\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#openBytes(int, byte[], int, int, int, int))

- `protected void initFile(String)`⁹ The majority of the file parsing logic should be placed in this method. The idea is to call this method once (and only once!) when the file is first opened. Generally, you will want to start by calling `super.initFile(String)`. You will also need to set up the stream for reading the file, as well as initializing any dimension information and metadata. Most of this logic is up to you; however, you should populate the ‘core’ variable (see `loci.formats.CoreMetadata`¹⁰).

Note that each variable is initialized to 0 or null when `super.initFile(String)` is called. Also, `super.initFile(String)` constructs a `Hashtable` called “metadata” where you should store any relevant metadata.

- `public void close(boolean fileOnly)`¹¹ Cleans up any resources used by the reader. Global variables should be reset to their initial state, and any open files or delegate readers should be closed.

Note that if the new format is a variant of a format currently supported by Bio-Formats, it is more efficient to make the new reader a subclass of the existing reader (rather than subclassing `FormatReader`¹²). In this case, it is usually sufficient to override `initFile(String)` and `isThisType(byte[])`.

Every reader also has an instance of `loci.formats.CoreMetadata`¹³. All readers should populate the fields in `CoreMetadata`, which are essential to reading image planes.

If you read from a file using something other than `RandomAccessInputStream`¹⁴ or `Location`¹⁵, you *must* use the file name returned by `Location.getMappedId(String)`, not the file name passed to the reader. Thus, a stub for `initFile(String)` might look like this:

```
protected void initFile(String id) throws FormatException, IOException {
    super.initFile(id);

    RandomAccessInputStream in = new RandomAccessInputStream(id);
    // alternatively,
    //FileInputStream in = new FileInputStream(Location.getMappedId(id));

    // read basic file structure and metadata from stream
}
```

For more details, see the [Bio-Formats Javadocs](#)¹⁶ for `Location.mapId(String, String)` and `Location.getMappedId(String)`.

15.1.2 Variables to populate

There are a number of global variables defined in `loci.formats.FormatReader`¹⁷ that should be populated in the constructor of any implemented reader.

These variables are:

- `boolean suffixNecessary` Indicates whether or not a file name suffix is required; true by default
- `boolean suffixSufficient` Indicates whether or not a specific file name suffix guarantees that this reader can open a particular file; true by default
- `boolean hasCompanionFiles` Indicates whether or not there is at least one file in a dataset of this format that contains only metadata (no images); false by default
- `String datasetDescription` A brief description of the layout of files in datasets of this format; only necessary for multi-file datasets
- `String[] domains` An array of imaging domains for which this format is used. Domains are defined in `loci.formats.FormatTools`¹⁸.

⁹[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/FormatReader.html#initFile\(java.lang.String\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/FormatReader.html#initFile(java.lang.String))

¹⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/CoreMetadata.java>

¹¹[http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#close\(boolean\)](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/loci/formats/IFormatReader.html#close(boolean))

¹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/FormatReader.java>

¹³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/CoreMetadata.java>

¹⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-devel/src/ome/scifio/io/RandomAccessInputStream.java>

¹⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-devel/src/ome/scifio/io/Location.java>

¹⁶<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/>

¹⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/FormatReader.java>

¹⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/FormatTools.java>

15.1.3 Other useful things

- [ome.scifio.io.RandomAccessInputStream](https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-devel/src/ome/scifio/io/RandomAccessInputStream.java)¹⁹ is a hybrid `RandomAccessFile/InputStream` class that is generally more efficient than either `RandomAccessFile` or `InputStream`, and implements the `DataInput` interface. It is recommended that you use this for reading files.
- [ome.scifio.io.Location](https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-devel/src/ome/scifio/io/Location.java)²⁰ provides an API similar to `java.io.File`, and supports File-like operations on URLs. It is highly recommended that you use this instead of `File`. See the [Javadocs](http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/)²¹ for additional information.
- [ome.scifio.common.DataTools](https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-devel/src/ome/scifio/common/DataTools.java)²² provides a number of methods for converting bytes to shorts, ints, longs, etc. It also supports reading most primitive types directly from a `RandomAccessInputStream` (or other `DataInput` implementation).
- [loci.formats.ImageTools](https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/services/)²³ provides several methods for manipulating primitive type arrays that represent images. Consult the source or [Javadocs](https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/services/) for more information.
- If your reader relies on third-party code which may not be available to all users, it is strongly suggested that you make a corresponding service class that interfaces with the third-party code. Please see [Bio-Formats service and dependency infrastructure](#) for a description of the service infrastructure, as well as the `loci.formats.services` package²⁴.
- Several common image compression types are supported through subclasses of `loci.formats.codec.BaseCodec`²⁵. These include JPEG, LZW, LZO, Base64, ZIP and RLE (PackBits).
- If you wish to convert a file's metadata to OME-XML (strongly encouraged), please see [Bio-Formats metadata processing](#) for further information.
- Utility methods for reading and writing individual bits from a byte array can be found in `loci.formats.codec.BitBuffer`²⁶ and `loci.formats.codec.BitWriter`²⁷.
- Once you have written your file format reader, add a line to the `readers.txt`²⁸ file with the fully qualified name of the reader, followed by a '#' and the file extensions associated with the file format. Note that `ImageReader`²⁹, the master file format reader, tries to identify which format reader to use according to the order given in `readers.txt`³⁰, so be sure to place your reader in an appropriate position within the list.
- The easiest way to test your new reader is by calling "java loci.formats.tools.ImageInfo <file name>". If all goes well, you should see all of the metadata and dimension information, along with a window showing the images in the file. `ImageReader`³¹ can take additional parameters; a brief listing is provided below for reference, but it is recommended that you take a look at the contents of `loci.formats.tools.ImageInfo`³² to see exactly what each one does.

¹⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-devel/src/ome/scifio/io/RandomAccessInputStream.java>

²⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-devel/src/ome/scifio/io/Location.java>

²¹<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/>

²²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-devel/src/ome/scifio/common/DataTools.java>

²³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/ImageTools.java>

²⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/services/>

²⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/codec/BaseCodec.java>

²⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/codec/BitBuffer.java>

²⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/codec/BitWriter.java>

²⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/readers.txt>

²⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/ImageReader.java>

³⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/readers.txt>

³¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/ImageReader.java>

³²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio-tools/src/loci/formats/tools/ImageInfo.java>

Argument	Action
-version	print the library version and exit
file	the image file to read
-nopix	read metadata only, not pixels
-nocore	do not output core metadata
-nometa	do not parse format-specific metadata table
-nofilter	do not filter metadata fields
-thumbs	read thumbnails instead of normal pixels
-minmax	compute min/max statistics
-merge	combine separate channels into RGB image
-nogroup	force multi-file datasets to be read as individual files
-stitch	stitch files with similar names
-separate	split RGB image into separate channels
-expand	expand indexed color to RGB
-omexml	populate OME-XML metadata
-normalize	normalize floating point images*
-fast	paint RGB images as quickly as possible*
-debug	turn on debugging output
-range	specify range of planes to read (inclusive)
-series	specify which image series to read
-swap	override the default input dimension order
-shuffle	override the default output dimension order
-map	specify file on disk to which name should be mapped
-preload	pre-read entire file into a buffer; significantly reduces the time required to read the images, but requires more memory
-crop	crop images before displaying; argument is 'x,y,w,h'
-autoscale	used in combination with '-fast' to automatically adjust brightness and contrast
-novalid	do not perform validation of OME-XML
-omexml-only	only output the generated OME-XML
-format	read file with a particular reader (e.g., ZeissZVI)

* = may result in loss of precision

- If you wish to test using TestNG, [loci.tests.testng.FormatReaderTest](https://github.com/openmicroscopy/bioformats/blob/develop/components/test-suite/src/loci/tests/testng/FormatReaderTest.java)³³ provides several basic tests that work with all Bio-Formats readers. See the FormatReaderTest source code for additional information.
- For more details, please look at the source code and Javadocs³⁴. Studying existing readers is probably the best way to get a feel for the API; we would recommend first looking at [loci.formats.in.ImarisReader](https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImarisReader.java)³⁵ (this is the most straightforward one). [loci.formats.in.LIFReader](https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LIFReader.java)³⁶ and [InCellReader](https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/InCellReader.java)³⁷ are also good references that show off some of the nicer features of Bio-Formats.

If you have questions about Bio-Formats, please contact the OME team³⁸.

³³<https://github.com/openmicroscopy/bioformats/blob/develop/components/test-suite/src/loci/tests/testng/FormatReaderTest.java>

³⁴<http://hudson.openmicroscopy.org.uk/job/BIOFORMATS-trunk/javadoc/>

³⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImarisReader.java>

³⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LIFReader.java>

³⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/InCellReader.java>

³⁸<http://www.openmicroscopy.org/site/community>

CONTRIBUTING TO BIO-FORMATS

16.1 Developing Bio-Formats

If you are interested in working on the Bio-Formats source code itself, you can load it into your favorite IDE, or develop with your favorite text editor.

The Bio-Formats code is divided into several projects. Core components are located in subfolders of the [components](https://github.com/openmicroscopy/bioformats/blob/develop/components/)¹ folder, with some components further classified into [components/forks](https://github.com/openmicroscopy/bioformats/blob/develop/components/forks/)², [components/native](https://github.com/openmicroscopy/bioformats/blob/develop/components/native/)³ or [components/stubs](https://github.com/openmicroscopy/bioformats/blob/develop/components/stubs/)⁴, depending on the nature of the project.

Each project has a corresponding Maven POM file, which can be used to work with the project in your favorite IDE, or from the command line, once you have cloned the source. Instructions for several popular options follow.

16.1.1 NetBeans

NetBeans comes with Maven support built in. To import the Bio-Formats source, perform the following steps:

1. Choose File > Open Project from the menu
2. Select the top-level folder of your Bio-Formats working copy
3. Expand the Modules folder and double-click desired project(s) to work with them

Alternately, you can clone the source directly from NetBeans into a project by selecting “Team > Git > Clone Other...” from the menu.

16.1.2 Eclipse

Eclipse uses the M2E plugin to work with Maven projects. It is more flexible than Eclipse’s built-in project management because M2E transparently converts between project dependencies and JAR dependencies (stored in the Maven repository in `~/.m2/repository`) on the build path, depending which projects are currently open.

To import the Bio-Formats source into Eclipse 3.7 (Indigo), you must first install the M2E plugin:

1. From the Eclipse menu, choose Help > Install New Software...
2. In the “Work with:” dropdown, choose “–All Available Sites–”
3. In the filter box, type “m2e”
4. Check the box next to “m2e - Maven Integration for Eclipse” under “Collaboration”
5. Click Next, then Finish

You can then import the Bio-Formats source by choosing “File > Import > Existing Maven Projects” from the menu and browsing to the top-level folder of your Bio-Formats working copy.

¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/>

²<https://github.com/openmicroscopy/bioformats/blob/develop/components/forks/>

³<https://github.com/openmicroscopy/bioformats/blob/develop/components/native/>

⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/stubs/>

16.1.3 Command line

If you prefer developing code with a text editor such as vim or emacs, you can use the Ant or Maven command line tools to compile Bio-Formats. The Bio-Formats source tree provides parallel build systems for both Ant and Maven, so you can use either one to build the code.

For a list of Ant targets, run:

```
ant -p
```

When using Maven, Bio-Formats is configured to run the “install” target by default, so all JARs will be copied into your local Maven repository in `~/.m2/repository`. Simply run:

```
mvn
```

With either Ant or Maven, you can use similar commands in any subproject folder to build just that component.

16.2 Testing individual commits (internal developers)

At the bottom of many commit messages in <https://github.com/openmicroscopy/bioformats>, you will find a few lines similar to this:

To test, please run:

```
ant -Dtestng.directory=$DATA/metamorph test-automated
```

This shows the command(s) necessary to run automated tests against the files likely to be affected by that commit. If you want to run these tests, you will need to do the following:

Clone `bioformats.git` and checkout the appropriate branch (by following the directions on the [Git usage⁵](#) page). Run this command to build all of the JAR files:

```
$ ant clean jars
```

Switch to the test-suite component:

```
$ cd components/test-suite
```

Run the tests, where `$DATA` is the path to the full data repository:

```
$ ant -Dtestng.directory=$DATA/metamorph test-automated
```

By default, 512 MB of memory are allocated to the JVM. You can increase this by adding the ‘`-Dtestng.memory=XXXm`’ option. You should now see output similar to this:

```
Buildfile: build.xml

init-title:
  [echo] ===== loci-testing-framework =====

init-timestamp:

release-version:

init-manifest-cp:
```

⁵<http://www.openmicroscopy.org/site/support/contributing/using-git.html>

```

init:

copy-source:

compile:

test-automated:
  [testng] [Parser] Running:
  [testng]   LOCI software test suite
  [testng]
  [testng] Scanning for files...
  [testng] Building list of tests...
  [testng] Ready to test 490 files
  [testng] .....

```

and then eventually:

```

[testng] =====
[testng] LOCI software test suite
[testng] Total tests run: 19110, Failures: 0, Skips: 0
[testng] =====
[testng]

```

```

BUILD SUCCESSFUL
Total time: 16 minutes 42 seconds

```

Each of the dots represents a single passed test; a ‘-’ is a skipped test, and an ‘F’ is a failed test. This is mostly just for your amusement if you happen to be staring at the console while the tests run, as a more detailed report is logged to loci-software-test-`$(DATE).log` (where “`$(DATE)`” is the date on which the tests started in “`yyyy-MM-dd_hh-mm-ss`” format).

If Ant reports that the build was successful, then there is nothing that you need to do. Otherwise, it is helpful if you can provide the command, branch name, number of failures at the bottom of the Ant output, and the loci-software-test-*.log file.

16.3 Public test data

Most of the data-driven tests would benefit from having a comprehensive set of public sample data (see also [#4086⁶](#)).

Formats for which we already have public sample data:

A ‘*’ indicates that we could generate more public data in this format.

- ICS (*)
- Leica LEI
- IPLab
- BMP (*)
- Image-Pro SEQ
- QuickTime (*)
- Bio-Rad PIC
- Image-Pro Workspace
- Fluoview/ABD TIFF (*)
- Perkin Elmer Ultraview
- Gatan DM3
- Zeiss LSM

⁶<http://trac.openmicroscopy.org.uk/ome/ticket/4086>

- Openlab LIFF (*)
- Leica LIF (*)
- TIFF (*)
- Khoros (<http://netghost.narod.ru/gff/sample/images/viff/index.htm>)
- MNG ([Download⁷](#)) (*)

Formats for which we can definitely generate public sample data:

- PNG/APNG
- JPEG
- PGM
- FITS
- PCX
- GIF
- Openlab Raw
- OME-XML
- OME-TIFF
- AVI
- PICT
- LIM
- PSD
- Targa
- Bio-Rad Gel
- Fake
- ECAT-7 (minctoecat)
- NRRD
- JPEG-2000
- Micromanager
- Text
- DICOM
- MINC (rawtominc)
- NIfTI (dicomnifti)
- Analyze 7.5 (medcon)
- SDT
- FV1000 .oib/.oif
- Zeiss ZVI
- Leica TCS
- Aperio SVS
- Imaris (raw)

Formats for which I need to check whether or not we can generate public sample data:

- IPLab Mac (Ivision)
- Deltavision

⁷http://sourceforge.net/projects/libmng/files/libmng-testsuites/Release-20030305/MNGsuite-20030305.zip/download?use_mirror=freefr&download=

- MRC
- Gatan DM2
- Imaris (HDF)
- EPS
- Alicona AL3D
- Visitech
- InCell
- L2D
- FEI
- NAF
- MRW
- ARF
- LI-FLIM
- Oxford Instruments
- VG-SAM
- Hamamatsu HIS
- WA-TOP
- Seiko
- TopoMetrix
- UBM
- Quesant
- RHK
- Molecular Imaging
- JEOL
- Amira
- Unisoku
- Perkin Elmer Densitometer
- Nikon ND2
- SimplePCI .cxd
- Imaris (TIFF)
- Molecular Devices Gel
- Imacon .fff
- LEO
- JPK
- Nikon NEF
- Nikon TIFF
- Prairie
- Metamorph TIFF/STK/ND
- Improvision TIFF
- Photoshop TIFF
- FEI TIFF

- SimplePCI TIFF
- Burleigh
- SM-Camera
- SBIG

Formats for which we definitely cannot generate public sample data:

- TillVision
- Olympus CellR/APL
- Slidebook
- Cellomics
- CellWorX
- Olympus ScanR
- BD Pathway
- Opera Flex
- MIAS

16.4 Bio-Formats service and dependency infrastructure

16.4.1 Description

The Bio-Formats service infrastructure is an interface driven pattern for dealing with external and internal dependencies. The design goal was mainly to avoid the cumbersome usage of `ReflectedUniverse` where possible and to clearly define both service dependency and interface between components. This is generally referred to as [dependency injection](#)⁸, [dependency inversion](#)⁹ or [component based design](#)¹⁰.

It was decided, at this point, to forgo the usage of potentially more powerful but also more complicated solutions such as:

- Spring (<http://spring.io>)
- Guice (<http://code.google.com/p/google-guice/>)
- ...

The Wikipedia page for [dependency injection](#)¹¹ contains many other implementations in many languages.

An added benefit is the potential code reuse possibilities as a result of decoupling of dependency and usage in Bio-Formats readers. Implementations of the initial Bio-Formats services were completed as part of BioFormatsCleanup and tickets #463¹² and #464¹³.

16.4.2 Writing a service

- **Interface** – The basic form of a service is an interface which inherits from `loci.common.services.Service`¹⁴. Here is a very basic example using the (now removed) `OMENotesService`

```
public interface OMENotesService extends Service {

    /**
     * Creates a new OME Notes instance.
     * @param filename Path to the file to create a Notes instance for.
```

⁸http://en.wikipedia.org/wiki/Dependency_injection

⁹http://en.wikipedia.org/wiki/Dependency_inversion_principle

¹⁰http://en.wikipedia.org/wiki/Component-based_software_engineering

¹¹http://en.wikipedia.org/wiki/Dependency_injection

¹²<http://trac.openmicroscopy.org.uk/ome/ticket/463>

¹³<http://trac.openmicroscopy.org.uk/ome/ticket/464>

¹⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-legacy/src/loci/common/services/Service.java>

```

    */
    public void newNotes(String filename);
}

```

- **Implementation** – This service then has an implementation, which is usually located in the Bio-Formats component or package which imports classes from an external, dynamic or other dependency. Again looking at the `OMENotesService`:

```

public class OMENotesServiceImpl extends AbstractService
    implements OMENotesService {

    /**
     * Default constructor.
     */
    public OMENotesServiceImpl() {
        checkClassDependency(Notes.class);
    }

    /* (non-Javadoc)
     * @see loci.formats.dependency.OMENotesService#newNotes()
     */
    public void newNotes(String filename) {
        new Notes(null, filename);
    }

}

```

- **Style**

- Extension of `AbstractService` to enable uniform runtime dependency checking is recommended. Java does not check class dependencies until classes are first instantiated so if you do not do this, you may end up with `ClassNotFoundException` or the like exceptions being emitted from your service methods. This is to be **strongly** discouraged. If a service has unresolvable classes on its `CLASSPATH` instantiation should fail, not service method invocation.
- Service methods should not burden the implementer with numerous checked exceptions. Also external dependency exception instances should not be allowed to directly leak from a service interface. Please wrap these using a `ServiceException`.
- By convention both the interface and implementation are expected to be in a package named `loci.*.services`. This is not a hard requirement but should be followed where possible.

- **Registration** – A service's interface and implementation must finally be *registered* with the `loci.common.services.ServiceFactory`¹⁵ via the `services.properties`¹⁶ file. Following the `OMENotesService` again, here is an example registration:

```

...
# OME notes service (implementation in legacy ome-notes component)
loci.common.services.OMENotesService=loci.ome.notes.services.OMENotesServiceImpl
...

```

16.4.3 Using a service

```

OMENotesService service = null;
try {
    ServiceFactory factory = new ServiceFactory();
    service = factory.getInstance(OMENotesService.class);
}

```

¹⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-legacy/src/loci/common/services/ServiceFactory.java>

¹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-legacy/src/loci/common/services/Service.java>

```

catch (DependencyException de) {
    LOGGER.info("", de);
}
...

```

16.5 Code generation with xsd-fu

XSD Fu is a Python application designed to digest OME XML schema and produce an object oriented Java infrastructure to ease work with an XML DOM tree.

Requirements:

- Python¹⁷ 2.4+
- Genshi¹⁸ 0.5
- Complete checkout of the [Bio-Formats repository](#)¹⁹

Note: Genshi 0.5²⁰ was released on June 9th 2008. You can either install from source or download a compatible .egg for your system on the [Genshi download page](#)²¹.

16.5.1 Checking out the source

This will get the entire source tree. xsd-fu is in components/xsd-fu

```
git clone https://github.com/openmicroscopy/bioformats
```

16.5.2 Running the code generator

If you *do* have Genshi already installed, you can run xsd-fu script with no arguments to examine the syntax:

```

$ ./xsd-fu -o ../../
Missing subcommand!
Usage: ./xsd-fu <subcommand> ...
Executes an OME-XML Schema definition parsing and code generation subcommand.

```

Available subcommands:

```

java_classes
omexml_metadata
omero_metadata
omero_model
metadata_store
metadata_retrieve
metadata_aggregate
dummy_metadata
filter_metadata
enum_types
enum_handlers
doc_gen
tab_gen
debug

```

Report bugs to OME Devel <ome-devel@lists.openmicroscopy.org.uk>

¹⁷<http://python.org>

¹⁸<http://genshi.edgewall.org>

¹⁹<http://github.com/openmicroscopy/bioformats>

²⁰<http://genshi.edgewall.org/milestone/0.5>

²¹<http://genshi.edgewall.org/wiki/Download>

If you *do not* have Genshi installed you can use a downloaded Python .egg for your platform as follows:

```
$ export PYTHONPATH=Genshi-0.5-py2.4-linux-i686.egg
$ ./xsd-fu -o ../../
Missing subcommand!
Usage: ./xsd-fu <subcommand> ...
Executes an OME-XML Schema definition parsing and code generation subcommand.
```

Available subcommands:

```
java_classes
omexml_metadata
omero_metadata
omero_model
metadata_store
metadata_retrieve
metadata_aggregate
dummy_metadata
filter_metadata
enum_types
enum_handlers
doc_gen
tab_gen
debug
```

Report bugs to OME Devel <ome-devel@lists.openmicroscopy.org.uk>

Note: XsdFu is now used for many different types of code generation tasks (mostly targeted at the OMERO and Bio-Formats 4.2.0 releases) as outlined by the subcommand structure above.

16.5.3 Generating the OME-XML Java toolchain

The following sections outline how to generate parts of the OME-XML Java toolchain which are composed of:

- OME model objects
- Enumerations for OME model properties
- Enumeration handlers for regular expression matching of enumeration strings
- Metadata store and Metadata retrieve interfaces for all OME model properties
- Various implementations of Metadata store and/or Metadata retrieve interfaces

All of the above can be generated by two Ant commands:

```
$ cd components/ome-xml
$ ant generate-source
$ cd ../scifio
$ ant generate-source
```

These commands internally call xsd-fu as follows:

Java classes for OME model objects

```
$ ./xsd-fu java_classes -p 'ome.xml.model' -o \
  ../ome-xml/target/generated-sources/ \
  ../specification/released-schema/2013-06/ome.xsd \
  ../specification/released-schema/2013-06/BinaryFile.xsd \
  ../specification/released-schema/2013-06/ROI.xsd \
```

```

../specification/released-schema/2013-06/SA.xsd \
../specification/released-schema/2013-06/SPW.xsd

```

Enumeration classes for OME model properties

```

$ ./xsd-fu enum_types -p 'ome.xml.model.enums' -o \
  ../ome-xml/target/generated-sources/ \
  ../specification/released-schema/2013-06/ome.xsd \
  ../specification/released-schema/2013-06/BinaryFile.xsd \
  ../specification/released-schema/2013-06/ROI.xsd \
  ../specification/released-schema/2013-06/SA.xsd \
  ../specification/released-schema/2013-06/SPW.xsd

```

Enumeration handlers for OME model properties

```

$ ./xsd-fu enum_handlers -p 'ome.xml.model.enums.handlers' -o \
  ../ome-xml/target/generated-sources/ \
  ../specification/released-schema/2013-06/ome.xsd \
  ../specification/released-schema/2013-06/BinaryFile.xsd \
  ../specification/released-schema/2013-06/ROI.xsd \
  ../specification/released-schema/2013-06/SA.xsd \
  ../specification/released-schema/2013-06/SPW.xsd

```

Metadata store and Metadata retrieve interfaces

```

$ ./xsd-fu metadata -o ../scifio/target/generated-sources/ \
  ../specification/released-schema/2013-06/ome.xsd \
  ../specification/released-schema/2013-06/BinaryFile.xsd \
  ../specification/released-schema/2013-06/ROI.xsd \
  ../specification/released-schema/2013-06/SA.xsd \
  ../specification/released-schema/2013-06/SPW.xsd

```

OMEXMLMetadataImpl Metadata store and Metadata retrieve implementation

```

$ ./xsd-fu omexml_metadata -o ../scifio/target/generated-sources/ \
  ../specification/released-schema/2013-06/ome.xsd \
  ../specification/released-schema/2013-06/BinaryFile.xsd \
  ../specification/released-schema/2013-06/ROI.xsd \
  ../specification/released-schema/2013-06/SA.xsd \
  ../specification/released-schema/2013-06/SPW.xsd

```

16.5.4 Working with Enumerations and Enumeration Handlers

XsdFu code generates enumeration regular expressions using a flexible [configuration file](#)²².

Each enumeration has a key-value listing of regular expression to exact enumeration value matches. For example:

²²https://github.com/openmicroscopy/bioformats/blob/develop/components/xsd-fu/cfg/enum_handler.cfg

```
[Correction]
".*Pl.*Apo.*" = "PlanApo"
".*Pl.*Flu.*" = "PlanFluor"
"^\\s*Vio.*Corr.*" = "VioletCorrected"
".*S.*Flu.*" = "SuperFluor"
".*Neo.*flu.*" = "Neofluar"
".*Flu.*tar.*" = "Fluotar"
".*Fluo.*" = "Fluor"
".*Flua.*" = "Fluar"
"^\\s*Apo.*" = "Apo"
```

16.5.5 Generate OMERO model specification files

This work was completed as part of the Update XsdFu (#8086²³) story.

```
$ cd components/xsd-fu
$ ./xsd-fu omero_model -o where/to/place/output/ \
  ../specification/inprogress/ome.xsd ../specification/inprogress/SPW.xsd \
  ../specification/inprogress/SA.xsd ../specification/inprogress/ROI.xsd
```

16.5.6 Special Thanks

A special thanks goes out to [Dave Kuhlman](#)²⁴ for his fabulous work on [generateDS](#)²⁵ which XSD Fu makes heavy use of internally. See [open Trac tickets for Bio-Formats](#)²⁶ for information on work currently planned or in progress.

For more general guidance about how to contribute to OME projects, see the [Contributing developers documentation](#)²⁷.

²³<http://trac.openmicroscopy.org/ome/ticket/8086>

²⁴<http://www.rexx.com/dkuhlman/>

²⁵<http://www.rexx.com/dkuhlman/generateDS.html>

²⁶<https://trac.openmicroscopy.org/ome/report/44>

²⁷<http://www.openmicroscopy.org/site/support/contributing/index.html>

Part IV

Formats

Bio-Formats supports over 120 different file formats. The *Dataset Structure Table* explains the file extension you should choose to open/import a dataset in any of these formats, while the *Supported Formats* table lists all of the formats and gives an indication of how well they are supported and whether Bio-Formats can write, as well as read, each format. The *Summary of supported metadata fields* table shows an overview of the *OME data model* fields populated for each format.

We are always looking for examples of files to help us provide better support for different formats. If you would like to help, you can upload files using our [QA system uploader](#)²⁸. If you have any questions, or would prefer not to use QA, please email the [ome-users mailing list](#)²⁹. If your format is already supported, please refer to the ‘we would like to have’ section on the individual page for that format, to see if your dataset would be useful to us.

²⁸<http://qa.openmicroscopy.org.uk/qa/upload/>

²⁹<http://www.openmicroscopy.org/site/community/mailling-lists>

DATASET STRUCTURE TABLE

This table shows the extension of the file that you should choose if you want to open/import a dataset in a particular format.

Format name	File to choose	Structure of files
AIM	.aim	Single file
ARF	.arf	Single file
Adobe Photoshop	.psd	Single file
Adobe Photoshop TIFF	.tif, .tiff	Single file
Alicona AL3D	.al3d	Single file
Amersham Biosciences GEL	.gel	Single file
Amira	.am, .amiramesh, .grey, .hx, .labels	Single file
Analyze 7.5	.img, .hdr	One .img file and one similarly-named .hdr file
Andor SIF	.sif	Single file
Animated PNG	.png	Single file
Aperio SVS	.svs	Single file
Audio Video Interleave	.avi	Single file
BD Pathway	.exp, .tif	Multiple files (.exp, .dye, .ltp, ...) plus one or more directories containing .tif and .bmp files
Bio-Rad GEL	.lsc	Single file
Bio-Rad PIC	.pic, .xml, .raw	One or more .pic files and an optional lse.xml file
Bitplane Imaris	.ims	Single file
Bitplane Imaris 3 (TIFF)	.ims	Single file
Bitplane Imaris 5.5 (HDF)	.ims	Single file
Bruker	(no extension)	One 'fid' and one 'acqp' plus several other metadata files and a 'pdata' directory
Burleigh	.img	Single file
Canon RAW	.cr2, .crw, .jpg, .thm, .wav	Single file
CellSens VSI	.vsi, .ets	One .vsi file and an optional directory with a similar name that contains at least one subdirectory with .ets files
CellWorx	.pnl, .htd, .log	One .htd file plus one or more .pnl or .tif files and optionally one or more .log files
Cellomics C01	.c01, .dib	One or more .c01 files
Compix Simple-PCI	.cxd	Single file
DICOM	.dic, .dcm, .dicom, .jp2, .j2ki, .j2kr, .raw, .ima	One or more .dcm or .dicom files
DNG	.cr2, .crw, .jpg, .thm, .wav, .tif, .tiff	Single file
Deltavision	.dv, .r3d, .r3d_d3d, .dv.log, .r3d.log	One .dv, .r3d, or .d3d file and up to two optional .log files
ECAT7	.v	Single file
Encapsulated PostScript	.eps, .epsi, .ps	Single file

Continued on next page

Table 17.1 – continued from previous page

Format name	File to choose	Structure of files
Evotec Flex	.flex, .mea, .res	One directory containing one or more .flex files, and an optional directory containing an .mea and .res file. The .mea and .res files may also be in the same directory as the .flex file(s).
FEI TIFF	.tif, .tiff	Single file
FEI/Philips	.img	Single file
Flexible Image Transport System	.fits, .fts	Single file
Fuji LAS 3000	.img, .inf	Single file
Gatan DM2	.dm2	Single file
Gatan Digital Micrograph	.dm3	Single file
Graphics Interchange Format	.gif	Single file
Hamamatsu Aquacosmos	.naf	Single file
Hamamatsu HIS	.his	Single file
Hamamatsu NDPI	.ndpi	Single file
Hamamatsu NDPIS	.ndpis	One .ndpis file and at least one .ndpi file
Hamamatsu VMS	.vms	One .vms file plus several .jpg files
Hitachi	.txt	One .txt file plus one similarly-named .tif, .bmp, or .jpg file
IMAGIC	.hed, .img	One .hed file plus one similarly-named .img file
IMOD	.mod	Single file
INR	.inr	Single file
IPLab	.ipl	Single file
IVision	.ipm	Single file
Imacon	.fff	Single file
Image Cytometry Standard	.ics, .ids	One .ics and possibly one .ids with a similar name
Image-Pro Sequence	.seq	Single file
Image-Pro Workspace	.ipw	Single file
Improvision TIFF	.tif, .tiff	Single file
InCell 1000/2000	.xdce, .xml, .tiff, .tif, .xlog	One .xdce file with at least one .tif/.tiff or .im file
InCell 3000	.frm	Single file
JEOL	.dat, .img, .par	A single .dat file or an .img file with a similarly-named .par file
JPEG	.jpg, .jpeg, .jpe	Single file
JPEG-2000	.jp2, .j2k, .jpf	Single file
JPK Instruments	.jpk	Single file
JPX	.jpx	Single file
Khoros XV	.xv	Single file
Kodak Molecular Imaging	.bip	Single file
LEO	.sxm, .tif, .tiff	Single file
LI-FLIM	.fli	Single file
Laboratory Imaging	.lim	Single file
Leica	.lei, .tif, .tiff, .raw	One .lei file with at least one .tif/.tiff file and an optional .txt file
Leica Image File Format	.lif	Single file
Leica SCN	.scn	Single file
Leica TCS TIFF	.tif, .tiff, .xml	Single file
Li-Cor L2D	.l2d, .scn, .tif	One .l2d file with one or more directories containing .tif/.tiff files
MIAS	.tif, .tiff, .txt	One directory per plate containing one directory per well, each with one or more .tif/.tiff files
MINC MRI	.mnc	Single file
Medical Research Council	.mrc, .st, .ali, .map, .rec	Single file
Metamorph STK	.stk, .nd, .tif, .tiff	One or more .stk or .tif/.tiff files plus an optional .nd file
Metamorph TIFF	.tif, .tiff	One or more .tif/.tiff files

Continued on next page

Table 17.1 – continued from previous page

Format name	File to choose	Structure of files
Micro-Manager	.tif, .tiff, .txt, .xml	A 'metadata.txt' file plus or or more .tif files
Minolta MRW	.mrw	Single file
Molecular Imaging	.stp	Single file
Multiple Network Graphics	.mng	Single file
NIFTI	.nii, .img, .hdr	A single .nii file or one .img file and a similarly-named .hdr file
NOAA-HRD Gridded Data Format	(no extension)	Single file
NRRD	.nrrd, .nhdr	A single .nrrd file or one .nhdr file and one other file containing the pixels
Nikon Elements TIFF	.tif, .tiff	Single file
Nikon ND2	.nd2	Single file
Nikon NEF	.nef, .tif, .tiff	Single file
Nikon TIFF	.tif, .tiff	Single file
OME-TIFF	.ome.tif, .ome.tiff	One or more .ome.tif files
OME-XML	.ome	Single file
Olympus APL	.apl, .tnb, .mtb, .tif	One .apl file, one .mtb file, one .tnb file, and a directory containing one or more .tif files
Olympus FV1000	.oib, .oif, .pty, .lut	Single .oib file or one .oif file and a similarly-named directory containing .tif/.tiff files
Olympus Fluoview/ABD TIFF	.tif, .tiff	One or more .tif/.tiff files, and an optional .txt file
Olympus SIS TIFF	.tif, .tiff	Single file
Olympus ScanR	.dat, .xml, .tif	One .xml file, one 'data' directory containing .tif/.tiff files, and optionally two .dat files
Olympus Slidebook	.sld, .spl	Single file
Openlab LIFF	.liff	Single file
Openlab RAW	.raw	Single file
Oxford Instruments	.top	Single file
PCX	.pcx	Single file
PICT	.pict, .pct	Single file
POV-Ray	.df3	Single file
Perkin Elmer Densitometer	.hdr, .img	One .hdr file and a similarly-named .img file
PerkinElmer	.ano, .cfg, .csv, .htm, .rec, .tim, .zpo, .tif	One .htm file, several other metadata files (.tim, .ano, .csv, ...) and either .tif files or .2, .3, .4, etc. files
PerkinElmer Operetta	.tif, .tiff, .xml	Directory with XML file and one .tif/.tiff file per plane
Portable Gray Map	.pgm	Single file
Prairie TIFF	.tif, .tiff, .cfg, .xml	One .xml file, one .cfg file, and one or more .tif/.tiff files
Pyramid TIFF	.tif, .tiff	Single file
Quesant AFM	.afm	Single file
QuickTime	.mov	Single file
RHK Technologies	.sm2, .sm3	Single file
SBIG	(no extension)	Single file
SM Camera	(no extension)	Single file
SPCImage Data	.sdt	Single file
SPIDER	.spi	Single file
Seiko	.xqd, .xqf	Single file
SimplePCI TIFF	.tif, .tiff	Single file
Simulated data	.fake	Single file
Tagged Image File Format	.tif, .tiff, .tf2, .tf8, .btf	Single file
Text	.txt, .csv	Single file
TillVision	.vws, .pst, .inf	One .vws file and possibly one similarly-named directory
TopoMetrix	.tfr, .ftr, .zfr, .zfp, .2fl	Single file
Trestle	.tif	One .tif file plus several other similarly-named files (e.g. <i>FocalPlane</i> -, .sld, .slx, .ROI)
Truevision Targa	.tga	Single file
UBM	.pr3	Single file
Unisoku STM	.hdr, .dat	One .HDR file plus one similarly-named .DAT file

Continued on next page

Table 17.1 – continued from previous page

Format name	File to choose	Structure of files
VG SAM	.dti	Single file
Varian FDF	.fdf	Single file
Visitech XYS	.xys, .html	One .html file plus one or more .xys files
Volocity Library	.mvd2, .aisf, .aiix, .dat, .atsf	One .mvd2 file plus a 'Data' directory
Volocity Library Clipping	.acff	Single file
WA Technology TOP	.wat	Single file
Windows Bitmap	.bmp	Single file
Zeiss AxioVision TIFF	.tif, .xml	Single file
Zeiss CZI	.czi	Single file
Zeiss Laser-Scanning Microscopy	.lsm, .mdb	One or more .lsm files; if multiple .lsm files are present, an .mdb file should also be present
Zeiss Vision Image (ZVI)	.zvi	Single file
Zip	.zip	Single file

17.1 Flex Support

OMERO.importer supports importing analyzed Flex files from an Opera system.

Basic configuration is done via the `importer.ini`. Once the user has run the Importer once, this file will be in the following location:

- `C:\Documents and Settings\\omero\importer.ini`

The user will need to modify or add the `[FlexReaderServerMaps]` section of the INI file as follows:

```
...
[FlexReaderServerMaps]
CIA-1 = \\hostname1\mount;\\archivehost1\mount
CIA-2 = \\hostname2\mount;\\archivehost2\mount
```

where the *key* of the INI file line is the value of the "Host" tag in the `.mea` measurement XML file (here: `<Host name="CIA-1">`) and the value is a semicolon-separated list of *escaped* UNC path names to the Opera workstations where the Flex files reside.

Once this resolution has been encoded in the configuration file **and** you have restarted the importer, you will be able to select the `.mea` measurement XML file from the Importer user interface as the import target.

SUPPORTED FORMATS

Ratings legend and definitions

Format	Extensions	Pixels	Metadata	Openness	Presence	Utility	Export	SCIFIO
<i>3i SlideBook</i>	.sld	▲	▼	▼	▲	▼	✘	✘
<i>Andor Bio-Imaging Division (ABD) TIFF</i>	.tif	▲	▲	■	▼	■	✘	✘
<i>AIM</i>	.aim	■	▲	▼	▼	▼	✘	✘
<i>Alicona 3D</i>	.al3d	▲	▲	▲	▼	■	✘	✘
<i>Amersham Bio-sciences Gel</i>	.gel	▲	▲	■	▼	▼	✘	✘
<i>Amira Mesh</i>	.am, .ami- ramesh, .grey, .hx, .labels	▲	■	▼	▼	▼	✘	✘
<i>Analyze 7.5</i>	.img, .hdr	▲	■	▲	■	▼	✘	✘
<i>Animated PNG</i>	.png	▲	▲	▲	■	▼	✓	✓
<i>Aperio AFI</i>	.afi, .svs	▲	▲	▲	■	■	✘	✘
<i>Aperio SVS TIFF</i>	.svs	▲	▲	▲	■	■	✘	✘
<i>Applied Precision CellWorX</i>	.htd, .pnl	▲	■	■	▼	▼	✘	✘
<i>AVI (Audio Video Interleave)</i>	.avi	■	▲	▼	▲	▼	✓	✓
<i>Axon Raw Format</i>	.arf	▲	▼	▲	▼	▼	✘	✘
<i>BD Pathway</i>	.exp, .tif	▲	▲	■	▼	■	✘	✘
<i>Becker & Hickl SPCImage</i>	.sdt	▲	▲	■	▼	▼	✘	✘
<i>Bio-Rad Gel</i>	.lsc	■	▼	▼	▼	▼	✘	✘
<i>Bio-Rad PIC</i>	.pic, .raw, .xml	▲	▲	▲	▲	▲	✘	✘
<i>Bio-Rad SCN</i>	.scn	▲	▼	▼	▼	▼	✘	✘
<i>Bitplane Imaris</i>	.ims	▲	▲	■	▼	▼	✘	✘
<i>Bruker MRI</i>	.ims	■	▲	▼	■	▼	✘	✘
<i>Burleigh</i>	.img	■	▼	▼	▼	▼	✘	✘
<i>Canon DNG</i>	.cr2, .crw	■	■	▼	▼	▼	✘	✘
<i>Cellomics</i>	.c01	▲	▼	▼	▼	▼	✘	✘

Continued on next page

Table 18.1 – continued from previous page

Format	Extensions	Pixels	Metadata	Openness	Presence	Utility	Export	SCIFIO
<i>cellSens VSI</i>	.vsi	⬇️	🟡	⬇️	⬇️	⬇️	❌❌	❌❌
<i>CellVoyager</i>	.xml, .tif	⬆️	🟡	🟡	⬇️	🟡	❌❌❌	❌❌❌
<i>DeltaVision</i>	.dv, .r3d	🟢	🟡	🟡	🟡	🟡	❌❌❌	❌❌❌
<i>DICOM</i>	.dcm, .dicom	⬆️	⬆️	⬆️	🟡	⬇️	❌❌❌	⬆️
<i>ECAT7</i>	.v	🟡	🟡	⬇️	⬇️	⬇️	❌❌❌	❌❌
<i>EPS (Encapsulated PostScript)</i>	.eps, .epsi, .ps	🟡	🟡	🟡	⬆️	⬇️	⬆️	⬆️
<i>Evotec/PerkinElmer Opera Flex</i>	.flex, .mea, .res	🟢	⬆️	⬇️	⬇️	⬇️	❌	❌
<i>FEI</i>	.img	⬇️	⬇️	⬇️	⬇️	⬇️	❌❌	❌❌
<i>FEI TIFF</i>	.tif	⬆️	🟡	🟡	⬇️	⬇️	❌❌❌	❌❌❌
<i>FITS (Flexible Image Transport System)</i>	.fits	⬆️	⬇️	⬆️	🟡	⬇️	❌❌	⬆️
<i>Gatan Digital Micrograph</i>	.dm3	⬆️	🟡	⬇️	⬇️	⬇️	❌	❌
<i>Gatan Digital Micrograph 2</i>	.dm2	🟡	⬇️	⬇️	⬇️	🟡	❌	❌
<i>GIF (Graphics Interchange Format)</i>	.gif	⬆️	⬆️	⬇️	🟢	⬇️	❌	⬆️
<i>Hamamatsu Aquacosmos NAF</i>	.naf	🟡	⬇️	⬇️	⬇️	⬇️	❌	❌
<i>Hamamatsu HIS</i>	.his	🟡	⬇️	⬇️	⬇️	⬇️	❌❌	❌❌
<i>Hamamatsu ndpi</i>	.ndpi	⬇️	🟡	🟡	⬇️	⬇️	❌❌❌	❌❌❌
<i>Hamamatsu VMS</i>	.vms	🟡	🟡	⬇️	⬇️	⬇️	❌❌❌	❌❌❌
<i>Hitachi S-4800</i>	.txt, .tif, .bmp, .jpg	⬆️	⬆️	⬆️	⬇️	⬇️	❌❌	❌❌
<i>ICS (Image Cytometry Standard)</i>	.ics, .ids	🟢	⬆️	🟢	⬆️	⬆️	⬆️	⬆️
<i>Imacon</i>	.fff	⬇️	🟡	⬇️	⬇️	🟡	❌❌	❌❌
<i>ImagePro Sequence</i>	.seq	⬆️	⬆️	⬇️	⬇️	⬇️	❌❌❌	❌❌❌
<i>ImagePro Workspace</i>	.ipw	⬆️	⬆️	⬇️	⬇️	⬇️	❌❌❌	❌❌❌
<i>IMAGIC</i>	.hed, .img	⬆️	⬆️	⬆️	🟡	🟡	❌❌❌	❌❌❌
<i>IMOD</i>	.mod	🟡	🟡	🟢	⬇️	⬇️	❌❌❌	❌❌❌
<i>Improvision Openlab LIFF</i>	.liff	⬆️	🟡	⬆️	🟡	⬇️	❌❌	❌❌
<i>Improvision Openlab Raw</i>	.raw	🟢	⬆️	⬆️	⬇️	⬇️	❌	❌
<i>Improvision TIFF</i>	.tif	⬆️	🟢	⬆️	⬇️	🟡	❌❌	❌❌
<i>Inspector OBF</i>	.obf, .msr	⬆️	🟡	⬆️	⬇️	⬇️	❌❌	⬆️
<i>InCell 1000</i>	.xdce, .tif	⬆️	⬆️	🟡	⬇️	🟡	❌❌	❌❌
<i>InCell 3000</i>	.frm	🟡	⬇️	⬇️	⬇️	⬇️	❌❌	❌❌
<i>INR</i>	.inr	⬆️	🟡	⬇️	⬇️	⬇️	❌❌	❌❌

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Table 18.1 – continued from previous page

Format	Extensions	Pixels	Metadata	Openness	Presence	Utility	Export	SCIFIO
<i>Inveon</i>	.hdr	▲	▲	■	▼	▼	✘	✘
<i>IPLab</i>	.ipl	▲	▲	▲	▼	▼	✘	✘
<i>IPLab-Mac</i>	.ipm	▲	■	▲	▼	▼	✘	✘
<i>JEOL</i>	.dat, .img, .par	■	▼	▼	▼	▼	✘	✘
<i>JPEG</i>	.jpg	▲	▼	▲	▲	▼	▼	▼
<i>JPEG 2000</i>	.jp2	▲	▼	▲	■	▼	▼	▼
<i>JPK</i>	.jpk	■	▼	▼	▼	▼	✘	✘
<i>JPX</i>	.jpx	▲	▲	▲	■	▼	✘	✘
<i>Khoros VIFF (Visualization Image File Format) Bitmap</i>	.xv	■	▼	▼	▼	▼	✘	✘
<i>Kodak BIP</i>	.bip	▲	■	▼	▼	▼	✘	✘
<i>Lambert Instruments FLIM</i>	.fli	▲	▲	▲	▼	■	✘	✘
<i>LaVision Inspector</i>	.msr	▼	▼	▼	▼	▼	✘	✘
<i>Leica LCS LEI</i>	.lei, .tif	▲	▲	▲	▲	▲	✘	✘
<i>Leica LAS AF LIF (Leica Image File Format)</i>	.lif	▲	▲	▲	■	▲	✘	✘
<i>Leica SCN</i>	.scn	■	■	■	▼	■	✘	✘
<i>LEO</i>	.sxm	■	▼	■	▼	▼	✘	✘
<i>Li-Cor L2D</i>	.l2d, .tif, .scn	▲	▼	■	■	■	✘	✘
<i>LIM (Laboratory Imaging/Nikon)</i>	.lim	■	▼	▼	▼	▼	✘	✘
<i>MetaMorph 7.5 TIFF</i>	.tiff	▲	▲	▲	▼	■	✘	✘
<i>MetaMorph Stack (STK)</i>	.stk, .nd	▲	▲	▲	▲	■	✘	✘
<i>MIAS (Maia Scientific)</i>	.tif	▲	▼	▼	▼	▼	✘	✘
<i>Micro-Manager</i>	.tif, .txt, .xml	▲	▲	▲	▼	■	✘	▼
<i>MINC MRI</i>	.mnc	▲	■	■	■	▼	✘	✘
<i>Minolta MRW</i>	.mrw	▲	■	▼	▼	▼	✘	✘
<i>MNG (Multiple-image Network Graphics)</i>	.mng	■	■	▲	▼	▼	✘	▼
<i>Molecular Imaging</i>	.stp	■	▼	▼	▼	▼	✘	✘
<i>MRC (Medical Research Council)</i>	.mrc	▲	▲	▲	■	■	✘	✘
<i>NEF (Nikon Electronic Format)</i>	.nef, .tif	▲	▲	▼	▼	▼	✘	✘
<i>NIfTI</i>	.img, .hdr	▲	■	▲	■	▼	✘	✘
<i>Nikon Elements TIFF</i>	.tiff	■	■	▼	▼	▼	✘	✘
<i>Nikon EZ-C1 TIFF</i>	.tiff	▲	▲	■	▼	▼	✘	✘

Continued on next page

Table 18.1 – continued from previous page

Format	Extensions	Pixels	Metadata	Openness	Presence	Utility	Export	SCIFIO
<i>Nikon NIS-Elements ND2</i>	.nd2	▲	▲	▼	▲	▲	✘	✘
<i>NRRD (Nearly Raw Raster Data)</i>	.nrrd, .nhdr, .raw, .txt	▲	▲	▲	▼	▲	✘	✓
<i>Olympus CellR/APL</i>	.apl, .mtb, .tnb, .tif, .obsep	▲	▼	▼	▼	▼	✘	✘
<i>Olympus FluoView FV1000</i>	.oib, .oif	▲	▲	■	■	▲	✘	✘
<i>Olympus FluoView TIFF</i>	.tif	▲	▲	▲	■	■	✘	✘
<i>Olympus ScanR</i>	.xml, .dat, .tif	▲	■	■	▼	▼	✘	✘
<i>Olympus SIS TIFF</i>	.tif	■	■	■	▼	■	✘	✘
<i>OME-TIFF</i>	.ome.tiff	▲	▲	▲	▼	▲	✓	✓
<i>OME-XML</i>	.ome	▲	▲	▲	▼	▲	✓	✓
<i>Oxford Instruments PCORAW</i>	.top	■	▼	▼	▼	▼	✘	✘
<i>PCX (PC Paintbrush)</i>	.pcx	▲	▼	▼	▼	▼	✘	✓
<i>Perkin Elmer Densitometer</i>	.pds	■	■	■	▼	▼	✘	✘
<i>PerkinElmer Operetta</i>	.tif, .xml	▲	■	■	▼	■	✘	✘
<i>PerkinElmer Ultra-View</i>	.tif, .2, .3, .4	▲	■	▼	▼	▼	✘	✘
<i>PGM (Portable Gray Map)</i>	.pgm	▲	■	▲	■	▼	✘	✓
<i>Adobe Photoshop PSD</i>	.psd	■	■	■	■	▼	✘	✘
<i>Photoshop TIFF</i>	.tif, .tiff	■	■	■	■	■	✘	✘
<i>PICT (Macintosh Picture)</i>	.pict	▲	▼	▼	▲	▼	✘	✓
<i>PNG (Portable Network Graphics)</i>	.png	▲	■	▲	▲	▼	✓	✓
<i>Prairie Technologies TIFF</i>	.tif, .xml, .cfg	▲	■	■	▼	■	✘	✘
<i>Quesant QuickTime Movie</i>	.afm	■	▼	▼	▼	▼	✘	✘
<i>QuickTime Movie</i>	.mov	■	▲	▼	▲	▼	✓	✓
<i>RHK</i>	.sm2, .sm3	■	▼	▼	▼	▼	✘	✘
<i>SBIG</i>	.sm2, .sm3	▲	■	▲	▼	▼	✘	✘
<i>Seiko</i>	.xqd, .xqf	■	▼	▼	▼	▼	✘	✘
<i>SimplePCI & HCIImage</i>	.cxd	▲	■	▲	▼	▼	✘	✘

Continued on next page

Table 18.1 – continued from previous page

Format	Extensions	Pixels	Metadata	Openness	Presence	Utility	Export	SCIFIO
<i>SimplePCI & HCI</i> <i>Image TIFF</i>	.tiff	▲	■	▲	▼	■	✘	✘
<i>SM Camera</i>	.tiff	■	▼	▼	▼	▼	✘	✘
<i>SPIDER</i>	.spi, .stk	▲	▲	▲	■	■	✘	✘
<i>Targa</i>	.tga	▲	▲	▲	■	▼	✘	✘
<i>Text</i>	.txt	■	▼	▼	▼	▼	✘	▼
<i>TIFF (Tagged Image File Format)</i>	.tif	▲	▲	▲	▲	▼	▼	▼
<i>TillPhotonics TillVision</i>	.vws	■	▼	▼	▼	▼	✘	✘
<i>Topometrix</i>	.tfr, .ffr, .zfr, .zfp, .2fl	■	▼	▼	▼	▼	✘	✘
<i>Trestle</i>	.tif, .sld, .jpg	■	■	■	▼	▼	✘	✘
<i>UBM</i>	.pr3	■	▼	▼	▼	▼	✘	✘
<i>Unisoku</i>	.dat, .hdr	■	▼	▼	▼	▼	✘	✘
<i>Varian FDF</i>	.fdf	■	▼	▼	▼	▼	✘	✘
<i>VG SAM</i>	.dti	■	▼	▼	▼	▼	✘	✘
<i>VisiTech XYS</i>	.xys, .html	▲	■	▼	▼	■	✘	✘
<i>Volocity</i>	.mvd2	■	■	▼	▼	▼	✘	✘
<i>Volocity Library Clipping</i>	.acff	■	■	▼	▼	▼	✘	✘
<i>WA-TOP</i>	.wat	■	▼	▼	▼	▼	✘	✘
<i>Windows Bitmap</i>	.bmp	▲	▲	▼	▲	▼	✘	▼
<i>Woolz</i>	.wlz	▲	▼	▲	▼	▼	▼	✘
<i>Zeiss AxioVision TIFF</i>	.xml, .tiff	▲	▲	■	▼	▼	✘	✘
<i>Zeiss AxioVision ZVI (Zeiss Vision Image)</i>	.zvi	▲	▲	▲	■	■	✘	✘
<i>Zeiss CZI</i>	.dzi	▲	▲	▲	▼	■	✘	✘
<i>Zeiss LSM (Laser Scanning Microscope) 510/710</i>	.lsm, .mdb	▲	▲	■	▲	■	✘	✘

Bio-Formats currently supports **135** formats

Ratings legend and definitions	
▲	Outstanding
▲	Very good
■	Good
▼	Fair
▼	Poor

Pixels Our estimation of Bio-Formats’ ability to reliably extract complete and accurate pixel values from files in that format. The better this score, the more confident we are that Bio-Formats will successfully read your file without displaying an error message or displaying an erroneous image.

Metadata Our certainty in the thoroughness and correctness of Bio-Formats' metadata extraction and conversion from files of that format into standard OME-XML. The better this score, the more confident we are that all meaningful metadata will be parsed and populated as OME-XML.

Openness This is not a direct expression of Bio-Formats' performance, but rather indicates the level of cooperation the format's controlling interest has demonstrated toward the scientific community with respect to the format. The better this score, the more tools (specification documents, source code, sample files, etc.) have been made available.

Presence This is also not directly related to Bio-Formats, but instead represents our understanding of the format's popularity, and is also as a measure of compatibility between applications. The better this score, the more common the format and the more software packages include support for it.

Utility Our opinion of the format's suitability for storing metadata-rich microscopy image data. The better this score, the wider the variety of information that can be effectively stored in the format.

Export This indicates whether Bio-Formats is capable of writing the format (Bio-Formats can read every format on this list).

SCIFIO This indicates whether format is supported by the *SCIFIO* core library (see the SCIFIO section of the [licensing page](#)¹).

18.1 3i SlideBook

Extensions: .sld

Developer: [Intelligent Imaging Innovations](#)²

Owner: [Intelligent Imaging Innovations](#)³

Support

SCIFIO: 

Export: 

Officially Supported Versions: 4.1, 4.2

Supported Metadata Fields: *3i SlideBook*


We currently have:

- Numerous SlideBook datasets

We would like to have:

- A SlideBook specification document
- More SlideBook datasets (preferably acquired with the most recent SlideBook software)


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [SlidebookReader.java](#)⁴

Notes:

¹<http://www.openmicroscopy.org/site/about/licensing-attribution>

²<http://www.intelligent-imaging.com/>

³<http://www.intelligent-imaging.com/>

⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SlidebookReader.java>

We strongly encourage users to export their .sld files to OME-TIFF using the SlideBook software. Bio-Formats is not likely to support the full range of metadata that is included in .sld files, and so exporting to OME-TIFF from SlideBook is the best way to ensure that all metadata is preserved.

See also:

[Slidebook software overview](#)⁵

18.2 Andor Bio-Imaging Division (ABD) TIFF

Extensions: .tif

Developer: Andor Bioimaging Department

Owner: [Andor Technology](#)⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Andor Bio-Imaging Division (ABD) TIFF*

We currently have:

- an ABD-TIFF specification document (from 2005 November, in PDF)
- a few ABD-TIFF datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [FluoviewReader.java](#)⁷

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

With a few minor exceptions, the ABD-TIFF format is identical to the Fluoview TIFF format.

18.3 AIM

Extensions: .aim

Developer: [SCANCO Medical AG](#)⁸

Support


SCIFIO: 

⁵<https://www.slidebook.com>

⁶<http://www.andor.com/>

⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FluoviewReader.java>

⁸<http://www.scanco.ch>

Export: 

Officially Supported Versions:

Supported Metadata Fields: *AIM*

We currently have:

- one .aim file

We would like to have:


- an .aim specification document
- more .aim files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [AIMReader.java](#)⁹

Notes:

18.4 Alicona 3D

Extensions: .al3d

Owner: [Alicona Imaging](#)¹⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions: 1.0

Supported Metadata Fields: *Alicona 3D*


We currently have:

- an [AL3D specification document](#)¹¹ (v1.0, from 2003, in PDF)
- a few AL3D datasets


We would like to have:

- more AL3D datasets (Z series, T series, 16-bit)

Ratings

Pixels: 

Metadata: 


Openness: 

Presence: 

⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/AIMReader.java>

¹⁰<http://www.alicon.com/>

¹¹<http://www.alicon.com/home/fileadmin/alicon.com/downloads/AL3DFormat.pdf>

Utility: 

Additional Information

Source Code: [AliconaReader.java](#)¹²

Notes:

Known deficiencies:

- Support for 16-bit AL3D images is present, but has never been tested.
- Texture data is currently ignored.

18.5 Amersham Biosciences Gel

Extensions: .gel

Developer: Molecular Dynamics

Owner: [GE Healthcare Life Sciences](#)¹³

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Amersham Biosciences Gel*

We currently have:

- a GEL specification document (Revision 2, from 2001 Mar 15, in PDF)
- a few GEL datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [GelReader.java](#)¹⁴

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

See also:

[GEL Technical Overview](#)¹⁵

¹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/AliconaReader.java>

¹³<http://www.gelifsciences.com/>

¹⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/GelReader.java>

¹⁵<http://www.awaresystems.be/imaging/tiff/tifftags/docs/gel.html>

18.6 Amira Mesh

Extensions: .am, .amiramesh, .grey, .hx, .labels

Developer: [Visage Imaging](#)¹⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Amira Mesh*


We currently have:

- a few Amira Mesh datasets

We would like to have:


- more Amira Mesh datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [AmiraReader.java](#)¹⁷

Notes:

18.7 Analyze 7.5

Extensions: .img, .hdr

Developer: [Mayo Foundation Biomedical Imaging Resource](#)¹⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Analyze 7.5*

We currently have:

- an *Analyze 7.5* specification document¹⁹
- several *Analyze 7.5* datasets

¹⁶<http://www.amiravis.com/>

¹⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/AmiraReader.java>

¹⁸<http://www.mayo.edu/bir>

¹⁹http://analyzedirect.com/support/10.0Documents/Analyze_Resource_01.pdf

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

Source Code: [AnalyzeReader.java](#)²⁰

Notes:

18.8 Animated PNG

Extensions: .png

Developer: [The Animated PNG Project](#)²¹

Support

SCIFIO:

Export:

Officially Supported Versions:

Supported Metadata Fields: *Animated PNG*

Freely Available Software:

- Firefox 3+²²
- Opera 9.5+²³
- KSquirrel²⁴

We currently have:

- a specification document²⁵
- several APNG files

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

²⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/AnalyzeReader.java>

²¹<http://www.animatedpng.com/>

²²<http://www.mozilla.com/firefox>

²³<http://www.opera.com/download>

²⁴<http://ksquirrel.sourceforge.net/download.php>

²⁵http://wiki.mozilla.org/APNG_Specification

Source Code: [APNGReader.java](#)²⁶

Notes:

18.9 Aperio AFI

Extensions: .afi, .svs

Owner: [Aperio](#)²⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Aperio AFI*

We currently have:


- several AFI datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [AFIReader.java](#)²⁸

Notes:

See also:

[Aperio ImageScope](#)²⁹


18.10 Aperio SVS TIFF

Extensions: .svs

Owner: [Aperio](#)³⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions: 8.0, 8.2, 9.0

Supported Metadata Fields: *Aperio SVS TIFF*

We currently have:

²⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/APNGReader.java>

²⁷<http://www.aperio.com/>

²⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/AFIReader.java>


²⁹<http://www.aperio.com/#imagescope-request>

³⁰<http://www.aperio.com/>


- many SVS datasets
- an SVS specification document
- the ability to generate additional SVS datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [SVSReader.java](#)³¹

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

See also:

[Aperio ImageScope](#)³²

18.11 Applied Precision CellWorX

Extensions: .htd, .pnl

Developer: [Applied Precision](#)³³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Applied Precision CellWorX*


We currently have:

- a few CellWorX datasets


We would like to have:


- a CellWorX specification document
- more CellWorX datasets

Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

³¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SVSReader.java>

³²<http://www.aperio.com/#imagescope-request>

³³<http://www.api.com>

Additional Information

Source Code: [CellWorxReader.java](#)³⁴

Notes:

18.12 AVI (Audio Video Interleave)

Extensions: .avi

Developer: [Microsoft](#)³⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *AVI (Audio Video Interleave)*

Freely Available Software:

- [AVI Reader plugin for ImageJ](#)³⁶
- [AVI Writer plugin for ImageJ](#)³⁷


We currently have:

- several AVI datasets


We would like to have:


- more AVI datasets, including:
 - files with audio tracks and/or multiple video tracks
 - files compressed with a common unsupported codec
 - 2+ GB files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [AVIReader.java](#)³⁸

Notes:

- Bio-Formats can save image stacks as AVI (uncompressed).
- The following codecs are supported for reading:
 - Microsoft Run-Length Encoding (MSRLE)
 - Microsoft Video (MSV1)
 - Raw (uncompressed)

³⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/CellWorxReader.java>

³⁵<http://www.microsoft.com/>

³⁶<http://rsb.info.nih.gov/ij/plugins/avi-reader.html>

³⁷<http://rsb.info.nih.gov/ij/plugins/avi.html>

³⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/AVIReader.java>

– JPEG

See also:

[AVI RIFF File Reference](#)³⁹ [AVI on Wikipedia](#)⁴⁰

18.13 Axon Raw Format

Extensions: .arf

Owner: INDEC BioSystems⁴¹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Axon Raw Format*


We currently have:

- one ARF dataset
- a [specification document](#)⁴²

We would like to have:

- more ARF datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ARFReader.java](#)⁴³

Notes:

18.14 BD Pathway

Extensions: .exp, .tif

Owner: BD Biosciences⁴⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

³⁹<http://msdn2.microsoft.com/en-us/library/ms779636.aspx>

⁴⁰http://en.wikipedia.org/wiki/Audio_Video_Interleave

⁴¹<http://www.indecbiosystems.com/>

⁴²http://www.indecbiosystems.com/imagingworkbench/ApplicationNotes/IWAppNote11-ARF_File_Format.pdf

⁴³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ARFReader.java>

⁴⁴<http://www.bdbiosciences.com>

Supported Metadata Fields: *BD Pathway*


We currently have:


- a few BD Pathway datasets


We would like to have:


- more BD Pathway datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [BDReader.java](#)⁴⁵

Notes:

18.15 Becker & Hickl SPCImage

Extensions: .sdt

Owner: [Becker-Hickl](#)⁴⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Becker & Hickl SPCImage*

We currently have:

- an SDT specification document (from 2008 April, in PDF)
- an SDT specification document (from 2006 June, in PDF)
- Becker & Hickl's *SPCImage*⁴⁷ software
- a large number of SDT datasets
- the ability to produce new datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

⁴⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BDReader.java>

⁴⁶<http://www.becker-hickl.de/>

⁴⁷<http://www.becker-hickl.de/software/tcspc/softwaretcspcspecial.htm>

Additional Information

Source Code: [SDTReader.java](#)⁴⁸

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

18.16 Bio-Rad Gel

Extensions: .lsc

Owner: [Bio-Rad](#)⁴⁹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Bio-Rad Gel*


We currently have:

- software that can read Bio-Rad Gel files
- several Bio-Rad Gel files

We would like to have:


- a Bio-Rad Gel specification
- more Bio-Rad Gel files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [BioRadGelReader.java](#)⁵⁰

Notes:

18.17 Bio-Rad PIC

Extensions: .pic, .raw, .xml

Developer: Bio-Rad

Owner: [Carl Zeiss, Inc.](#)⁵¹

Support

SCIFIO: 

⁴⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SDTReader.java>

⁴⁹<http://www.bio-rad.com>

⁵⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BioRadGelReader.java>

⁵¹<http://www.zeiss.com/>

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Bio-Rad PIC*

Freely Available Software:


- [Bio-Rad PIC reader plugin for ImageJ](#)⁵²

We currently have:


- a PIC specification document (v4.5, in PDF)
- an older PIC specification document (v4.2, from 1996 December 16, in DOC)
- a large number of PIC datasets
- the ability to produce new datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [BioRadReader.java](#)⁵³

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

- Commercial applications that support this format include:
 - [Bitplane Imaris](#)⁵⁴
 - [SVI Huygens](#)⁵⁵

18.18 Bio-Rad SCN

Extensions: .scn

Developer: Bio-Rad

Owner: [Bio-Rad](#)⁵⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Bio-Rad SCN*

We currently have:

- a few Bio-Rad .scn files

⁵²<http://rsb.info.nih.gov/ij/plugins/biorad.html>

⁵³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BioRadReader.java>

⁵⁴<http://www.bitplane.com/>

⁵⁵<http://svi.nl/>

⁵⁶<http://www.bio-rad.com>

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

Source Code: [BioRadSCNReader.java](#)⁵⁷

Notes:

18.19 Bitplane Imaris

Extensions: .ims

Owner: [Bitplane](#)⁵⁸

Support

SCIFIO:

Export:

Officially Supported Versions: 2.7, 3.0, 5.5

Supported Metadata Fields: *Bitplane Imaris*

We currently have:

- an [Imaris \(RAW\) specification document](#)⁵⁹ (from no later than 1997 November 11, in HTML)
- an Imaris 5.5 (HDF) specification document
- Bitplane's `bfFileReaderImaris3N` code (from no later than 2005, in C++)
- several older Imaris (RAW) datasets
- one Imaris 3 (TIFF) dataset
- several Imaris 5.5 (HDF) datasets

We would like to have:

- an Imaris 3 (TIFF) specification document
- more Imaris 3 (TIFF) datasets

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

⁵⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BioRadSCNReader.java>

⁵⁸<http://www.bitplane.com/>

⁵⁹<http://flash.bitplane.com/support/faqs/faqsview.cfm?inCat=6&inQuestionID=104>

Source Code: [ImarisHDFReader.java](#)⁶⁰, [ImarisTiffReader.java](#)⁶¹, [ImarisReader.java](#)⁶²

Notes:

- **There are three distinct Imaris formats:**
 1. the old binary format (introduced in Imaris version 2.7)
 2. Imaris 3, a TIFF variant (introduced in Imaris version 3.0)
 3. Imaris 5.5, an HDF variant (introduced in Imaris version 5.5)

18.20 Bruker MRI

Developer: [Bruker](#)⁶³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Bruker MRI*

Freely Available Software:

- [Bruker plugin for ImageJ](#)⁶⁴


We currently have:

- a few Bruker MRI datasets


We would like to have:


- an official specification document


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [BrukerReader.java](#)⁶⁵

Notes:

18.21 Burleigh

Extensions: .img

Owner: Burleigh Instruments

Support

⁶⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImarisHDFReader.java>

⁶¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImarisTiffReader.java>

⁶²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImarisReader.java>

⁶³<http://www.bruker.com/>

⁶⁴<http://rsbweb.nih.gov/ij/plugins/bruker.html>

⁶⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BrukerReader.java>

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Burleigh*


We currently have:


- Pascal code that can read Burleigh files (from ImageSXM)
- a few Burleigh files

We would like to have:


- a Burleigh file format specification
- more Burleigh files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [BurleighReader.java](#)⁶⁶

Notes:

18.22 Canon DNG

Extensions: .cr2, .crw

Developer: [Canon](#)⁶⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Canon DNG*

Freely Available Software:

- [IrfanView](#)⁶⁸

We currently have:

- a few example datasets





We would like to have:

- an official specification document

⁶⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BurleighReader.java>

⁶⁷<http://canon.com>

⁶⁸<http://www.irfanview.com/>

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [DNGReader.java](#)⁶⁹

Notes:

18.23 Cellomics

Extensions: .c01

Developer: [Thermo Fisher Scientific](#)⁷⁰**Support**SCIFIO: Export: 

Officially Supported Versions:




Supported Metadata Fields: *Cellomics*

We currently have:

- a few Cellomics .c01 datasets

We would like to have:

- a Cellomics .c01 specification document
- more Cellomics .c01 datasets

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [CellomicsReader.java](#)⁷¹

Notes:

⁶⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/DNGReader.java>⁷⁰<http://www.thermofisher.com/>⁷¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/CellomicsReader.java>

18.24 cellSens VSI

Extensions: .vsi

Developer: Olympus⁷²

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *cellSens VSI*

We currently have:

- a few example datasets

We would like to have:

- an official specification document

Ratings

Pixels: 🟡

Metadata: 🟡

Openness: 🟡

Presence: 🟡

Utility: 🟡

Additional Information

Source Code: [CellSensReader.java](#)⁷³

Notes:

18.25 CellVoyager

Extensions: .xml, .tif

Owner: Yokogawa⁷⁴

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *CellVoyager*

We currently have:

- a few example datasets

We would like to have:

Ratings




Pixels: 🟢

Metadata: 🟡

⁷²<http://www.olympus.com/>

⁷³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/CellSensReader.java>

⁷⁴<http://www.yokogawa.com/>

Openness: Presence: Utility: **Additional Information**Source Code: [CellVoyagerReader.java](#)⁷⁵

Notes:

18.26 DeltaVision

Extensions: .dv, .r3d

Owner: [Applied Precision](#)⁷⁶**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *DeltaVision*

Freely Available Software:

- [DeltaVision Opener plugin for ImageJ](#)⁷⁷




Sample Datasets:

- [Applied Precision Datasets](#)⁷⁸

We currently have:

- a DV specification document (v2.10 or newer, in HTML)
- numerous DV datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [DeltavisionReader.java](#)⁷⁹

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

- The Deltavision format is based on the Medical Research Council (MRC) file format.
- Commercial applications that support Delta Vision include:

⁷⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/CellVoyagerReader.java>⁷⁶<http://www.api.com/>⁷⁷<http://rsb.info.nih.gov/ij/plugins/track/delta.html>⁷⁸<http://www.api.com/downloads/software/softworxexplorer2.0/SampleImages.zip>⁷⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/DeltavisionReader.java>

- Bitplane Imaris⁸⁰
- SVI Huygens⁸¹
- Image-Pro Plus⁸²

See also:

DeltaVision system description⁸³

18.27 DICOM

Extensions: .dcm, .dicom

Developer: National Electrical Manufacturers Association⁸⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *DICOM*

Freely Available Software:

- OsiriX Medical Imaging Software⁸⁵
- ezDICOM⁸⁶
- Wikipedia's list of freeware health software⁸⁷

Sample Datasets:


- MRI Chest from FreeVol-3D web site⁸⁸
- Medical Image Samples from Sebastien Barre's Medical Imaging page⁸⁹
- DICOM sample image sets from OsiriX web site⁹⁰

We currently have:


- DICOM specification documents⁹¹ (PS 3 - 2007, from 2006 December 28, in DOC and PDF)
- numerous DICOM datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

⁸⁰<http://www.bitplane.com/>

⁸¹<http://svi.nl/>

⁸²<http://www.mediacy.com/>

⁸³<http://api.com/deltavision.asp>

⁸⁴<http://www.nema.org/>

⁸⁵<http://www.osirix-viewer.com/>

⁸⁶<http://www.sph.sc.edu/comd/rorden/ezdicom.html>

⁸⁷http://en.wikipedia.org/wiki/List_of_freeware_health_software#Imaging.2FVisualization

⁸⁸http://members.tripod.com/%7Eclunis_immensus/free3d/hk-40.zip

⁸⁹<http://www.barre.nom.fr/medical/samples/>

⁹⁰<http://osirix-viewer.com/datasets/>

⁹¹<http://medical.nema.org/dicom/2007/>

Additional Information

Source Code: [DicomReader.java](#)⁹²

Notes:

- DICOM stands for “Digital Imaging and Communication in Medicine”.
- Bio-Formats supports both compressed and uncompressed DICOM files.

See also:

[DICOM homepage](#)⁹³


18.28 ECAT7

Extensions: .v

Developer: [Siemens](#)⁹⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *ECAT7*


We currently have:


- a few ECAT7 files

We would like to have:


- an ECAT7 specification document
- more ECAT7 files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [Ecat7Reader.java](#)⁹⁵

Notes:

18.29 EPS (Encapsulated PostScript)

Extensions: .eps, .epsi, .ps

Developer: [Adobe](#)⁹⁶

Support

⁹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/DicomReader.java>

⁹³<http://medical.nema.org/>

⁹⁴<http://www.siemens.com>

⁹⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/Ecat7Reader.java>

⁹⁶<http://www.adobe.com/>

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *EPS (Encapsulated PostScript)*

Freely Available Software:

- [EPS Writer plugin for ImageJ](#)⁹⁷

We currently have:

- a few EPS datasets
- the ability to produce new datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [EPSReader.java](#)⁹⁸ Source Code: [EPSWriter.java](#)⁹⁹

Notes:

- Bio-Formats can save individual planes as EPS.
- Certain types of compressed EPS files are not supported.

18.30 Evotec/PerkinElmer Opera Flex

Extensions: .flex, .mea, .res

Developer: [Evotec Technologies](#), now [PerkinElmer](#)¹⁰⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Evotec/PerkinElmer Opera Flex*

We currently have:

- many Flex datasets

We would like to have:





- a freely redistributable LuraWave LWF decoder

⁹⁷<http://rsb.info.nih.gov/ij/plugins/eps-writer.html>

⁹⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/EPSReader.java>

⁹⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/EPSWriter.java>

¹⁰⁰<http://www.perkinelmer.com/>

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [FlexReader.java](#)¹⁰¹

Notes:


The LuraWave LWF decoder library (i.e. lwf_jsdk2.6.jar) with license code is required to decode wavelet-compressed Flex files.

See also:

[LuraTech](#) (developers of the proprietary LuraWave LWF compression used for Flex image planes)¹⁰²

18.31 FEI

Extensions: .img

Developer: [FEI](#)¹⁰³**Support**SCIFIO: Export: 

Officially Supported Versions:



Supported Metadata Fields: *FEI*

We currently have:

- a few FEI files

We would like to have:

- a specification document
- more FEI files

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [FEIReader.java](#)¹⁰⁴

Notes:

¹⁰¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FlexReader.java>

¹⁰²<http://www.luratech.com/>

¹⁰³<http://www.fei.com/>

¹⁰⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FEIReader.java>

18.32 FEI TIFF

Extensions: .tiff

Developer: FEI¹⁰⁵

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *FEI TIFF*

We currently have:

- a few FEI TIFF datasets

We would like to have:

Ratings

Pixels: ▲

Metadata: ■

Openness: ■

Presence: ▼

Utility: ▼

Additional Information

Source Code: FEITiffReader.java¹⁰⁶

Notes:

18.33 FITS (Flexible Image Transport System)

Extensions: .fits

Developer: National Radio Astronomy Observatory¹⁰⁷

Support

SCIFIO: ✅

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *FITS (Flexible Image Transport System)*

We currently have:

- a *FITS* specification document¹⁰⁸ (NOST 100-2.0, from 1999 March 29, in HTML)
- several FITS datasets

We would like to have:

Ratings





Pixels: ▲

¹⁰⁵<http://www.fei.com>

¹⁰⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FEITiffReader.java>

¹⁰⁷<http://www.nrao.edu/>

¹⁰⁸http://archive.stsci.edu/fits/fits_standard/

Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [FitsReader.java](#)¹⁰⁹

Notes:

See also:[MAST:FITS homepage](#)¹¹⁰ [FITS Support Office](#)¹¹¹

18.34 Gatan Digital Micrograph

Extensions: .dm3

Owner: [Gatan](#)¹¹²**Support**SCIFIO: Export: 

Officially Supported Versions: 3

Supported Metadata Fields: *Gatan Digital Micrograph*

Freely Available Software:





- [DM3 Reader plugin for ImageJ](#)¹¹³
- [EMAN](#)¹¹⁴

We currently have:

- Gatan's ImageReader2003 code (from 2003, in C++)
- numerous DM3 datasets

We would like to have:

- a DM3 specification document

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [GatanReader.java](#)¹¹⁵¹⁰⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/FitsReader.java>¹¹⁰<http://archive.stsci.edu/fits/>¹¹¹<http://fits.gsfc.nasa.gov/>¹¹²<http://www.gatan.com/>¹¹³http://rsb.info.nih.gov/ij/plugins/DM3_Reader.html¹¹⁴<http://blake.bcm.edu/EMAN/>¹¹⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/GatanReader.java>

Notes:

Commercial applications that support .dm3 files include [Datasqueeze](#)¹¹⁶.

18.35 Gatan Digital Micrograph 2

Extensions: .dm2

Developer: [Gatan](#)¹¹⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions: 2

Supported Metadata Fields: *Gatan Digital Micrograph 2*


We currently have:

- Pascal code that can read DM2 files (from ImageSXM)
- a few DM2 files


We would like to have:


- an official DM2 specification document
- more DM2 files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [GatanDM2Reader.java](#)¹¹⁸

Notes:

18.36 GIF (Graphics Interchange Format)

Extensions: .gif

Developer: [CompuServe](#)¹¹⁹

Owner: [Unisys](#)¹²⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions:

¹¹⁶<http://www.datasqueezesoftware.com/>

¹¹⁷<http://www.gatan.com>

¹¹⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/GatanDM2Reader.java>

¹¹⁹<http://www.compuserve.com/>

¹²⁰<http://www.unisys.com/>

Supported Metadata Fields: *GIF (Graphics Interchange Format)*

Freely Available Software:

- Animated GIF Reader plugin for ImageJ¹²¹
- GIF Stack Writer plugin for ImageJ¹²²

We currently have:

- a GIF specification document¹²³ (Version 89a, from 1990, in HTML)
- numerous GIF datasets
- the ability to produce new datasets

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

Source Code: [GIFReader.java](#)¹²⁴

Notes:

18.37 Hamamatsu Aquacosmos NAF

Extensions: .naf

Developer: [Hamamatsu](#)¹²⁵

Support

SCIFIO:

Export:

Officially Supported Versions:

Supported Metadata Fields: *Hamamatsu Aquacosmos NAF*

We currently have:

- a few NAF files

We would like to have:

- a specification document
- more NAF files

Ratings

Pixels:

Metadata:

Openness:



¹²¹<http://rsb.info.nih.gov/ij/plugins/agr.html>

¹²²<http://rsb.info.nih.gov/ij/plugins/gif-stack-writer.html>

¹²³<http://tronche.com/computer-graphics/gif/>

¹²⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/GIFReader.java>

¹²⁵<http://www.hamamatsu.com/>

Presence: Utility: **Additional Information**Source Code: [NAFReader.java](#)¹²⁶

Notes:

18.38 Hamamatsu HIS

Extensions: .his

Owner: [Hamamatsu](#)¹²⁷**Support**SCIFIO: Export: 

Officially Supported Versions:




Supported Metadata Fields: *Hamamatsu HIS*

We currently have:

- Pascal code that can read HIS files (from ImageSXM)
- several HIS files

We would like to have:

- an HIS specification
- more HIS files

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [HISReader.java](#)¹²⁸

Notes:

18.39 Hamamatsu ndpi

Extensions: .ndpi

Developer: [Hamamatsu](#)¹²⁹**Support**SCIFIO: ¹²⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NAFReader.java>¹²⁷<http://www.hamamatsu.com>¹²⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/HISReader.java>¹²⁹<http://www.hamamatsu.com>

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Hamamatsu ndpi*

Freely Available Software:

- [NDP.view](#)¹³⁰

Sample Datasets:

- [OpenSlide](#)¹³¹

We currently have:

- many example datasets


We would like to have:


- an official specification document


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [NDPIReader.java](#)¹³²

Notes:

18.40 Hamamatsu VMS

Extensions: `.vms`

Developer: [Hamamatsu](#)¹³³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Hamamatsu VMS*

Sample Datasets:

- [OpenSlide](#)¹³⁴

We currently have:

- a few example datasets
- [developer documentation from the OpenSlide project](#)¹³⁵

We would like to have:

¹³⁰http://www.olympusamerica.com/seg_section/seg_vm_downloads.asp

¹³¹<http://openslide.cs.cmu.edu/download/openslide-testdata/Hamamatsu/>

¹³²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NDPIReader.java>

¹³³<http://www.hamamatsu.com>


¹³⁴<http://openslide.cs.cmu.edu/download/openslide-testdata/Hamamatsu-vms/>


¹³⁵<http://openslide.org/Hamamatsu%20format/>


- an official specification document
- more example datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [HamamatsuVMSReader.java](#)¹³⁶

Notes:

18.41 Hitachi S-4800

Extensions: .txt, .tif, .bmp, .jpg

Developer: [Hitachi](#)¹³⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Hitachi S-4800*

We currently have:

- several Hitachi S-4800 datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [HitachiReader.java](#)¹³⁸

Notes:

¹³⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/HamamatsuVMSReader.java>

¹³⁷http://www.hitachi-hita.com/sites/default/files/technotes/Hitachi_4800_STEM.pdf

¹³⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/HitachiReader.java>

18.42 ICS (Image Cytometry Standard)

Extensions: .ics, .ids

Developer: P. Dean et al.

Support

SCIFIO: 

Export: 

Officially Supported Versions: 1.0, 2.0

Supported Metadata Fields: *ICS (Image Cytometry Standard)*

Freely Available Software:


- [Libics \(ICS reference library\)](#)¹³⁹
- [ICS Opener plugin for ImageJ](#)¹⁴⁰
- [IrfanView](#)¹⁴¹

We currently have:

- numerous ICS datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ICSReader.java](#)¹⁴² Source Code: [ICSWriter.java](#)¹⁴³

Notes:

- ICS version 1.0 datasets have two files - an .ics file that contains all of the metadata in plain-text format, and an .ids file that contains all of the pixel data.
- ICS version 2.0 datasets are a single .ics file that contains both pixels and metadata.

Commercial applications that can support ICS include:

- [Bitplane Imaris](#)¹⁴⁴
- [SVI Huygens](#)¹⁴⁵

18.43 Imacon

Extensions: .fff

Owner: [Hasselblad](#)¹⁴⁶

¹³⁹<http://libics.sourceforge.net/>

¹⁴⁰http://valelab.ucsf.edu/%7Enstuurman/IJplugins/Ics_Opener.html

¹⁴¹<http://www.irfanview.com/>

¹⁴²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/ICSReader.java>

¹⁴³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/ICSWriter.java>

¹⁴⁴<http://www.bitplane.com/>

¹⁴⁵<http://svi.nl/>

¹⁴⁶<http://www.hasselbladusa.com/>

SupportSCIFIO: Export: 

Officially Supported Versions:






Supported Metadata Fields: *Imacon*

We currently have:

- one Imacon file

We would like to have:

- more Imacon files

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [ImaconReader.java](#)¹⁴⁷

Notes:

18.44 ImagePro Sequence

Extensions: .seq

Owner: [Media Cybernetics](#)¹⁴⁸**Support**SCIFIO: Export: 

Officially Supported Versions:


Supported Metadata Fields: *ImagePro Sequence*




We currently have:

- the *Image-Pro Plus*¹⁴⁹ software
- a few SEQ datasets
- the ability to produce more datasets

We would like to have:

- an official SEQ specification document

RatingsPixels: Metadata: ¹⁴⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImaconReader.java>¹⁴⁸<http://www.mediacy.com/>¹⁴⁹<http://www.mediacy.com/index.aspx?page=IPP>

Openness: Presence: Utility: **Additional Information**Source Code: [SEQReader.java](#)¹⁵⁰

Notes:

18.45 ImagePro Workspace

Extensions: .ipw

Owner: [Media Cybernetics](#)¹⁵¹**Support**SCIFIO: Export: 

Officially Supported Versions:



Supported Metadata Fields: *ImagePro Workspace*

We currently have:

- the [Image-Pro Plus](#)¹⁵² software
- a few IPW datasets
- the ability to produce more datasets

We would like to have:

- an official IPW specification document
- more IPW datasets:
 - multiple datasets in one file
 - 2+ GB files

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [IPWReader.java](#)¹⁵³

Notes:

Bio-Formats uses a modified version of the [Apache Jakarta POI](#)¹⁵⁴ library to read IPW files.¹⁵⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SEQReader.java>¹⁵¹<http://www.mediacy.com/>¹⁵²<http://www.mediacy.com/index.aspx?page=IPP>¹⁵³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/IPWReader.java>¹⁵⁴<http://jakarta.apache.org/poi/>

18.46 IMAGIC

Extensions: .hed, .img

Developer: Image Science¹⁵⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *IMAGIC*

Freely Available Software:

- [em2em](#)¹⁵⁶


We currently have:

- one example dataset
- official file format documentation

We would like to have:


- more example datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ImagicReader.java](#)¹⁵⁷

Notes:

See also:

[IMAGIC specification](#)¹⁵⁸

18.47 IMOD

Extensions: .mod

Developer: Boulder Laboratory for 3-Dimensional Electron Microscopy of Cells¹⁵⁹

Owner: Boulder Laboratory for 3-Dimensional Electron Microscopy of Cells¹⁶⁰

Support

SCIFIO: 

Export: 

¹⁵⁵<http://www.imagescience.de>

¹⁵⁶<http://www.imagescience.de/em2em.html>

¹⁵⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImagicReader.java>

¹⁵⁸<http://www.imagescience.de/em2em.html>

¹⁵⁹<http://bio3d.colorado.edu>

¹⁶⁰<http://bio3d.colorado.edu>

Officially Supported Versions:

Supported Metadata Fields: *IMOD*

Freely Available Software:

- [IMOD](#)¹⁶¹

We currently have:

- a few sample datasets
- [official documentation](#)¹⁶²


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [IMODReader.java](#)¹⁶³

Notes:

18.48 Improvion Openlab LIFF

Extensions: .liff

Developer: [Improvion](#)¹⁶⁴

Owner: [PerkinElmer](#)¹⁶⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions: 2.0, 5.0

Supported Metadata Fields: *Improvion Openlab LIFF*


We currently have:

- an Openlab specification document (from 2000 February 8, in DOC)
- Improvion's XLIFFFileImporter code for reading Openlab LIFF v5 files (from 2006, in C++)
- several Openlab datasets

We would like to have:

- more Openlab datasets (preferably with 32-bit integer data)

Ratings

Pixels: 

Metadata: 


¹⁶¹<http://bio3d.colorado.edu/imod/>

¹⁶²<http://bio3d.colorado.edu/imod/doc/bin/spec.html>

¹⁶³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/IMODReader.java>

¹⁶⁴<http://www.improvion.com/>

¹⁶⁵<http://www.perkinelmer.com/>

Openness: Presence: Utility: **Additional Information**Source Code: [OpenlabReader.java](#)¹⁶⁶

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.**See also:**[Openlab software review](#)¹⁶⁷

18.49 Improvision Openlab Raw

Extensions: .raw

Developer: [Improvision](#)¹⁶⁸Owner: [PerkinElmer](#)¹⁶⁹**Support**SCIFIO: Export: 


Officially Supported Versions:

Supported Metadata Fields: *Improvision Openlab Raw*

We currently have:

- an [Openlab Raw specification document](#)¹⁷⁰ (from 2004 November 09, in HTML)
- a few Openlab Raw datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [OpenlabRawReader.java](#)¹⁷¹

Notes:

See also:[Openlab software review](#)¹⁷²¹⁶⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/OpenlabReader.java>¹⁶⁷<http://www.improvision.com/products/openlab/>¹⁶⁸<http://www.improvision.com/>¹⁶⁹<http://www.perkinelmer.com/>¹⁷⁰http://cellularimaging.perkinelmer.com/support/technical_notes/detail.php?id=344¹⁷¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/OpenlabRawReader.java>¹⁷²<http://www.improvision.com/products/openlab/>

18.50 Improvion TIFF

Extensions: .tif

Developer: Improvion¹⁷³

Owner: PerkinElmer¹⁷⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Improvion TIFF*

We currently have:

- an Improvion TIFF specification document
- a few Improvion TIFF datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: `ImprovionTiffReader.java`¹⁷⁵

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

See also:

[Openlab software overview](#)¹⁷⁶

18.51 Inspector OBF

Extensions: .obf, .msr

Developer: Department of NanoBiophotonics, MPI-BPC¹⁷⁷

Owner: MPI-BPC¹⁷⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

¹⁷³<http://www.improvion.com/>

¹⁷⁴<http://www.perkinelmer.com/>

¹⁷⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImprovionTiffReader.java>

¹⁷⁶<http://www.improvion.com/products/openlab/>

¹⁷⁷<https://iinspector.mpibpc.mpg.de/index.html>

¹⁷⁸<http://www.mpibpc.mpg.de/>


Supported Metadata Fields: *Inspector OBF*


We currently have:


- a few .msr datasets
- a specification document¹⁷⁹


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [OBFReader.java](#)¹⁸⁰

Notes:

18.52 InCell 1000

Extensions: .xdce, .tif

Developer: [GE](#)¹⁸¹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *InCell 1000*


We currently have:

- a few InCell 1000 datasets

We would like to have:


- an InCell 1000 specification document
- more InCell 1000 datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [InCellReader.java](#)¹⁸²

¹⁷⁹<https://inspector.mpibpc.mpg.de/documentation/fileformat.html>

¹⁸⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/OBFReader.java>

¹⁸¹<http://gelifesciences.com/>

¹⁸²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/InCellReader.java>

Notes:

18.53 InCell 3000

Extensions: .frm

Developer: [GE](#)¹⁸³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *InCell 3000*

Sample Datasets:

- [Broad Bioimage Benchmark Collection](#)¹⁸⁴


We currently have:

- a few example datasets


We would like to have:

- an official specification document


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [InCell3000Reader.java](#)¹⁸⁵

Notes:

18.54 INR

Extensions: .inr

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *INR*

We currently have:

- several sample .inr datasets


¹⁸³<http://gelifesciences.com/>

¹⁸⁴<http://www.broadinstitute.org/bbbc/BBBC013/>


¹⁸⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/InCell3000Reader.java>


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [INRReader.java](#)¹⁸⁶

Notes:

18.55 Inveon

Extensions: .hdr

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Inveon*

We currently have:


a few Inveon datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [InveonReader.java](#)¹⁸⁷

Notes:

18.56 IPLab

Extensions: .ipl

Developer: Scanalytics

Owner: was [BD Biosystems](#)¹⁸⁸, now [BioVision Technologies](#)¹⁸⁹

¹⁸⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/INRReader.java>

¹⁸⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/InveonReader.java>

¹⁸⁸<http://www.bdbiosciences.com/>

¹⁸⁹<http://www.biovis.com/iplab.htm>

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *IPLab*

Freely Available Software:

- [IPLab Reader plugin for ImageJ](#)¹⁹⁰

We currently have:

- an IPLab specification document (v3.6.5, from 2004 December 1, in PDF)
- several IPLab datasets

We would like to have:

- more IPLab datasets (preferably with 32-bit integer or floating point data)

Ratings

Pixels: 🟢

Metadata: 🟡

Openness: 🟡

Presence: 🟠

Utility: 🟠

Additional InformationSource Code: [IPLabReader.java](#)¹⁹¹

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

Commercial applications that support IPLab include:

- [Bitplane Imaris](#)¹⁹²
- [SVI Huygens](#)¹⁹³

See also:[IPLab software review](#)¹⁹⁴

18.57 IPLab-Mac

Extensions: .ipm

Owner: [BioVision Technologies](#)¹⁹⁵**Support**

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

¹⁹⁰<http://rsb.info.nih.gov/ij/plugins/iplab-reader.html>¹⁹¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/IPLabReader.java>¹⁹²<http://www.bitplane.com/>¹⁹³<http://svi.nl/>¹⁹⁴<http://www.biovis.com/iplab.htm>¹⁹⁵<http://biovis.com/>

Supported Metadata Fields: *IPLab-Mac*


We currently have:


- a few IPLab-Mac datasets
- a specification document


We would like to have:


- more IPLab-Mac datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [IvisionReader.java](#)¹⁹⁶

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

18.58 JEOL

Extensions: .dat, .img, .par

Owner: [JEOL](#)¹⁹⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *JEOL*


We currently have:

- Pascal code that reads JEOL files (from ImageSXM)
- a few JEOL files


We would like to have:


- an official specification document
- more JEOL files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

¹⁹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/IvisionReader.java>

¹⁹⁷<http://www.jeol.com>

Additional Information

Source Code: [JEOLReader.java](#)¹⁹⁸

Notes:

18.59 JPEG

Extensions: .jpg

Developer: [Independent JPEG Group](#)¹⁹⁹

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *JPEG*


We currently have:

- a [JPEG specification document](#)²⁰⁰ (v1.04, from 1992 September 1, in PDF)
- numerous JPEG datasets
- the ability to produce more datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [JPEGReader.java](#)²⁰¹ Source Code: [JPEGWriter.java](#)²⁰²

Notes:

Bio-Formats can save individual planes as JPEG. Bio-Formats uses the [Java Image I/O](#)²⁰³ API to read and write JPEG files. JPEG stands for “Joint Photographic Experts Group”.

See also:

[JPEG homepage](#)²⁰⁴

18.60 JPEG 2000

Extensions: .jp2

Developer: [Independent JPEG Group](#)²⁰⁵

¹⁹⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/JEOLReader.java>

¹⁹⁹<http://www.ijg.org/>

²⁰⁰<http://www.w3.org/Graphics/JPEG/jfif3.pdf>

²⁰¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/JPEGReader.java>

²⁰²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/JPEGWriter.java>

²⁰³<http://docs.oracle.com/javase/6/docs/technotes/guides/imageio/>

²⁰⁴<http://www.jpeg.org/jpeg/index.html>

²⁰⁵<http://www.ijg.org/>

SupportSCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *JPEG 2000*



Freely Available Software:

- [JJ2000 \(JPEG 2000 library for Java\)](#)²⁰⁶

We currently have:

- a [JPEG 2000 specification document](#)²⁰⁷ (final draft, from 2000, in PDF)
- a few .jp2 files

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [JPEG2000Reader.java](#)²⁰⁸ Source Code: [JPEG2000Writer.java](#)²⁰⁹

Notes:

Bio-Formats uses the [JAI Image I/O Tools](#)²¹⁰ library to read JP2 files. JPEG stands for “Joint Photographic Experts Group”.

18.61 JPK

Extensions: .jpk

Developer: [JPK Instruments](#)²¹¹**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *JPK*

We currently have:

- Pascal code that can read JPK files (from ImageSXM)
- a few JPK files


We would like to have:

- an official specification document


²⁰⁶<http://code.google.com/p/jj2000/>²⁰⁷<http://www.jpeg.org/jpeg2000/CDs15444.html>²⁰⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/JPEG2000Reader.java>²⁰⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/JPEG2000Writer.java>²¹⁰<https://java.net/projects/jai-imageio>²¹¹<http://www.jpk.com>


- more JPK files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [JPKReader.java](#)²¹²

Notes:

18.62 JPX

Extensions: .jpx

Developer: [JPEG Committee](#)²¹³

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *JPX*

We currently have:

- a few .jpx files

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [JPXReader.java](#)²¹⁴

Notes:

18.63 Khoros VIFF (Visualization Image File Format) Bitmap

Extensions: .xv

Developer: [Khoral](#)²¹⁵

²¹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/JPKReader.java>

²¹³<http://www.jpeg.org/jpeg2000/>

²¹⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/JPXReader.java>

²¹⁵<http://www.khoral.com/company/>

Owner: [AccuSoft](#)²¹⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Khoros VIFF (Visualization Image File Format) Bitmap*

Sample Datasets:


- [VIFF Images](#)²¹⁷

We currently have:


- several VIFF datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [KhorosReader.java](#)²¹⁸

Notes:

See also:

[VisiQuest software overview \(formerly known as KhorosPro\)](#)²¹⁹

18.64 Kodak BIP

Extensions: .bip

Developer: [Kodak/Carestream](#)²²⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Kodak BIP*

We currently have:

- a few .bip datasets

We would like to have:

- an official specification document





²¹⁶<http://www.accusoft.com/company/>

²¹⁷<http://netghost.narod.ru/gff/sample/images/viff/index.htm>

²¹⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/KhorosReader.java>

²¹⁹<http://www.accusoft.com/products/visiquest/>

²²⁰<http://carestream.com>

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [KodakReader.java](#)²²¹

Notes:

See also:[Information on Image Station systems](#)²²²

18.65 Lambert Instruments FLIM

Extensions: .fli

Developer: [Lambert Instruments](#)²²³**Support**SCIFIO: Export: 




Officially Supported Versions:

Supported Metadata Fields: *Lambert Instruments FLIM*

We currently have:

- an LI-FLIM specification document
- several example LI-FLIM datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [LiFlimReader.java](#)²²⁴

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.²²¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/KodakReader.java>²²²<http://carestream.com/PublicContent.aspx?langType=1033&id=448953>²²³<http://www.lambert-instruments.com>²²⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LiFlimReader.java>


18.66 LaVision Inspector

Extensions: .msr

Developer: [LaVision BioTec](#)²²⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *LaVision Inspector*

We currently have:

- a few .msr files


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [InspectorReader.java](#)²²⁶

Notes:

18.67 Leica LCS LEI

Extensions: .lei, .tif

Developer: [Leica Microsystems CMS GmbH](#)²²⁷

Owner: [Leica](#)²²⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Leica LCS LEI*

Freely Available Software:

- [Leica LCS Lite](#)²²⁹

We currently have:

- an LEI specification document (beta 2.000, from no later than 2004 February 17, in PDF)
- many LEI datasets

²²⁵<http://www.lavisionbiotec.com/>

²²⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/InspectorReader.java>


²²⁷<http://www.leica-microsystems.com/>


²²⁸<http://www.leica.com/>


²²⁹<ftp://ftp.llt.de/softlib/LCSLite/LCSLite2611537.exe>


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [LeicaReader.java](#)²³⁰

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

LCS stands for “Leica Confocal Software”. LEI presumably stands for “Leica Experimental Information”.

Commercial applications that support LEI include:

- [Bitplane Imaris](#)²³¹
- [SVI Huygens](#)²³²
- [Image-Pro Plus](#)²³³

18.68 Leica LAS AF LIF (Leica Image File Format)


Extensions: .lif

Developer: [Leica Microsystems CMS GmbH](#)²³⁴

Owner: [Leica](#)²³⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions: 1.0, 2.0

Supported Metadata Fields: *Leica LAS AF LIF (Leica Image File Format)*

Freely Available Software:


- [Leica LAS AF Lite](#)²³⁶ (links at bottom of page)

We currently have:

- a LIF specification document (version 2, from no later than 2007 July 26, in PDF)
- a LIF specification document (version 1, from no later than 2006 April 3, in PDF)
- numerous LIF datasets

We would like to have:

Ratings

Pixels: 

²³⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LeicaReader.java>

²³¹<http://www.bitplane.com/>





²³²<http://svi.nl/>

²³³<http://www.mediacy.com/>

²³⁴<http://www.leica-microsystems.com/>

²³⁵<http://www.leica.com/>

²³⁶<http://www.leica-microsystems.com/products/microscope-imaging-software/life-sciences/las-af-advanced-fluorescence/>

Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [LIFReader.java](#)²³⁷

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

LAS stands for “Leica Application Suite”. AF stands for “Advanced Fluorescence”.

Commercial applications that support LIF include:

- Bitplane Imaris²³⁸
- SVI Huygens²³⁹
- Amira²⁴⁰

18.69 Leica SCN

Extensions: .scn

Developer: [Leica Microsystems](#)²⁴¹**Support**SCIFIO: Export: 

Officially Supported Versions: 2012-03-10




Supported Metadata Fields: *Leica SCN*

We currently have:

- a few sample datasets

We would like to have:

- an official specification document
- sample datasets that cannot be opened

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [LeicaSCNReader.java](#)²⁴²²³⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LIFReader.java>²³⁸<http://www.bitplane.com/>²³⁹<http://svi.nl/>²⁴⁰<http://www.amira.com/>²⁴¹<http://www.leica-microsystems.com/>²⁴²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LeicaSCNReader.java>

Notes:

18.70 LEO

Extensions: .sxm

Owner: Zeiss²⁴³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *LEO*


We currently have:

- Pascal code that can read LEO files (from ImageSXM)
- a few LEO files


We would like to have:


- an official specification document
- more LEO files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [LEOReader.java](#)²⁴⁴

Notes:


18.71 Li-Cor L2D

Extensions: .l2d, .tif, .scn

Owner: LiCor Biosciences²⁴⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Li-Cor L2D*

We currently have:

- a few L2D datasets

²⁴³<http://www.zeiss.de>


²⁴⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LEOReader.java>


²⁴⁵<http://www.licor.com/>


We would like to have:


- an official specification document
- more L2D datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [L2DReader.java](#)²⁴⁶

Notes:

L2D datasets cannot be imported into OME using server-side import. They can, however, be imported from ImageJ, or using the omeul utility.

18.72 LIM (Laboratory Imaging/Nikon)

Extensions: .lim

Owner: [Laboratory Imaging](#)²⁴⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *LIM (Laboratory Imaging/Nikon)*


We currently have:

- several LIM files
- the ability to produce more LIM files

We would like to have:

- an official specification document


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [LIMReader.java](#)²⁴⁸

Notes:

²⁴⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/L2DReader.java>

²⁴⁷<http://www.lim.cz/>

²⁴⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LIMReader.java>

Bio-Formats only supports uncompressed LIM files.

Commercial applications that support LIM include:

- NIS Elements²⁴⁹

18.73 MetaMorph 7.5 TIFF

Extensions: .tiff

Owner: Molecular Devices²⁵⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *MetaMorph 7.5 TIFF*

We currently have:

- a few Metamorph 7.5 TIFF datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: *MetamorphTiffReader.java*²⁵¹

Notes:

18.74 MetaMorph Stack (STK)

Extensions: .stk, .nd

Owner: Molecular Devices²⁵²

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *MetaMorph Stack (STK)*

We currently have:

- an STK specification document (from 2006 November 21, in DOC)

²⁴⁹<http://www.nis-elements.com/>

²⁵⁰<http://www.moleculardevices.com/>


²⁵¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MetamorphTiffReader.java>

²⁵²<http://www.moleculardevices.com/>


- an older STK specification document (from 2005 March 25, in DOC)
- an ND specification document (from 2002 January 24, in PDF)
- a large number of datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [MetamorphReader.java](#)²⁵³

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

Commercial applications that support STK include:

- [Bitplane Imaris](#)²⁵⁴
- [SVI Huygens](#)²⁵⁵
- [DIMIN](#)²⁵⁶

See also:

[Metamorph imaging system overview](#)²⁵⁷

18.75 MIAS (Maia Scientific)

Extensions: .tif

Developer: [Maia Scientific](#)²⁵⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *MIAS (Maia Scientific)*

We currently have:

- several MIAS datasets

We would like to have:

Ratings

Pixels: 

Metadata: 

²⁵³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MetamorphReader.java>




²⁵⁴<http://www.bitplane.com/>

²⁵⁵<http://svi.nl/>

²⁵⁶<http://dimin.net/>

²⁵⁷<http://www.metamorph.com/>

²⁵⁸<http://www.selectscience.net/supplier/maia-scientific/?compID=6088>

Openness: Presence: Utility: **Additional Information**Source Code: [MIASReader.java](#)²⁵⁹

Notes:

18.76 Micro-Manager

Extensions: .tif, .txt, .xml

Developer: [Vale Lab](#)²⁶⁰**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *Micro-Manager*




Freely Available Software:

- [Micro-Manager](#)²⁶¹

We currently have:

- many Micro-manager datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [MicromanagerReader.java](#)²⁶²

Notes:

18.77 MINC MRI

Extensions: .mnc

Developer: [McGill University](#)²⁶³**Support**SCIFIO: ²⁵⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MIASReader.java>²⁶⁰<http://valelab.ucsf.edu/>²⁶¹<http://micro-manager.org/>²⁶²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/MicromanagerReader.java>²⁶³<http://www.bic.mni.mcgill.ca/ServicesSoftware/MINC>

Export: 

Officially Supported Versions:

Supported Metadata Fields: *MINC MRI*

Freely Available Software:


- [MINC](#)²⁶⁴

We currently have:


- a few MINC files


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [MINCReader.java](#)²⁶⁵

Notes:

18.78 Minolta MRW

Extensions: .mrw

Developer: [Minolta](#)²⁶⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Minolta MRW*

Freely Available Software:


- [dcraw](#)²⁶⁷

We currently have:

- several .mrw files

We would like to have:

Ratings

Pixels: 

Metadata: 

Openness: 


Presence: 

²⁶⁴<http://www.bic.mni.mcgill.ca/ServicesSoftware/MINC>

²⁶⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MINCReader.java>

²⁶⁶<http://www.konicaminolta.com/>

²⁶⁷<http://www.cybercom.net/%7Edcoffin/dcraw/>

Utility: 

Additional Information

Source Code: [MRWReader.java](#)²⁶⁸

Notes:

See also:

[Description of MRW format](#)²⁶⁹

18.79 MNG (Multiple-image Network Graphics)

Extensions: .mng

Developer: [MNG Development Group](#)²⁷⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *MNG (Multiple-image Network Graphics)*

Freely Available Software:

- [libmng \(MNG reference library\)](#)²⁷¹

Sample Datasets:


- [MNG sample files](#)²⁷²

We currently have:


- the [libmng-testsuites](#)²⁷³ package (from 2003 March 05, in C)
- a large number of MNG datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [MNGReader.java](#)²⁷⁴

Notes:

See also:

[MNG homepage](#)²⁷⁵ [MNG specification](#)²⁷⁶

²⁶⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MRWReader.java>

²⁶⁹<http://www.dalibor.cz/files/MRW%20File%20Format.txt>

²⁷⁰<http://www.libpng.org/pub/mng/mngnews.html>

²⁷¹<http://sourceforge.net/projects/libmng/>

²⁷²<http://sourceforge.net/projects/libmng/files/libmng-testsuites/MNGsuite-1.0/MNGsuite.zip/download>

²⁷³<https://downloads.sourceforge.net/libmng/MNGsuite-20030305.zip>

²⁷⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/MNGReader.java>

²⁷⁵<http://www.libpng.org/pub/mng/>

²⁷⁶<http://www.libpng.org/pub/mng/spec>

18.80 Molecular Imaging

Extensions: .stp

Owner: Molecular Imaging Corp, San Diego CA (closed)

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Molecular Imaging*


We currently have:

- Pascal code that reads Molecular Imaging files (from ImageSXM)
- a few Molecular Imaging files

We would like to have:


- an official specification document
- more Molecular Imaging files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [MolecularImagingReader.java](#)²⁷⁷

Notes:

18.81 MRC (Medical Research Council)

Extensions: .mrc

Developer: [MRC Laboratory of Molecular Biology](#)²⁷⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *MRC (Medical Research Council)*

Sample Datasets:

- [golgi.mrc](#)²⁷⁹

We currently have:

- an [MRC specification document](#)²⁸⁰ (in HTML)

²⁷⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MolecularImagingReader.java>

²⁷⁸<http://www2.mrc-lmb.cam.ac.uk/>


²⁷⁹http://bio3d.colorado.edu/imod/files/imod_data.tar.gz

²⁸⁰http://ami.scripps.edu/software/mrctools/mrc_specification.php


- another MRC specification document²⁸¹ (in TXT)
- a few MRC datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [MRCReader.java](#)²⁸²

Notes:

Commercial applications that support MRC include:

- [Bitplane Imaris](#)²⁸³

See also:

[MRC on Wikipedia](#)²⁸⁴

18.82 NEF (Nikon Electronic Format)

Extensions: .nef, .tif

Developer: [Nikon](#)²⁸⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *NEF (Nikon Electronic Format)*

Sample Datasets:


- [neffile1.zip](#)²⁸⁶
- [Sample NEF images](#)²⁸⁷

We currently have:

- a NEF specification document (v0.1, from 2003, in PDF)
- several NEF datasets

We would like to have:

Ratings

Pixels: 

Metadata: 

²⁸¹http://bio3d.colorado.edu/imod/doc/mrc_format.txt

²⁸²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MRCReader.java>




²⁸³<http://www.bitplane.com/>

²⁸⁴http://en.wikipedia.org/wiki/MRC_%28file_format%29

²⁸⁵<http://www.nikon.com/>

²⁸⁶http://www.outbackphoto.com/workshop/NEF_conversion/neffile1.zip

²⁸⁷http://www.nikondigital.org/articles/library/nikon_d2x_first_impressions.htm

Openness: Presence: Utility: **Additional Information**Source Code: [NikonReader.java](#)²⁸⁸

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.**See also:**[NEF Conversion](#)²⁸⁹

18.83 NifTI

Extensions: .img, .hdr

Developer: [National Institutes of Health](#)²⁹⁰**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *NifTI*




Sample Datasets:

- [Official test data](#)²⁹¹

We currently have:

- [NifTI specification documents](#)²⁹²
- several NifTI datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [NiftiReader.java](#)²⁹³

Notes:

²⁸⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NikonReader.java>²⁸⁹http://www.outbackphoto.com/workshop/NEF_conversion/nefconversion.html²⁹⁰<http://www.nih.gov/>²⁹¹<http://nifti.nih.nih.gov/nifti-1/data>²⁹²<http://nifti.nih.nih.gov/nifti-1/>²⁹³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NiftiReader.java>


18.84 Nikon Elements TIFF

Extensions: .tiff

Developer: [Nikon](#)²⁹⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Nikon Elements TIFF*


We currently have:

- a few Nikon Elements TIFF files


We would like to have:


- more Nikon Elements TIFF files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [NikonElementsTiffReader.java](#)²⁹⁵

Notes:

18.85 Nikon EZ-C1 TIFF

Extensions: .tiff

Developer: [Nikon](#)²⁹⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Nikon EZ-C1 TIFF*

We currently have:

- a few Nikon EZ-C1 TIFF files

We would like to have:

Ratings


Pixels: 

Metadata: 

²⁹⁴<http://www.nikon.com>

²⁹⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NikonElementsTiffReader.java>

²⁹⁶<http://www.nikon.com/>

Openness: Presence: Utility: **Additional Information**Source Code: [NikonTiffReader.java](#)²⁹⁷

Notes:

18.86 Nikon NIS-Elements ND2

Extensions: .nd2

Developer: [Nikon USA](#)²⁹⁸**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *Nikon NIS-Elements ND2*

Freely Available Software:



- [NIS-Elements Viewer from Nikon](#)²⁹⁹

We currently have:

- many ND2 datasets

We would like to have:

- an official specification document

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [NativeND2Reader.java](#)³⁰⁰

Notes:

There are two distinct versions of ND2: an old version, which uses JPEG-2000 compression, and a new version which is either uncompressed or Zip-compressed. We are not aware of the version number or release date for either format.

Bio-Formats uses the [JAI Image I/O Tools](#)³⁰¹ library to read ND2 files compressed with JPEG-2000.

There is also an ND2 reader that uses Nikon's native libraries. To use it, you must be using Windows and have [Nikon's ND2 reader plugin for ImageJ](#)³⁰² installed. Additionally, you will need to download [LegacyND2Reader.dll](#)³⁰³ and place it in your ImageJ plugin folder.

²⁹⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NikonTiffReader.java>

²⁹⁸<http://www.nikonusa.com/>

²⁹⁹<http://www.nis-elements.com/resources-downloads.html>

³⁰⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NativeND2Reader.java>

³⁰¹<http://java.net/projects/jai-imageio>

³⁰²<http://rsb.info.nih.gov/ij/plugins/nd2-reader.html>

³⁰³<https://github.com/openmicroscopy/bioformats/blob/develop/lib/LegacyND2Reader.dll?raw=true>

18.87 NRRD (Nearly Raw Raster Data)

Extensions: .nrrd, .nhdr, .raw, .txt

Developer: Teem developers³⁰⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *NRRD (Nearly Raw Raster Data)*

Freely Available Software:

- [nrrd \(NRRD reference library\)](#)³⁰⁵

Sample Datasets:

- [Diffusion tensor MRI datasets](#)³⁰⁶

We currently have:


- [an nrrd specification document](#)³⁰⁷ (v1.9, from 2005 December 24, in HTML)
- a few nrrd datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [NRRDReader.java](#)³⁰⁸

Notes:


18.88 Olympus CellIR/APL

Extensions: .apl, .mtb, .tnb, .tif, .obsep

Owner: Olympus³⁰⁹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Olympus CellIR/APL*

³⁰⁴<http://teem.sourceforge.net/>

³⁰⁵<http://teem.sourceforge.net/nrrd/>

³⁰⁶<http://www.sci.utah.edu/%7Egk/DTI-data/>

³⁰⁷<http://teem.sourceforge.net/nrrd/format.html>

³⁰⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/NRRDReader.java>

³⁰⁹<http://www.olympus.com/>


We currently have:


- a few CellR datasets


We would like to have:


- more Cellr datasets
- an official specification document


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [APLReader.java](#)³¹⁰

Notes:

18.89 Olympus FluoView FV1000

Extensions: .oib, .oif

Owner: [Olympus](#)³¹¹

Support

SCIFIO: 

Export: 

Officially Supported Versions: 1.0, 2.0

Supported Metadata Fields: *Olympus FluoView FV1000*

Freely Available Software:

- [FV-Viewer from Olympus](#)³¹²


We currently have:

- an OIF specification document (v2.0.0.0, from 2008, in PDF)
- an FV1000 specification document (v1.0.0.0, from 2004 June 22, in PDF)
- older FV1000 specification documents (draft, in DOC and XLS)
- many FV1000 datasets

We would like to have:

- more OIB datasets (especially 2+ GB files)
- more FV1000 version 2 datasets

Ratings

Pixels: 


Metadata: 

Openness: 

³¹⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/APLReader.java>

³¹¹<http://www.olympus.com/>

³¹²http://www.olympus.co.uk/microscopy/22_FluoView_FV1000__Confocal_Microscope.htm

Presence: Utility: **Additional Information**Source Code: [FV1000Reader.java](#)³¹³

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

Bio-Formats uses a modified version of the [Apache Jakarta POI](#)³¹⁴ library to read OIB files. OIF stands for “Original Imaging Format”. OIB stands for “Olympus Image Binary”. OIF is a multi-file format that includes an .oif file and a directory of .tif, .roi, .pty, .lut, and .bmp files. OIB is a single file format.

Commercial applications that support this format include:

- [Bitplane Imaris](#)³¹⁵
- [SVI Huygens](#)³¹⁶

See also:[Olympus FluoView Resource Center](#)³¹⁷

18.90 Olympus FluoView TIFF

Extensions: .tif

Owner: [Olympus](#)³¹⁸**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *Olympus FluoView TIFF*




Freely Available Software:


- [DIMIN](#)³¹⁹

We currently have:

- a FluoView specification document (from 2002 November 14, in DOC)
- Olympus’ FluoView Image File Reference Suite (from 2002 March 1, in DOC)
- several FluoView datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: ³¹³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FV1000Reader.java>³¹⁴<http://jakarta.apache.org/poi/>³¹⁵<http://www.bitplane.com/>³¹⁶<http://svi.nl/>³¹⁷<http://www.olympusfluoview.com>³¹⁸<http://www.olympus.com/>³¹⁹<http://www.dimin.net/>

Utility: 

Additional Information

Source Code: [FluoviewReader.java](#)³²⁰

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

Commercial applications that support this format include:

- Bitplane Imaris³²¹
- SVI Huygens³²²

18.91 Olympus ScanR

Extensions: .xml, .dat, .tif

Developer: Olympus³²³

Owner: Olympus³²⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Olympus ScanR*

We currently have:

- several ScanR datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ScanrReader.java](#)³²⁵

Notes:

18.92 Olympus SIS TIFF

Extensions: .tiff

Developer: Olympus³²⁶

³²⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FluoviewReader.java>

³²¹<http://www.bitplane.com/>

³²²<http://svi.nl/>

³²³<http://www.olympus.com/>

³²⁴<http://www.olympus.com/>

³²⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ScanrReader.java>

³²⁶<http://www.olympus-sis.com/>

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *Olympus SIS TIFF*

We currently have:

- a few example SIS TIFF files

We would like to have:

Ratings

Pixels: 🟡

Metadata: 🟡

Openness: 🟡

Presence: 🟠

Utility: 🟡

Additional InformationSource Code: [SISReader.java](#)³²⁷

Notes:

18.93 OME-TIFF

Extensions: .ome.tiff

Developer: [Open Microscopy Environment](#)³²⁸**Support**

SCIFIO: ✅

Export: ✅

Officially Supported Versions: 2003FC, 2007-06, 2008-02, 2008-09, 2009-09, 2010-04, 2010-06, 2011-06, 2012-06, 2013-06

Supported Metadata Fields: *OME-TIFF*

We currently have:

- an *OME-TIFF* specification document³²⁹ (from 2006 October 19, in HTML)
- many *OME-TIFF* datasets
- the ability to produce additional datasets

We would like to have:

Ratings


Pixels: 🟢

Metadata: 🟢

Openness: 🟢

Presence: 🟠

³²⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SISReader.java>³²⁸<http://www.openmicroscopy.org/>³²⁹<http://www.openmicroscopy.org/site/support/ome-model/ome-tiff/specification.html>

Utility: 

Additional Information

Source Code: [OMETiffReader.java](#)³³⁰ Source Code: [OMETiffWriter.java](#)³³¹

Notes:

Bio-Formats can save image stacks as OME-TIFF.

Commercial applications that support OME-TIFF include:

- [Bitplane Imaris](#)³³²
- [SVI Huygens](#)³³³

See also:

[OME-TIFF technical overview](#)³³⁴

18.94 OME-XML

Extensions: .ome

Developer: [Open Microscopy Environment](#)³³⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions: 2003FC, 2007-06, 2008-02, 2008-09, 2009-09, 2010-04, 2010-06, 2011-06, 2012-06, 2013-06

Supported Metadata Fields: [OME-XML](#)

We currently have:

- [OME-XML specification documents](#)³³⁶
- many OME-XML datasets
- the ability to produce more datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [OMEXMLReader.java](#)³³⁷ Source Code: [OMEXMLWriter.java](#)³³⁸

Notes:

³³⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/OMETiffReader.java>

³³¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/OMETiffWriter.java>

³³²<http://www.bitplane.com/>

³³³<http://svi.nl/>

³³⁴<http://www.openmicroscopy.org/site/support/ome-model/ome-tiff/index.html>

³³⁵<http://www.openmicroscopy.org/>

³³⁶<http://www.openmicroscopy.org/Schemas/>

³³⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/OMEXMLReader.java>

³³⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/OMEXMLWriter.java>

Bio-Formats uses the [OME-XML Java library](#)³³⁹ to read OME-XML files.

Commercial applications that support OME-XML include:

- [Bitplane Imaris](#)³⁴⁰
- [SVI Huygens](#)³⁴¹

18.95 Oxford Instruments

Extensions: .top

Owner: [Oxford Instruments](#)³⁴²

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Oxford Instruments*


We currently have:

- Pascal code that can read Oxford Instruments files (from ImageSXM)
- a few Oxford Instruments files

We would like to have:


- an official specification document
- more Oxford Instruments files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [OxfordInstrumentsReader.java](#)³⁴³

Notes:

18.96 PCORAW

Extensions: .pcoraw, .rec

Developer: [PCO](#)³⁴⁴

Support

SCIFIO: 

³³⁹<http://www.openmicroscopy.org/site/support/ome-model/ome-xml/java-library.html>

³⁴⁰<http://www.bitplane.com/>

³⁴¹<http://svi.nl/>

³⁴²<http://www.oxinst.com>

³⁴³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/OxfordInstrumentsReader.java>

³⁴⁴<http://www.pco.de/>

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *PCORAW*

We currently have:

- a few example datasets

We would like to have:

Ratings

Pixels: ▲

Metadata: ◻

Openness: ▲

Presence: ▼

Utility: ◻

Additional Information

Source Code: [PCORAWReader.java](#)³⁴⁵

Notes:

18.97 PCX (PC Paintbrush)

Extensions: .pcx

Developer: ZSoft Corporation

Support

SCIFIO: ✔

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *PCX (PC Paintbrush)*

We currently have:

- several .pcx files
- the ability to generate additional .pcx file

We would like to have:

Ratings

Pixels: ▲

Metadata: ▼

Openness: ▼

Presence: ▼

Utility: ▼

Additional Information

Source Code: [PCXReader.java](#)³⁴⁶

Notes:

³⁴⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PCORAWReader.java>

³⁴⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/PCXReader.java>

Commercial applications that support PCX include [Zeiss LSM Image Browser](#)³⁴⁷.

18.98 Perkin Elmer Densitometer

Extensions: .pds

Developer: [Perkin Elmer](#)³⁴⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Perkin Elmer Densitometer*


We currently have:


- a few PDS datasets


We would like to have:


- an official specification document
- more PDS datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [PDSReader.java](#)³⁴⁹

Notes:


18.99 PerkinElmer Operetta

Extensions: .tiff, .xml

Developer: [PerkinElmer](#)³⁵⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *PerkinElmer Operetta*

We currently have:

- a few sample datasets

³⁴⁷[http://www.zeiss.de/C12567BE00472A5C/EmbedTitelIntern/LSMImageBrowser/\\$File/INST_IB.EXE](http://www.zeiss.de/C12567BE00472A5C/EmbedTitelIntern/LSMImageBrowser/$File/INST_IB.EXE)

³⁴⁸<http://www.perkinelmer.com>


³⁴⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PDSReader.java>


³⁵⁰<http://www.perkinelmer.com/>


We would like to have:


- an official specification document
- more sample datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [OperettaReader.java](#)³⁵¹

Notes:

18.100 PerkinElmer UltraView

Extensions: .tif, .2, .3, .4, etc.

Owner: [PerkinElmer](#)³⁵²

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *PerkinElmer UltraView*

We currently have:

- several UltraView datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [PerkinElmerReader.java](#)³⁵³

Notes:

Other associated extensions include: .tim, .zpo, .csv, .htm, .cfg, .ano, .rec

Commercial applications that support this format include:

- [Bitplane Imaris](#)³⁵⁴

³⁵¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/OperettaReader.java>

³⁵²<http://www.perkinelmer.com/>

³⁵³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PerkinElmerReader.java>

³⁵⁴<http://www.bitplane.com/>

- Image-Pro Plus³⁵⁵

See also:

PerkinElmer UltraView system overview³⁵⁶

18.101 PGM (Portable Gray Map)

Extensions: .pgm

Developer: Netpbm developers

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *PGM (Portable Gray Map)*

Freely Available Software:


- Netpbm graphics filter³⁵⁷

We currently have:

- a PGM specification document³⁵⁸ (from 2003 October 3, in HTML)
- a few PGM files


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: PGMReader.java³⁵⁹

Notes:

18.102 Adobe Photoshop PSD

Extensions: .psd

Developer: Adobe³⁶⁰

Support

SCIFIO: 

Export: 

³⁵⁵<http://www.mediacy.com/>

³⁵⁶<http://www.perkinelmer.com/pages/020/cellularimaging/products/ultraviewvoxsysteoverview.xhtml>

³⁵⁷<http://netpbm.sourceforge.net/>

³⁵⁸<http://netpbm.sourceforge.net/doc/pgm.html>

³⁵⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/PGMReader.java>

³⁶⁰<http://www.adobe.com/>

Officially Supported Versions: 1.0

Supported Metadata Fields: *Adobe Photoshop PSD*


We currently have:

- a PSD specification document (v3.0.4, 16 July 1995)
- a few PSD files


We would like to have:


- more PSD files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [PSDReader.java](#)³⁶¹

Notes:

18.103 Photoshop TIFF

Extensions: .tif, .tiff

Developer: [Adobe](#)³⁶²

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Photoshop TIFF*

We currently have:


- a Photoshop TIFF specification document
- a few Photoshop TIFF files

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

³⁶¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PSDReader.java>

³⁶²<http://www.adobe.com>

Source Code: [PhotoshopTiffReader.java](#)³⁶³

Notes:

18.104 PICT (Macintosh Picture)

Extensions: .pict

Developer: [Apple Computer](#)³⁶⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *PICT (Macintosh Picture)*

We currently have:

- many PICT datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [PictReader.java](#)³⁶⁵

Notes:

[QuickTime for Java](#)³⁶⁶ is required for reading vector files and some compressed files.

See also:

[PICT technical overview](#)³⁶⁷ [Another PICT technical overview](#)³⁶⁸

18.105 PNG (Portable Network Graphics)

Extensions: .png

Developer: [PNG Development Group](#)³⁶⁹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

³⁶³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PhotoshopTiffReader.java>

³⁶⁴<http://www.apple.com>

³⁶⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/PictReader.java>

³⁶⁶<http://www.apple.com/quicktime/download/standalone.html>

³⁶⁷<http://www.faqs.org/faqs/graphics/fileformats-faq/part3/section-107.html>

³⁶⁸<http://www.prepressure.com/formats/pict/fileformat.htm>

³⁶⁹<http://www.libpng.org/pub/png/pngnews.html>

Supported Metadata Fields: *PNG (Portable Network Graphics)*

Freely Available Software:


- PNG Writer plugin for ImageJ³⁷⁰

We currently have:


- a PNG specification document³⁷¹ (W3C/ISO/IEC version, from 2003 November 10, in HTML)
- several PNG datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: *APNGReader.java*³⁷²

Notes:

Bio-Formats uses the Java Image I/O³⁷³ API to read and write PNG files.

See also:

[PNG technical overview](#)³⁷⁴

18.106 Prairie Technologies TIFF

Extensions: .tif, .xml, .cfg

Developer: *Prairie Technologies*³⁷⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Prairie Technologies TIFF*

We currently have:


- many Prairie datasets

We would like to have:

Ratings

Pixels: 

Metadata: 

Openness: 

³⁷⁰<http://rsb.info.nih.gov/ij/plugins/png-writer.html>


³⁷¹<http://www.libpng.org/pub/png/spec/iso/>


³⁷²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/APNGReader.java>

³⁷³<http://docs.oracle.com/javase/6/docs/technotes/guides/imageio/>

³⁷⁴<http://www.libpng.org/pub/png/>

³⁷⁵<http://www.prairie-technologies.com/>

Presence: 

Utility: 

Additional Information

Source Code: [PrairieReader.java](#)³⁷⁶

Notes:

18.107 Quesant

Extensions: .afm

Developer: Quesant Instrument Corporation

Owner: [KLA-Tencor Corporation](#)³⁷⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Quesant*


We currently have:

- Pascal code that can read Quesant files (from ImageSXM)
- several Quesant files

We would like to have:

- an official specification document
- more Quesant files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [QuesantReader.java](#)³⁷⁸

Notes:

18.108 QuickTime Movie

Extensions: .mov

Owner: [Apple Computer](#)³⁷⁹

Support

³⁷⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PrairieReader.java>

³⁷⁷<http://www.kla-tencor.com/surface-profilometry-and-metrology.html>

³⁷⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/QuesantReader.java>

³⁷⁹<http://www.apple.com/>

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *QuickTime Movie*

Freely Available Software:

- [QuickTime Player](#)³⁸⁰


We currently have:

- a [QuickTime specification document](#)³⁸¹ (from 2001 March 1, in HTML)
- several QuickTime datasets
- the ability to produce more datasets


We would like to have:

- more QuickTime datasets, including:
 - files compressed with a common, unsupported codec
 - files with audio tracks and/or multiple video tracks


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [NativeQTReader.java](#)³⁸² Source Code: [QTWriter.java](#)³⁸³

Notes:

Bio-Formats has two modes of operation for QuickTime:

- QTJava mode requires [QuickTime](#)³⁸⁴ to be installed.
- Native mode works on systems with no QuickTime (e.g. Linux).

Bio-Formats can save image stacks as QuickTime movies. The following table shows supported codecs:

³⁸⁰<http://www.apple.com/quicktime/download/>

³⁸¹<http://developer.apple.com/documentation/Quicktime/QTF/>

³⁸²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/NativeQTReader.java>

³⁸³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/QTWriter.java>

³⁸⁴<http://www.apple.com/quicktime/download/>

Codec	Description	Native	QTJava
raw	Full Frames (Uncompressed)	read & write	read & write
iraw	Intel YUV Uncompressed	read only	read & write
rlc	Animation (run length encoded RGB)	read only	read & write
jpeg	Still Image JPEG DIB	read only	read only
rpza	Apple Video 16 bit “road pizza”	read only (partial)	read only
mjpb	Motion JPEG codec	read only	read only
cvid	Cinepak	•	read & write
svq1	Sorenson Video	•	read & write
svq3	Sorenson Video 3	•	read & write
mp4v	MPEG-4	•	read & write
h263	H.263	•	read & write

See also:

[QuickTime software overview](#)³⁸⁵

18.109 RHK

Extensions: .sm2, .sm3

Owner: [RHK Technologies](#)³⁸⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: [RHK](#)


We currently have:

- Pascal code that can read RHK files (from ImageSXM)
- a few RHK files

We would like to have:


- an official specification document
- more RHK files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

³⁸⁵<http://www.apple.com/quicktime/>

³⁸⁶<http://www.rhk-tech.com>

Additional Information

Source Code: [RHKReader.java](#)³⁸⁷

Notes:

18.110 SBIG

Owner: [Santa Barbara Instrument Group \(SBIG\)](#)³⁸⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *SBIG*


We currently have:

- an official SBIG specification document³⁸⁹
- a few SBIG files


We would like to have:


- more SBIG files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [SBIGReader.java](#)³⁹⁰

Notes:

18.111 Seiko

Extensions: .xqd, .xqf

Owner: [Seiko](#)³⁹¹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Seiko*

We currently have:

³⁸⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/RHKReader.java>

³⁸⁸<http://www.sbig.com>

³⁸⁹<http://sbig.impulse.net/pdffiles/file.format.pdf>

³⁹⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SBIGReader.java>


³⁹¹<http://www.seiko.co.jp/en/index.php>

- Pascal code that can read Seiko files (from ImageSXM)
- a few Seiko files


We would like to have:


- an official specification document
- more Seiko files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [SeikoReader.java](#)³⁹²

Notes:

18.112 SimplePCI & HImage

Extensions: .cxd

Developer: [Compix](#)³⁹³

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *SimplePCI & HImage*

We currently have:


- several SimplePCI files

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [PCIReader.java](#)³⁹⁴

Notes:

Bio-Formats uses a modified version of the [Apache Jakarta POI library](#)³⁹⁵ to read CXD files.

³⁹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SeikoReader.java>

³⁹³<http://hcimage.com>

³⁹⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PCIReader.java>

³⁹⁵<http://jakarta.apache.org/poi/>

See also:

[SimplePCI software overview](#)³⁹⁶

18.113 SimplePCI & HImage TIFF

Extensions: .tiff

Developer: [Hamamatsu](#)³⁹⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *SimplePCI & HImage TIFF*


We currently have:

- a few SimplePCI TIFF datasets

We would like to have:


- more SimplePCI TIFF datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [SimplePCITiffReader.java](#)³⁹⁸

Notes:

18.114 SM Camera

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *SM Camera*

We currently have:

- Pascal code that can read SM-Camera files (from ImageSXM)
- a few SM-Camera files

We would like to have:

- an official specification document


³⁹⁶<http://himage.com/simple-pci-legacy/>

³⁹⁷<http://himage.com/simple-pci-legacy/>


³⁹⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SimplePCITiffReader.java>


- more SM-Camera files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [SMCameraReader.java](#)³⁹⁹

Notes:

18.115 SPIDER

Extensions: .spi, .stk

Developer: [Wadsworth Center](#)⁴⁰⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *SPIDER*

Freely Available Software:


- [SPIDER](#)⁴⁰¹

We currently have:


- a few example datasets
- [official file format documentation](#)⁴⁰²


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [SpiderReader.java](#)⁴⁰³

Notes:

³⁹⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SMCameraReader.java>

⁴⁰⁰http://www.wadsworth.org/spider_doc/spider/docs/spider.html

⁴⁰¹http://www.wadsworth.org/spider_doc/spider/docs/spider.html

⁴⁰²http://www.wadsworth.org/spider_doc/spider/docs/image_doc.html

⁴⁰³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SpiderReader.java>


18.116 Targa

Extensions: .tga

Developer: Truevision⁴⁰⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Targa*

We currently have:


- a Targa specification document
- a few Targa files


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: *TargaReader.java*⁴⁰⁵

Notes:

18.117 Text

Extensions: .txt

Support

SCIFIO: 

Export: 


Officially Supported Versions:


Supported Metadata Fields: *Text*

We currently have:

We would like to have:

Ratings

Pixels: 


Metadata: 

Openness: 

Presence: 

⁴⁰⁴<http://www.truevision.com>

⁴⁰⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/TargaReader.java>

Utility: **Additional Information**Source Code: [TextReader.java](#)⁴⁰⁶

Notes:

Reads tabular pixel data produced by a variety of software.

18.118 TIFF (Tagged Image File Format)

Extensions: .tif

Developer: Aldus and Microsoft

Owner: [Adobe](#)⁴⁰⁷**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *TIFF (Tagged Image File Format)*



Sample Datasets:

- [LZW TIFF data gallery](#)⁴⁰⁸
- [Big TIFF](#)⁴⁰⁹

We currently have:

- a [TIFF specification document](#)⁴¹⁰ (v6.0, from 1992 June 3, in PDF)
- many TIFF datasets
- a few BigTIFF datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [TiffReader.java](#)⁴¹¹ Source Code: [TiffWriter.java](#)⁴¹²

Notes:

Bio-Formats can also read BigTIFF files (TIFF files larger than 4 GB). Bio-Formats can save image stacks as TIFF or BigTIFF.

See also:⁴⁰⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/TextReader.java>⁴⁰⁷<http://www.adobe.com>⁴⁰⁸http://marlin.life.utsa.edu/Data_Gallery.html⁴⁰⁹<http://tiffcentral.com/>⁴¹⁰<http://partners.adobe.com/asn/developer/PDFS/TN/TIFF6.pdf>⁴¹¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/TiffReader.java>⁴¹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/TiffWriter.java>

TIFF technical overview⁴¹³ BigTIFF technical overview⁴¹⁴

18.119 TillPhotonics TillVision

Extensions: .vws

Developer: TILL Photonics⁴¹⁵

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *TillPhotonics TillVision*


We currently have:

- several TillVision datasets


We would like to have:


- an official specification document


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [TillVisionReader.java](#)⁴¹⁶

Notes:

18.120 Topometrix

Extensions: .tfr, .ffr, .zfr, .zfp, .2fl

Owner: TopoMetrix (now Veeco)⁴¹⁷

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *Topometrix*

We currently have:

- Pascal code that reads Topometrix files (from ImageSXM)
- a few Topometrix files

⁴¹³<http://www.awaresystems.be/imaging/tiff/faq.html#q3>

⁴¹⁴<http://www.awaresystems.be/imaging/tiff/bigtiff.html>

⁴¹⁵<http://www.till-photonics.com/>

⁴¹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/TillVisionReader.java>


⁴¹⁷<http://www.veeco.com/>


We would like to have:


- an official specification document
- more Topometrix files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [TopometrixReader.java](#)⁴¹⁸

Notes:

18.121 Trestle

Extensions: .tif, .sld, .jpg

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Trestle*

Sample Datasets:


- [OpenSlide](#)⁴¹⁹

We currently have:


- a few example datasets
- [developer documentation from the OpenSlide project](#)⁴²⁰


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [TrestleReader.java](#)⁴²¹

Notes:

⁴¹⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/TopometrixReader.java>

⁴¹⁹<http://openslide.cs.cmu.edu/download/openslide-testdata/Trestle/>

⁴²⁰<http://openslide.org/Trestle%20format/>

⁴²¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/TrestleReader.java>

18.122 UBM

Extensions: .pr3

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *UBM*


We currently have:

- Pascal code that can read UBM files (from ImageSXM)
- one UBM file

We would like to have:

- an official specification document
- more UBM files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [UBMReader.java](https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/UBMReader.java)⁴²²

Notes:


18.123 Unisoku

Extensions: .dat, .hdr

Owner: [Unisoku](http://www.unisoku.com)⁴²³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Unisoku*

We currently have:

- Pascal code that can read Unisoku files (from ImageSXM)
- a few Unisoku files

We would like to have:

- an official specification document

⁴²²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/UBMReader.java>


⁴²³<http://www.unisoku.com>


- more Unisoku files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [UnisokuReader.java](#)⁴²⁴

Notes:

18.124 Varian FDF

Extensions: .fdf

Developer: [Varian, Inc.](#)⁴²⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Varian FDF*


We currently have:

- a few Varian FDF datasets


We would like to have:


- an official specification document
- more Varian FDF datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [VarianFDFReader.java](#)⁴²⁶

Notes:

⁴²⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/UnisokuReader.java>

⁴²⁵<http://www.varianinc.com>

⁴²⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VarianFDFReader.java>

18.125 VG SAM

Extensions: .dti

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *VG SAM*


We currently have:

- a few VG-SAM files


We would like to have:


- an official specification document
- more VG-SAM files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [VGSAMReader.java](#)⁴²⁷

Notes:

18.126 VisiTech XYS

Extensions: .xys, .html

Developer: [VisiTech International](#)⁴²⁸

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *VisiTech XYS*

We currently have:





- several VisiTech datasets

We would like to have:

- an official specification document

⁴²⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VGSAMReader.java>

⁴²⁸<http://www.visitech.co.uk/>

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [VisitechReader.java](#)⁴²⁹

Notes:

18.127 Volocity

Extensions: .mvd2

Developer: [PerkinElmer](#)⁴³⁰**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *Volocity*

Sample Datasets:



- [Volocity Demo](#)⁴³¹

We currently have:

- many example Volocity datasets

We would like to have:

- an official specification document
- any Volocity datasets that do not open correctly

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [VolocityReader.java](#)⁴³²

Notes:

.mvd2 files are [Metakit database files](#)⁴³³.⁴²⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VisitechReader.java>⁴³⁰<http://www.perkinelmer.com/pages/020/cellularimaging/products/volocity.xhtml>⁴³¹<http://www.perkinelmer.com/pages/020/cellularimaging/products/volocitydemo.xhtml>⁴³²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VolocityReader.java>⁴³³<http://equi4.com/metakit/>

18.128 Volocity Library Clipping

Extensions: .acff

Developer: PerkinElmer⁴³⁴

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *Volocity Library Clipping*


We currently have:

- several Volocity library clipping datasets

We would like to have:

- any datasets that do not open correctly
- an official specification document


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [VolocityClippingReader.java](#)⁴³⁵

Notes:

RGB .acff files are not yet supported. See [#6413](#)⁴³⁶.

18.129 WA-TOP

Extensions: .wat

Developer: WA Technology

Owner: Oxford Instruments⁴³⁷

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *WA-TOP*

We currently have:

- Pascal code that can read WA-TOP files (from ImageSXM)

⁴³⁴<http://www.perkinelmer.com/pages/020/cellularimaging/products/volocity.shtml>

⁴³⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VolocityClippingReader.java>

⁴³⁶<http://trac.openmicroscopy.org.uk/ome/ticket/6413>


⁴³⁷<http://www.oxinst.com>

- a few WA-TOP files


We would like to have:


- an official specification document
- more WA-TOP files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [WATOPReader.java](#)⁴³⁸

Notes:

18.130 Windows Bitmap

Extensions: .bmp

Developer: Microsoft and IBM

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Windows Bitmap*

Freely Available Software:


- [BMP Writer plugin for ImageJ](#)⁴³⁹

We currently have:


- many BMP datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [BMPReader.java](#)⁴⁴⁰

Notes:

⁴³⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/WATOPReader.java>

⁴³⁹<http://rsb.info.nih.gov/ij/plugins/bmp-writer.html>

⁴⁴⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/BMPReader.java>

Compressed BMP files are currently not supported.

See also:

[Technical Overview](#)⁴⁴¹ [General Resources](#)⁴⁴²

18.131 Woolz

Extensions: .wlz

Developer: [MRC Human Genetics Unit](#)⁴⁴³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Woolz*

Freely Available Software:


- [Woolz](#)⁴⁴⁴


We currently have:

- a few Woolz datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [WlzReader.java](#)⁴⁴⁵ Source Code: [WlzWriter.java](#)⁴⁴⁶

Notes:

18.132 Zeiss AxioVision TIFF

Extensions: .xml, .tiff

Developer: [Carl Zeiss MicroImaging GmbH](#)⁴⁴⁷

Owner: [Carl Zeiss MicroImaging GmbH](#)⁴⁴⁸

Support

SCIFIO: 

⁴⁴¹<http://www.faqs.org/faqs/graphics/fileformats-faq/part3/section-18.html>

⁴⁴²<http://people.sc.fsu.edu/~burkardt/data/bmp/bmp.html>

⁴⁴³http://www.emouseatlas.org/emap/analysis_tools_resources/software/woolz.html

⁴⁴⁴http://www.emouseatlas.org/emap/analysis_tools_resources/software/woolz.html

⁴⁴⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/WlzReader.java>

⁴⁴⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/out/WlzWriter.java>

⁴⁴⁷<http://www.zeiss.com/micro>

⁴⁴⁸<http://www.zeiss.com/micro>

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Zeiss AxioVision TIFF*

Freely Available Software:

- [Zeiss ZEN Lite](#)⁴⁴⁹


We currently have:

- many example datasets


We would like to have:


- an official specification document


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ZeissTIFFReader.java](#)⁴⁵⁰

Notes:

18.133 Zeiss AxioVision ZVI (Zeiss Vision Image)

Extensions: .zvi

Developer: [Carl Zeiss MicroImaging GmbH \(AxioVision\)](#)⁴⁵¹

Owner: [Carl Zeiss MicroImaging GmbH](#)⁴⁵²

Support

SCIFIO: 

Export: 

Officially Supported Versions: 1.0, 2.0

Supported Metadata Fields: *Zeiss AxioVision ZVI (Zeiss Vision Image)*

Freely Available Software:

- [Zeiss Axiovision LE](#)⁴⁵³

We currently have:

- a ZVI specification document (v2.0.5, from 2010 August, in PDF)
- an older ZVI specification document (v2.0.2, from 2006 August 23, in PDF)
- an older ZVI specification document (v2.0.1, from 2005 April 21, in PDF)
- an older ZVI specification document (v1.0.26.01.01, from 2001 January 29, in DOC)
- Zeiss' `ZvImageReader` code (v1.0, from 2001 January 25, in C++)

⁴⁴⁹http://microscopy.zeiss.com/microscopy/en_de/downloads/zen.html

⁴⁵⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ZeissTIFFReader.java>

⁴⁵¹<http://www.zeiss.com/axiovision>


⁴⁵²<http://www.zeiss.com/micro>

⁴⁵³<http://www.zeiss.de/c12567be0045acf1/Contents-Frame/cbe917247da02a1cc1256e0000491172>


- many ZVI datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ZeissZVIReader.java](#)⁴⁵⁴

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

Bio-Formats uses a modified version of the [Apache Jakarta POI library](#)⁴⁵⁵ to read ZVI files.

Commercial applications that support ZVI include [Bitplane Imaris](#)⁴⁵⁶.

See also:

[Axiovision software overview](#)⁴⁵⁷

18.134 Zeiss CZI

Extensions: .czi

Developer: [Carl Zeiss MicroImaging GmbH](#)⁴⁵⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Zeiss CZI*

Freely Available Software:

- [Zeiss ZEN 2011](#)⁴⁵⁹

We currently have:


- many example datasets
- official specification documents

We would like to have:

Ratings

Pixels: 

Metadata: 

Openness: 

⁴⁵⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ZeissZVIReader.java>



⁴⁵⁵<http://jakarta.apache.org/poi/>

⁴⁵⁶<http://www.bitplane.com/>

⁴⁵⁷<http://www.zeiss.com/C12567BE0045ACF1/ContentsWWWIntern/668C9FDCBB18C6E2412568C10045A72E>

⁴⁵⁸<http://www.zeiss.com/micro>

⁴⁵⁹<http://www.zeiss.de/C12567BE0045ACF1/Contents-Frame/A57B6AE510CE8FF1C12578FE002A725D>

Presence: Utility: **Additional Information**Source Code: [ZeissCZIReader.java](#)⁴⁶⁰

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

18.135 Zeiss LSM (Laser Scanning Microscope) 510/710

Extensions: .lsm, .mdb

Owner: [Carl Zeiss MicroImaging GmbH](#)⁴⁶¹**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *Zeiss LSM (Laser Scanning Microscope) 510/710*




Freely Available Software:

- [Zeiss LSM Image Browser](#)⁴⁶²
- [LSM Toolbox plugin for ImageJ](#)⁴⁶³
- [LSM Reader plugin for ImageJ](#)⁴⁶⁴
- [DIMIN](#)⁴⁶⁵

We currently have:

- LSM specification v3.2, from 2003 March 12, in PDF
- LSM specification v5.5, from 2009 November 23, in PDF
- LSM specification v6.0, from 2010 September 28, in PDF
- many LSM datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [ZeissLSMReader.java](#)⁴⁶⁶

Notes:

⁴⁶⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ZeissCZIReader.java>⁴⁶¹<http://www.zeiss.com/micro>⁴⁶²[http://www.zeiss.de/C12567BE00472A5C/EmbedTitelIntern/LSMImageBrowser/\\$File/INST_IB.EXE](http://www.zeiss.de/C12567BE00472A5C/EmbedTitelIntern/LSMImageBrowser/$File/INST_IB.EXE)⁴⁶³<http://imagejdocu.tudor.lu/Members/ppirrotte/lsmttoolbox>⁴⁶⁴<http://rsb.info.nih.gov/ij/plugins/lsm-reader.html>⁴⁶⁵<http://www.dimin.net/>⁴⁶⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ZeissLSMReader.java>

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

Bio-Formats uses the [MDB Tools Java port](#)⁴⁶⁷

Commercial applications that support this format include:

- [SVI Huygens](#)⁴⁶⁸
- [Bitplane Imaris](#)⁴⁶⁹
- [Amira](#)⁴⁷⁰
- [Image-Pro Plus](#)⁴⁷¹

⁴⁶⁷<http://mdbtools.sourceforge.net/>

⁴⁶⁸<http://www2.svi.nl/>

⁴⁶⁹<http://www.bitplane.com/>

⁴⁷⁰<http://www.amira.com/>

⁴⁷¹<http://www.mediacy.com/>

SUMMARY OF SUPPORTED METADATA FIELDS

19.1 Format readers

Format	Supported	Unsupported	Partial	Unknown/Missing
<i>AFIReader</i>	23	0	0	452
<i>AIMReader</i>	22	0	0	453
<i>APLReader</i>	21	0	0	454
<i>APNGReader</i>	19	0	0	456
<i>ARFReader</i>	19	0	0	456
<i>AVIReader</i>	19	0	0	456
<i>AliconaReader</i>	33	0	0	442
<i>AmiraReader</i>	22	0	0	453
<i>AnalyzeReader</i>	24	0	0	451
<i>BDReader</i>	57	0	0	418
<i>BIFormatReader</i>	19	0	0	456
<i>BMPReader</i>	21	0	0	454
<i>BaseTiffReader</i>	28	0	0	447
<i>BaseZeissReader</i>	83	0	0	392
<i>BioRadGelReader</i>	21	0	0	454
<i>BioRadReader</i>	40	0	0	435
<i>BioRadSCNReader</i>	29	0	0	446
<i>BrukerReader</i>	23	0	0	452
<i>BurleighReader</i>	22	0	0	453
<i>CanonRawReader</i>	19	0	0	456
<i>CellSensReader</i>	19	0	0	456
<i>CellVoyagerReader</i>	34	0	0	441
<i>CellWorxReader</i>	45	0	0	430
<i>CellomicsReader</i>	31	0	0	444
<i>DNGReader</i>	19	0	0	456
<i>DeltavisionReader</i>	52	0	0	423
<i>DicomReader</i>	23	0	0	452
<i>EPSReader</i>	19	0	0	456
<i>Ecat7Reader</i>	23	0	0	452
<i>FEIReader</i>	19	0	0	456
<i>FEITiffReader</i>	39	0	0	436
<i>FV1000Reader</i>	109	0	0	366
<i>FakeReader</i>	21	0	0	454
<i>FitsReader</i>	19	0	0	456
<i>FlexReader</i>	69	0	0	406
<i>FluoviewReader</i>	49	0	0	426
<i>FujiReader</i>	23	0	0	452
<i>GIFReader</i>	19	0	0	456
<i>GatanDM2Reader</i>	30	0	0	445
<i>GatanReader</i>	36	0	0	439
<i>GelReader</i>	21	0	0	454
<i>HISReader</i>	27	0	0	448

Continued on next page

Table 19.1 – continued from previous page

Format	Supported	Unsupported	Partial	Unknown/Missing
<i>HRDGDFReader</i>	21	0	0	454
<i>HamamatsuVMSReader</i>	26	0	0	449
<i>HitachiReader</i>	31	0	0	444
<i>ICSReader</i>	72	0	0	403
<i>IMODReader</i>	44	0	0	431
<i>INRReader</i>	22	0	0	453
<i>IPLabReader</i>	31	0	0	444
<i>IPWReader</i>	20	0	0	455
<i>ImaconReader</i>	23	0	0	452
<i>ImageIOReader</i>	19	0	0	456
<i>ImagicReader</i>	22	0	0	453
<i>ImarisHDFReader</i>	23	0	0	452
<i>ImarisReader</i>	32	0	0	443
<i>ImarisTiffReader</i>	23	0	0	452
<i>ImprovisionTiffReader</i>	25	0	0	450
<i>InspectorReader</i>	19	0	0	456
<i>InCell3000Reader</i>	19	0	0	456
<i>InCellReader</i>	67	0	0	408
<i>InveonReader</i>	30	0	0	445
<i>IvisionReader</i>	34	0	0	441
<i>JEOLReader</i>	19	0	0	456
<i>JPEG2000Reader</i>	19	0	0	456
<i>JPEGReader</i>	19	0	0	456
<i>JPKReader</i>	19	0	0	456
<i>JPXReader</i>	19	0	0	456
<i>KhorosReader</i>	19	0	0	456
<i>KodakReader</i>	26	0	0	449
<i>L2DReader</i>	29	0	0	446
<i>LEOReader</i>	27	0	0	448
<i>LIFReader</i>	85	0	0	390
<i>LIMReader</i>	19	0	0	456
<i>LegacyND2Reader</i>	19	0	0	456
<i>LegacyQTReader</i>	19	0	0	456
<i>LeicaReader</i>	56	0	0	419
<i>LeicaSCNReader</i>	33	0	0	442
<i>LiFlimReader</i>	25	0	0	450
<i>MIASReader</i>	64	0	0	411
<i>MINCReader</i>	23	0	0	452
<i>MNGReader</i>	19	0	0	456
<i>MRCReader</i>	22	0	0	453
<i>MRWReader</i>	19	0	0	456
<i>MetamorphReader</i>	43	0	0	432
<i>MetamorphTiffReader</i>	38	0	0	437
<i>MicromanagerReader</i>	38	0	0	437
<i>MinimalTiffReader</i>	19	0	0	456
<i>MolecularImagingReader</i>	21	0	0	454
<i>NAFReader</i>	19	0	0	456
<i>ND2Reader</i>	19	0	0	456
<i>NDPIReader</i>	21	0	0	454
<i>NDPISReader</i>	19	0	0	456
<i>NRRDReader</i>	22	0	0	453
<i>NativeND2Reader</i>	52	0	0	423
<i>NativeQTReader</i>	19	0	0	456
<i>NiftiReader</i>	24	0	0	451
<i>NikonElementsTiffReader</i>	50	0	0	425
<i>NikonReader</i>	19	0	0	456
<i>NikonTiffReader</i>	47	0	0	428
<i>OBFReader</i>	19	0	0	456

Continued on next page

Table 19.1 – continued from previous page

Format	Supported	Unsupported	Partial	Unknown/Missing
<i>OMETiffReader</i>	19	0	0	456
<i>OMEXMLReader</i>	19	0	0	456
<i>OpenlabRawReader</i>	19	0	0	456
<i>OpenlabReader</i>	32	0	0	443
<i>OperettaReader</i>	43	0	0	432
<i>OxfordInstrumentsReader</i>	22	0	0	453
<i>PCIReader</i>	29	0	0	446
<i>PCORAWReader</i>	26	0	0	449
<i>PCXReader</i>	19	0	0	456
<i>PDSReader</i>	23	0	0	452
<i>PGMReader</i>	19	0	0	456
<i>PSDReader</i>	19	0	0	456
<i>PerkinElmerReader</i>	30	0	0	445
<i>PhotoshopTiffReader</i>	19	0	0	456
<i>PictReader</i>	19	0	0	456
<i>PovrayReader</i>	19	0	0	456
<i>PrairieReader</i>	45	0	0	430
<i>PyramidTiffReader</i>	19	0	0	456
<i>QTReader</i>	19	0	0	456
<i>QuesantReader</i>	22	0	0	453
<i>RHKReader</i>	22	0	0	453
<i>SBIGReader</i>	22	0	0	453
<i>SDTReader</i>	19	0	0	456
<i>SEQReader</i>	19	0	0	456
<i>SIFReader</i>	20	0	0	455
<i>SISReader</i>	33	0	0	442
<i>SMCameraReader</i>	19	0	0	456
<i>SVSReader</i>	22	0	0	453
<i>ScanrReader</i>	43	0	0	432
<i>ScreenReader</i>	34	0	0	441
<i>SeikoReader</i>	22	0	0	453
<i>SimplePCITiffReader</i>	33	0	0	442
<i>SlidebookReader</i>	34	0	0	441
<i>SlidebookTiffReader</i>	30	0	0	445
<i>SpiderReader</i>	21	0	0	454
<i>TCSReader</i>	22	0	0	453
<i>TargaReader</i>	20	0	0	455
<i>TextReader</i>	19	0	0	456
<i>TiffDelegateReader</i>	19	0	0	456
<i>TiffJAIRReader</i>	19	0	0	456
<i>TiffReader</i>	22	0	0	453
<i>TileJPEGReader</i>	19	0	0	456
<i>TillVisionReader</i>	22	0	0	453
<i>TopometrixReader</i>	22	0	0	453
<i>TrestleReader</i>	26	0	0	449
<i>UBMReader</i>	19	0	0	456
<i>UnisokuReader</i>	22	0	0	453
<i>VGSAMReader</i>	19	0	0	456
<i>VarianFDFReader</i>	25	0	0	450
<i>VisitechReader</i>	19	0	0	456
<i>VolocityClippingReader</i>	19	0	0	456
<i>VolocityReader</i>	37	0	0	438
<i>WATOPReader</i>	22	0	0	453
<i>WlzReader</i>	26	0	0	449
<i>ZeissCZIRReader</i>	157	0	0	318
<i>ZeissLSMReader</i>	101	0	0	374
<i>ZeissTIFFReader</i>	19	0	0	456
<i>ZeissZVIReader</i>	19	0	0	456

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Table 19.1 – continued from previous page

Format	Supported	Unsupported	Partial	Unknown/Missing
<i>ZipReader</i>	19	0	0	456

19.2 Metadata fields

Field	Supported	Unsupported	Partial	Unknown/Missing
Arc - ID ¹	0	0	0	159
Arc - LotNumber ²	1	0	0	158
Arc - Manufacturer ³	1	0	0	158
Arc - Model ⁴	1	0	0	158
Arc - Power ⁵	1	0	0	158
Arc - SerialNumber ⁶	1	0	0	158
Arc - Type ⁷	0	0	0	159
BooleanAnnotation - AnnotationRef ⁸	0	0	0	159
BooleanAnnotation - Description ⁹	0	0	0	159
BooleanAnnotation - ID ¹⁰	0	0	0	159
BooleanAnnotation - Namespace ¹¹	0	0	0	159
BooleanAnnotation - Value ¹²	0	0	0	159
Channel - AcquisitionMode ¹³	4	0	0	155
Channel - AnnotationRef ¹⁴	0	0	0	159
Channel - Color ¹⁵	8	0	0	151
Channel - ContrastMethod ¹⁶	0	0	0	159
Channel - EmissionWavelength ¹⁷	16	0	0	143
Channel - ExcitationWavelength ¹⁸	17	0	0	142
Channel - FilterSetRef ¹⁹	0	0	0	159
Channel - Fluor ²⁰	1	0	0	158
Channel - ID ²¹	159	0	0	0

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¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power

⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Arc_Type

⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID

⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Description

¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID

¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace

¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#BooleanAnnotation_Value

¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_AcquisitionMode

¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID

¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Color

¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ContrastMethod

¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterSetRef_ID

²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Fluor

²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Channel - IlluminationType ²²	3	0	0	156
Channel - LightSourceSettingsAttenuation ²³	1	0	0	158
Channel - LightSourceSettingsID ²⁴	5	0	0	154
Channel - LightSourceSettingsWavelength ²⁵	2	0	0	157
Channel - NDFilter ²⁶	2	0	0	157
Channel - Name ²⁷	31	0	0	128
Channel - PinholeSize ²⁸	10	0	0	149
Channel - PockelCellSetting ²⁹	0	0	0	159
Channel - SamplesPerPixel ³⁰	159	0	0	0
CommentAnnotation - AnnotationRef ³¹	0	0	0	159
CommentAnnotation - Description ³²	0	0	0	159
CommentAnnotation - ID ³³	0	0	0	159
CommentAnnotation - Namespace ³⁴	0	0	0	159
CommentAnnotation - Value ³⁵	0	0	0	159
Dataset - AnnotationRef ³⁶	0	0	0	159
Dataset - Description ³⁷	0	0	0	159
Dataset - ExperimenterGroupRef ³⁸	0	0	0	159
Dataset - ExperimenterRef ³⁹	0	0	0	159
Dataset - ID ⁴⁰	0	0	0	159
Dataset - ImageRef ⁴¹	0	0	0	159
Dataset - Name ⁴²	0	0	0	159

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²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_IlluminationType²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_Attenuation²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_ID²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_Wavelength²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_NDFilter²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PockelCellSetting³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Description³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#CommentAnnotation_Value³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dataset_Description³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterGroupRef_ID³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dataset_ID⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dataset_Name

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Detector - AmplificationGain ⁴³	2	0	0	157
Detector - Gain ⁴⁴	5	0	0	154
Detector - ID ⁴⁵	34	0	0	125
Detector - LotNumber ⁴⁶	1	0	0	158
Detector - Manufacturer ⁴⁷	4	0	0	155
Detector - Model ⁴⁸	13	0	0	146
Detector - Offset ⁴⁹	5	0	0	154
Detector - SerialNumber ⁵⁰	3	0	0	156
Detector - Type ⁵¹	27	0	0	132
Detector - Voltage ⁵²	2	0	0	157
Detector - Zoom ⁵³	4	0	0	155
DetectorSettings - Binning ⁵⁴	17	0	0	142
DetectorSettings - Gain ⁵⁵	19	0	0	140
DetectorSettings - ID ⁵⁶	32	0	0	127
DetectorSettings - Offset ⁵⁷	8	0	0	151
DetectorSettings - ReadOutRate ⁵⁸	5	0	0	154
DetectorSettings - Voltage ⁵⁹	6	0	0	153
Dichroic - ID ⁶⁰	6	0	0	153
Dichroic - LotNumber ⁶¹	1	0	0	158
Dichroic - Manufacturer ⁶²	1	0	0	158
Dichroic - Model ⁶³	6	0	0	153
Dichroic - SerialNumber ⁶⁴	1	0	0	158
DoubleAnnotation - AnnotationRef ⁶⁵	0	0	0	159

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⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_AmplificationGain⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Gain⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Offset⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Voltage⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Zoom⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Offset⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ReadOutRate⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Voltage⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dichroic_ID⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
DoubleAnnotation - Description ⁶⁶	0	0	0	159
DoubleAnnotation - ID ⁶⁷	0	0	0	159
DoubleAnnotation - Namespace ⁶⁸	0	0	0	159
DoubleAnnotation - Value ⁶⁹	0	0	0	159
Ellipse - FillColor ⁷⁰	0	0	0	159
Ellipse - FillRule ⁷¹	0	0	0	159
Ellipse - FontFamily ⁷²	0	0	0	159
Ellipse - FontSize ⁷³	2	0	0	157
Ellipse - FontStyle ⁷⁴	0	0	0	159
Ellipse - ID ⁷⁵	5	0	0	154
Ellipse - LineCap ⁷⁶	0	0	0	159
Ellipse - Locked ⁷⁷	0	0	0	159
Ellipse - RadiusX ⁷⁸	5	0	0	154
Ellipse - RadiusY ⁷⁹	5	0	0	154
Ellipse - StrokeColor ⁸⁰	0	0	0	159
Ellipse - StrokeDashArray ⁸¹	0	0	0	159
Ellipse - StrokeWidth ⁸²	2	0	0	157
Ellipse - Text ⁸³	3	0	0	156
Ellipse - TheC ⁸⁴	0	0	0	159
Ellipse - TheT ⁸⁵	2	0	0	157
Ellipse - TheZ ⁸⁶	2	0	0	157
Ellipse - Transform ⁸⁷	2	0	0	157
Ellipse - Visible ⁸⁸	0	0	0	159
Ellipse - X ⁸⁹	5	0	0	154
Ellipse - Y ⁹⁰	5	0	0	154
Experiment - Description ⁹¹	1	0	0	158

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⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Description⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#DoubleAnnotation_Value⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillColor⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillRule⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontFamily⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontStyle⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_LineCap⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Locked⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusX⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusY⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheC⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Visible⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_X⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_Y⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_Description

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Experiment - ExperimentRef ⁹²	0	0	0	159
Experiment - ID ⁹³	5	0	0	154
Experiment - Type ⁹⁴	5	0	0	154
Experimenter - AnnotationRef ⁹⁵	0	0	0	159
Experimenter - Email ⁹⁶	2	0	0	157
Experimenter - FirstName ⁹⁷	5	0	0	154
Experimenter - ID ⁹⁸	11	0	0	148
Experimenter - Institution ⁹⁹	4	0	0	155
Experimenter - LastName ¹⁰⁰	9	0	0	150
Experimenter - MiddleName ¹⁰¹	1	0	0	158
Experimenter - UserName ¹⁰²	3	0	0	156
ExperimenterGroup - AnnotationRef ¹⁰³	0	0	0	159
ExperimenterGroup - Description ¹⁰⁴	0	0	0	159
ExperimenterGroup - ExperimentRef ¹⁰⁵	0	0	0	159
ExperimenterGroup - ID ¹⁰⁶	0	0	0	159
ExperimenterGroup - Leader ¹⁰⁷	0	0	0	159
ExperimenterGroup - Name ¹⁰⁸	0	0	0	159
Filament - ID ¹⁰⁹	0	0	0	159
Filament - LotNumber ¹¹⁰	1	0	0	158
Filament - Manufacturer ¹¹¹	1	0	0	158
Filament - Model ¹¹²	1	0	0	158
Filament - Power ¹¹³	1	0	0	158

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⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_ID⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_Type⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_Email⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_FirstName⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_Institution¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_LastName¹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_MiddleName¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_UserName¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterGroup_Description¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterGroup_ID¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Leader_ID¹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterGroup_Name¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer¹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Filament - Serial-Number ¹¹⁴	1	0	0	158
Filament - Type ¹¹⁵	0	0	0	159
FileAnnotation - AnnotationRef ¹¹⁶	0	0	0	159
FileAnnotation - Description ¹¹⁷	0	0	0	159
FileAnnotation - ID ¹¹⁸	0	0	0	159
FileAnnotation - Namespace ¹¹⁹	0	0	0	159
Filter - Filter-Wheel ¹²⁰	2	0	0	157
Filter - ID ¹²¹	8	0	0	151
Filter - LotNumber ¹²²	1	0	0	158
Filter - Manufacturer ¹²³	1	0	0	158
Filter - Model ¹²⁴	8	0	0	151
Filter - SerialNumber ¹²⁵	1	0	0	158
Filter - Type ¹²⁶	2	0	0	157
FilterSet - DichroicRef ¹²⁷	2	0	0	157
FilterSet - Emission-FilterRef ¹²⁸	2	0	0	157
FilterSet - ExcitationFilterRef ¹²⁹	2	0	0	157
FilterSet - ID ¹³⁰	2	0	0	157
FilterSet - LotNumber ¹³¹	1	0	0	158
FilterSet - Manufacturer ¹³²	1	0	0	158
FilterSet - Model ¹³³	2	0	0	157
FilterSet - Serial-Number ¹³⁴	1	0	0	158
Image - Acquisition-Date ¹³⁵	159	0	0	0

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¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filament_Type¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Description¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace¹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_FilterWheel¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_ID¹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber¹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer¹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model¹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber¹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_Type¹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DichroicRef_ID¹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID¹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID¹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterSet_ID¹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber¹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer¹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model¹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber¹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Image - Annotation-Ref ¹³⁶	0	0	0	159
Image - Description ¹³⁷	43	0	0	116
Image - ExperimentRef ¹³⁸	2	0	0	157
Image - ExperimenterGroupRef ¹³⁹	0	0	0	159
Image - ExperimenterRef ¹⁴⁰	6	0	0	153
Image - ID ¹⁴¹	159	0	0	0
Image - InstrumentRef ¹⁴²	41	0	0	118
Image - Microbeam-ManipulationRef ¹⁴³	0	0	0	159
Image - Name ¹⁴⁴	159	0	0	0
Image - ROIRef ¹⁴⁵	11	0	0	148
ImagingEnvironment - AirPressure ¹⁴⁶	1	0	0	158
ImagingEnvironment - CO2Percent ¹⁴⁷	1	0	0	158
ImagingEnvironment - Humidity ¹⁴⁸	1	0	0	158
ImagingEnvironment - Temperature ¹⁴⁹	10	0	0	149
Instrument - ID ¹⁵⁰	46	0	0	113
Label - FillColor ¹⁵¹	0	0	0	159
Label - FillRule ¹⁵²	0	0	0	159
Label - FontFamily ¹⁵³	0	0	0	159
Label - FontSize ¹⁵⁴	2	0	0	157
Label - FontStyle ¹⁵⁵	0	0	0	159
Label - ID ¹⁵⁶	3	0	0	156
Label - LineCap ¹⁵⁷	0	0	0	159
Label - Locked ¹⁵⁸	0	0	0	159
Label - StrokeColor ¹⁵⁹	0	0	0	159

Continued on next page

¹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID¹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description¹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimentRef_ID¹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterGroupRef_ID¹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID¹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID¹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID¹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#MicrobeamManipulationRef_ID¹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name¹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID¹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_AirPressure¹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_CO2Percent¹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Humidity¹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature¹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID¹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillColor¹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillRule¹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontFamily¹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize¹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontStyle¹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID¹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_LineCap¹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Locked¹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Label - StrokeDashArray ¹⁶⁰	0	0	0	159
Label - StrokeWidth ¹⁶¹	2	0	0	157
Label - Text ¹⁶²	3	0	0	156
Label - TheC ¹⁶³	0	0	0	159
Label - TheT ¹⁶⁴	0	0	0	159
Label - TheZ ¹⁶⁵	0	0	0	159
Label - Transform ¹⁶⁶	0	0	0	159
Label - Visible ¹⁶⁷	0	0	0	159
Label - X ¹⁶⁸	3	0	0	156
Label - Y ¹⁶⁹	3	0	0	156
Laser - Frequency-Multiplication ¹⁷⁰	0	0	0	159
Laser - ID ¹⁷¹	9	0	0	150
Laser - Laser-Medium ¹⁷²	8	0	0	151
Laser - LotNumber ¹⁷³	1	0	0	158
Laser - Manufacturer ¹⁷⁴	2	0	0	157
Laser - Model ¹⁷⁵	4	0	0	155
Laser - PockelCell ¹⁷⁶	0	0	0	159
Laser - Power ¹⁷⁷	3	0	0	156
Laser - Pulse ¹⁷⁸	0	0	0	159
Laser - Pump ¹⁷⁹	0	0	0	159
Laser - Repetition-Rate ¹⁸⁰	1	0	0	158
Laser - SerialNumber ¹⁸¹	1	0	0	158
Laser - Tuneable ¹⁸²	0	0	0	159
Laser - Type ¹⁸³	8	0	0	151
Laser - Wavelength ¹⁸⁴	7	0	0	152
LightEmittingDiode - ID ¹⁸⁵	0	0	0	159

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¹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray¹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth¹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text¹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheC¹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT¹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ¹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform¹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Visible¹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Label_X¹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Label_Y¹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_FrequencyMultiplication¹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID¹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_LaserMedium¹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber¹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer¹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model¹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_PockelCell¹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power¹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Pulse¹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pump_ID¹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_RepetitionRate¹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber¹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Tuneable¹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Type¹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Wavelength¹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
LightEmittingDiode - LotNumber ¹⁸⁶	1	0	0	158
LightEmittingDiode - Manufacturer ¹⁸⁷	1	0	0	158
LightEmittingDiode - Model ¹⁸⁸	1	0	0	158
LightEmittingDiode - Power ¹⁸⁹	1	0	0	158
LightEmittingDiode - SerialNumber ¹⁹⁰	1	0	0	158
LightPath - DichroicRef ¹⁹¹	3	0	0	156
LightPath - EmissionFilterRef ¹⁹²	5	0	0	154
LightPath - ExcitationFilterRef ¹⁹³	1	0	0	158
Line - FillColor ¹⁹⁴	0	0	0	159
Line - FillRule ¹⁹⁵	0	0	0	159
Line - FontFamily ¹⁹⁶	0	0	0	159
Line - FontSize ¹⁹⁷	2	0	0	157
Line - FontStyle ¹⁹⁸	0	0	0	159
Line - ID ¹⁹⁹	5	0	0	154
Line - LineCap ²⁰⁰	0	0	0	159
Line - Locked ²⁰¹	0	0	0	159
Line - MarkerEnd ²⁰²	0	0	0	159
Line - MarkerStart ²⁰³	0	0	0	159
Line - StrokeColor ²⁰⁴	0	0	0	159
Line - StrokeDashArray ²⁰⁵	0	0	0	159
Line - StrokeWidth ²⁰⁶	2	0	0	157
Line - Text ²⁰⁷	2	0	0	157
Line - TheC ²⁰⁸	0	0	0	159
Line - TheT ²⁰⁹	1	0	0	158
Line - TheZ ²¹⁰	1	0	0	158
Line - Transform ²¹¹	1	0	0	158

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- ¹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber
- ¹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer
- ¹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model
- ¹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power
- ¹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber
- ¹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DichroicRef_ID
- ¹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID
- ¹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID
- ¹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillColor
- ¹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillRule
- ¹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontFamily
- ¹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize
- ¹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontStyle
- ¹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID
- ²⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_LineCap
- ²⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Locked
- ²⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_MarkerEnd
- ²⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_MarkerStart
- ²⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor
- ²⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray
- ²⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth
- ²⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text
- ²⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheC
- ²⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT
- ²¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ
- ²¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Line - Visible ²¹²	0	0	0	159
Line - X1 ²¹³	5	0	0	154
Line - X2 ²¹⁴	5	0	0	154
Line - Y1 ²¹⁵	5	0	0	154
Line - Y2 ²¹⁶	5	0	0	154
ListAnnotation - AnnotationRef ²¹⁷	0	0	0	159
ListAnnotation - Description ²¹⁸	0	0	0	159
ListAnnotation - ID ²¹⁹	0	0	0	159
ListAnnotation - Namespace ²²⁰	0	0	0	159
LongAnnotation - AnnotationRef ²²¹	0	0	0	159
LongAnnotation - Description ²²²	0	0	0	159
LongAnnotation - ID ²²³	0	0	0	159
LongAnnotation - Namespace ²²⁴	0	0	0	159
LongAnnotation - Value ²²⁵	0	0	0	159
Mask - FillColor ²²⁶	1	0	0	158
Mask - FillRule ²²⁷	0	0	0	159
Mask - FontFamily ²²⁸	0	0	0	159
Mask - FontSize ²²⁹	0	0	0	159
Mask - Height ²³⁰	2	0	0	157
Mask - ID ²³¹	2	0	0	157
Mask - LineCap ²³²	0	0	0	159
Mask - Locked ²³³	0	0	0	159
Mask - StrokeColor ²³⁴	1	0	0	158
Mask - StrokeDashArray ²³⁵	0	0	0	159

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²¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Visible²¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X1²¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X2²¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y1²¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y2²¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID²¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Description²¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID²²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace²²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID²²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Description²²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID²²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace²²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#LongAnnotation_Value²²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillColor²²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillRule²²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontFamily²²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize²³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_Height²³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID²³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_LineCap²³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Locked²³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor²³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Mask - StrokeWidth ²³⁶	0	0	0	159
Mask - Text ²³⁷	0	0	0	159
Mask - TheC ²³⁸	0	0	0	159
Mask - TheT ²³⁹	0	0	0	159
Mask - TheZ ²⁴⁰	0	0	0	159
Mask - Transform ²⁴¹	0	0	0	159
Mask - Visible ²⁴²	0	0	0	159
Mask - Width ²⁴³	2	0	0	157
Mask - X ²⁴⁴	2	0	0	157
Mask - Y ²⁴⁵	2	0	0	157
MicrobeamManipulation - ExperimenterRef ²⁴⁶	0	0	0	159
MicrobeamManipulation - ID ²⁴⁷	0	0	0	159
MicrobeamManipulation - ROIRef ²⁴⁸	0	0	0	159
MicrobeamManipulation - Type ²⁴⁹	0	0	0	159
MicrobeamManipulationLightSourceSettings - Attenuation ²⁵⁰	0	0	0	159
MicrobeamManipulationLightSourceSettings - ID ²⁵¹	0	0	0	159
MicrobeamManipulationLightSourceSettings - Wavelength ²⁵²	0	0	0	159
Microscope - Lot-Number ²⁵³	1	0	0	158
Microscope - Manufacturer ²⁵⁴	2	0	0	157
Microscope - Model ²⁵⁵	11	0	0	148
Microscope - Serial-Number ²⁵⁶	4	0	0	155
Microscope - Type ²⁵⁷	3	0	0	156
Objective - CalibratedMagnification ²⁵⁸	9	0	0	150
Objective - Correction ²⁵⁹	25	0	0	134

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²³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth²³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text²³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheC²³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT²⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ²⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform²⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Visible²⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_Width²⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_X²⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_Y²⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID²⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#MicrobeamManipulation_ID²⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID²⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#MicrobeamManipulation_Type²⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_Attenuation²⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_ID²⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_Wavelength²⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber²⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer²⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model²⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber²⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Microscope_Type²⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification²⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Objective - ID ²⁶⁰	31	0	0	128
Objective - Immersion ²⁶¹	26	0	0	133
Objective - Iris ²⁶²	2	0	0	157
Objective - LensNA ²⁶³	19	0	0	140
Objective - LotNumber ²⁶⁴	1	0	0	158
Objective - Manufacturer ²⁶⁵	5	0	0	154
Objective - Model ²⁶⁶	12	0	0	147
Objective - NominalMagnification ²⁶⁷	23	0	0	136
Objective - SerialNumber ²⁶⁸	3	0	0	156
Objective - WorkingDistance ²⁶⁹	9	0	0	150
ObjectiveSettings - CorrectionCollar ²⁷⁰	1	0	0	158
ObjectiveSettings - ID ²⁷¹	26	0	0	133
ObjectiveSettings - Medium ²⁷²	1	0	0	158
ObjectiveSettings - RefractiveIndex ²⁷³	7	0	0	152
Pixels - AnnotationRef ²⁷⁴	0	0	0	159
Pixels - BigEndian ²⁷⁵	159	0	0	0
Pixels - DimensionOrder ²⁷⁶	159	0	0	0
Pixels - ID ²⁷⁷	159	0	0	0
Pixels - Interleaved ²⁷⁸	159	0	0	0
Pixels - PhysicalSizeX ²⁷⁹	82	0	0	77
Pixels - PhysicalSizeY ²⁸⁰	82	0	0	77
Pixels - PhysicalSizeZ ²⁸¹	42	0	0	117

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²⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID²⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion²⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Iris²⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA²⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber²⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer²⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model²⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification²⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber²⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_WorkingDistance²⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_CorrectionCollar²⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID²⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_Medium²⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex²⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID²⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian²⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder²⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID²⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved²⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX²⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY²⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Pixels - Significant-Bits ²⁸²	159	0	0	0
Pixels - SizeC ²⁸³	159	0	0	0
Pixels - SizeT ²⁸⁴	159	0	0	0
Pixels - SizeX ²⁸⁵	159	0	0	0
Pixels - SizeY ²⁸⁶	159	0	0	0
Pixels - SizeZ ²⁸⁷	159	0	0	0
Pixels - TimeIncrement ²⁸⁸	16	0	0	143
Pixels - Type ²⁸⁹	159	0	0	0
Plane - Annotation-Ref ²⁹⁰	0	0	0	159
Plane - DeltaT ²⁹¹	22	0	0	137
Plane - Exposure-Time ²⁹²	30	0	0	129
Plane - HashSHA1 ²⁹³	0	0	0	159
Plane - PositionX ²⁹⁴	26	0	0	133
Plane - PositionY ²⁹⁵	26	0	0	133
Plane - PositionZ ²⁹⁶	20	0	0	139
Plane - TheC ²⁹⁷	159	0	0	0
Plane - TheT ²⁹⁸	159	0	0	0
Plane - TheZ ²⁹⁹	159	0	0	0
Plate - Annotation-Ref ³⁰⁰	0	0	0	159
Plate - ColumnNamingConvention ³⁰¹	8	0	0	151
Plate - Columns ³⁰²	4	0	0	155
Plate - Description ³⁰³	2	0	0	157
Plate - ExternalIdentifier ³⁰⁴	3	0	0	156
Plate - ID ³⁰⁵	10	0	0	149
Plate - Name ³⁰⁶	9	0	0	150
Plate - RowNamingConvention ³⁰⁷	8	0	0	151

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²⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits²⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC²⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT²⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX²⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY²⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ²⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement²⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type²⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID²⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT²⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime²⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_HashSHA1²⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX²⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY²⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ²⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC²⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT²⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ³⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID³⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ColumnNamingConvention³⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Columns³⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Description³⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ExternalIdentifier³⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID³⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Name³⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_RowNamingConvention

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Plate - Rows ³⁰⁸	4	0	0	155
Plate - Status ³⁰⁹	0	0	0	159
Plate - WellOriginX ³¹⁰	1	0	0	158
Plate - WellOriginY ³¹¹	1	0	0	158
PlateAcquisition - AnnotationRef ³¹²	0	0	0	159
PlateAcquisition - Description ³¹³	0	0	0	159
PlateAcquisition - EndTime ³¹⁴	2	0	0	157
PlateAcquisition - ID ³¹⁵	8	0	0	151
PlateAcquisition - MaximumFieldCount ³¹⁶	8	0	0	151
PlateAcquisition - Name ³¹⁷	0	0	0	159
PlateAcquisition - StartTime ³¹⁸	3	0	0	156
PlateAcquisition - WellSampleRef ³¹⁹	7	0	0	152
Point - FillColor ³²⁰	0	0	0	159
Point - FillRule ³²¹	0	0	0	159
Point - FontFamily ³²²	0	0	0	159
Point - FontSize ³²³	1	0	0	158
Point - FontStyle ³²⁴	0	0	0	159
Point - ID ³²⁵	3	0	0	156
Point - LineCap ³²⁶	0	0	0	159
Point - Locked ³²⁷	0	0	0	159
Point - StrokeColor ³²⁸	1	0	0	158
Point - StrokeDashArray ³²⁹	1	0	0	158
Point - StrokeWidth ³³⁰	2	0	0	157
Point - Text ³³¹	1	0	0	158

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³⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Rows³⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Status³¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_WellOriginX³¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_WellOriginY³¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID³¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_Description³¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_EndTime³¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_ID³¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount³¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_Name³¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_StartTime³¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSampleRef_ID³²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillColor³²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillRule³²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontFamily³²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize³²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontStyle³²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID³²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_LineCap³²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Locked³²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor³²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray³³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth³³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Point - TheC ³³²	0	0	0	159
Point - TheT ³³³	1	0	0	158
Point - TheZ ³³⁴	2	0	0	157
Point - Transform ³³⁵	0	0	0	159
Point - Visible ³³⁶	0	0	0	159
Point - X ³³⁷	3	0	0	156
Point - Y ³³⁸	3	0	0	156
Polygon - Fill-Color ³³⁹	0	0	0	159
Polygon - FillRule ³⁴⁰	0	0	0	159
Polygon - FontFamily ³⁴¹	0	0	0	159
Polygon - FontSize ³⁴²	2	0	0	157
Polygon - FontStyle ³⁴³	0	0	0	159
Polygon - ID ³⁴⁴	7	0	0	152
Polygon - LineCap ³⁴⁵	0	0	0	159
Polygon - Locked ³⁴⁶	0	0	0	159
Polygon - Points ³⁴⁷	7	0	0	152
Polygon - StrokeColor ³⁴⁸	1	0	0	158
Polygon - StrokeDashArray ³⁴⁹	1	0	0	158
Polygon - StrokeWidth ³⁵⁰	3	0	0	156
Polygon - Text ³⁵¹	2	0	0	157
Polygon - TheC ³⁵²	0	0	0	159
Polygon - TheT ³⁵³	1	0	0	158
Polygon - TheZ ³⁵⁴	2	0	0	157
Polygon - Transform ³⁵⁵	1	0	0	158
Polygon - Visible ³⁵⁶	0	0	0	159
Polyline - FillColor ³⁵⁷	0	0	0	159

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³³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheC³³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT³³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ³³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform³³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Visible³³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Point_X³³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Point_Y³³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillColor³⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillRule³⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontFamily³⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize³⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontStyle³⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID³⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_LineCap³⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Locked³⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polygon_Points³⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor³⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray³⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth³⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text³⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheC³⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT³⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ³⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform³⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Visible³⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillColor

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Polyline - FillRule ³⁵⁸	0	0	0	159
Polyline - FontFamily ³⁵⁹	0	0	0	159
Polyline - FontSize ³⁶⁰	2	0	0	157
Polyline - FontStyle ³⁶¹	0	0	0	159
Polyline - ID ³⁶²	5	0	0	154
Polyline - LineCap ³⁶³	0	0	0	159
Polyline - Locked ³⁶⁴	0	0	0	159
Polyline - MarkerEnd ³⁶⁵	0	0	0	159
Polyline - MarkerStart ³⁶⁶	0	0	0	159
Polyline - Points ³⁶⁷	5	0	0	154
Polyline - StrokeColor ³⁶⁸	1	0	0	158
Polyline - StrokeDashArray ³⁶⁹	1	0	0	158
Polyline - StrokeWidth ³⁷⁰	3	0	0	156
Polyline - Text ³⁷¹	2	0	0	157
Polyline - TheC ³⁷²	0	0	0	159
Polyline - TheT ³⁷³	1	0	0	158
Polyline - TheZ ³⁷⁴	2	0	0	157
Polyline - Transform ³⁷⁵	1	0	0	158
Polyline - Visible ³⁷⁶	0	0	0	159
Project - AnnotationRef ³⁷⁷	0	0	0	159
Project - DatasetRef ³⁷⁸	0	0	0	159
Project - Description ³⁷⁹	0	0	0	159
Project - ExperimenterGroupRef ³⁸⁰	0	0	0	159
Project - ExperimenterRef ³⁸¹	0	0	0	159

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³⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillRule³⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontFamily³⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize³⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontStyle³⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID³⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_LineCap³⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Locked³⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polyline_MarkerEnd³⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polyline_MarkerStart³⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polyline_Points³⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor³⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray³⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth³⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text³⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheC³⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT³⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ³⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform³⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Visible³⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID³⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DatasetRef_ID³⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Project_Description³⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterGroupRef_ID³⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Project - ID ³⁸²	0	0	0	159
Project - Name ³⁸³	0	0	0	159
ROI - Annotation-Ref ³⁸⁴	0	0	0	159
ROI - Description ³⁸⁵	1	0	0	158
ROI - ID ³⁸⁶	11	0	0	148
ROI - Name ³⁸⁷	3	0	0	156
ROI - Namespace ³⁸⁸	0	0	0	159
Reagent - AnnotationRef ³⁸⁹	0	0	0	159
Reagent - Description ³⁹⁰	0	0	0	159
Reagent - ID ³⁹¹	0	0	0	159
Reagent - Name ³⁹²	0	0	0	159
Reagent - ReagentIdentifier ³⁹³	0	0	0	159
Rectangle - FillColor ³⁹⁴	0	0	0	159
Rectangle - FillRule ³⁹⁵	0	0	0	159
Rectangle - FontFamily ³⁹⁶	0	0	0	159
Rectangle - FontSize ³⁹⁷	2	0	0	157
Rectangle - FontStyle ³⁹⁸	0	0	0	159
Rectangle - Height ³⁹⁹	7	0	0	152
Rectangle - ID ⁴⁰⁰	7	0	0	152
Rectangle - LineCap ⁴⁰¹	0	0	0	159
Rectangle - Locked ⁴⁰²	0	0	0	159
Rectangle - StrokeColor ⁴⁰³	0	0	0	159
Rectangle - StrokeDashArray ⁴⁰⁴	0	0	0	159
Rectangle - StrokeWidth ⁴⁰⁵	2	0	0	157

Continued on next page

³⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Project_ID³⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Project_Name³⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID³⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_Description³⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID³⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_Name³⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_Namespace³⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID³⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Reagent_Description³⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Reagent_ID³⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Reagent_Name³⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Reagent_ReagentIdentifier³⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillColor³⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillRule³⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontFamily³⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize³⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontStyle³⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Height⁴⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID⁴⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_LineCap⁴⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Locked⁴⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor⁴⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray⁴⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Rectangle - Text ⁴⁰⁶	2	0	0	157
Rectangle - TheC ⁴⁰⁷	0	0	0	159
Rectangle - TheT ⁴⁰⁸	1	0	0	158
Rectangle - TheZ ⁴⁰⁹	1	0	0	158
Rectangle - Transform ⁴¹⁰	1	0	0	158
Rectangle - Visible ⁴¹¹	0	0	0	159
Rectangle - Width ⁴¹²	7	0	0	152
Rectangle - X ⁴¹³	7	0	0	152
Rectangle - Y ⁴¹⁴	7	0	0	152
Screen - AnnotationRef ⁴¹⁵	0	0	0	159
Screen - Description ⁴¹⁶	0	0	0	159
Screen - ID ⁴¹⁷	1	0	0	158
Screen - Name ⁴¹⁸	1	0	0	158
Screen - PlateRef ⁴¹⁹	1	0	0	158
Screen - ProtocolDescription ⁴²⁰	0	0	0	159
Screen - ProtocolIdentifier ⁴²¹	0	0	0	159
Screen - ReagentSetDescription ⁴²²	0	0	0	159
Screen - ReagentSetIdentifier ⁴²³	0	0	0	159
Screen - Type ⁴²⁴	0	0	0	159
StageLabel - Name ⁴²⁵	3	0	0	156
StageLabel - X ⁴²⁶	2	0	0	157
StageLabel - Y ⁴²⁷	2	0	0	157
StageLabel - Z ⁴²⁸	3	0	0	156
TagAnnotation - AnnotationRef ⁴²⁹	0	0	0	159
TagAnnotation - Description ⁴³⁰	0	0	0	159

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⁴⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text⁴⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheC⁴⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT⁴⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ⁴¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform⁴¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Visible⁴¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Width⁴¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_X⁴¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Y⁴¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID⁴¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Screen_Description⁴¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Screen_ID⁴¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Screen_Name⁴¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Screen_Screen_PlateRef_ID⁴²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Screen_ProtocolDescription⁴²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Screen_ProtocolIdentifier⁴²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Screen_ReagentSetDescription⁴²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Screen_ReagentSetIdentifier⁴²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Screen_Type⁴²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Name⁴²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_X⁴²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Y⁴²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Z⁴²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID⁴³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Description

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
TagAnnotation ID ⁴³¹	0	0	0	159
TagAnnotation Namespace ⁴³²	0	0	0	159
TagAnnotation Value ⁴³³	0	0	0	159
TermAnnotation AnnotationRef ⁴³⁴	0	0	0	159
TermAnnotation Description ⁴³⁵	0	0	0	159
TermAnnotation ID ⁴³⁶	0	0	0	159
TermAnnotation Namespace ⁴³⁷	0	0	0	159
TermAnnotation Value ⁴³⁸	0	0	0	159
TiffData - FirstC ⁴³⁹	0	0	0	159
TiffData - FirstT ⁴⁴⁰	0	0	0	159
TiffData - FirstZ ⁴⁴¹	0	0	0	159
TiffData - IFD ⁴⁴²	0	0	0	159
TiffData PlaneCount ⁴⁴³	0	0	0	159
TimestampAnnotation - AnnotationRef ⁴⁴⁴	0	0	0	159
TimestampAnnotation - Description ⁴⁴⁵	0	0	0	159
TimestampAnnotation - ID ⁴⁴⁶	0	0	0	159
TimestampAnnotation - Namespace ⁴⁴⁷	0	0	0	159
TimestampAnnotation - Value ⁴⁴⁸	0	0	0	159
TransmittanceRange - CutIn ⁴⁴⁹	5	0	0	154
TransmittanceRange - CutInTolerance ⁴⁵⁰	1	0	0	158
TransmittanceRange - CutOut ⁴⁵¹	5	0	0	154

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⁴³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID⁴³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace⁴³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#TagAnnotation_Value⁴³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID⁴³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Description⁴³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID⁴³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace⁴³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#TermAnnotation_Value⁴³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TiffData_FirstC⁴⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TiffData_FirstT⁴⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TiffData_FirstZ⁴⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TiffData_IFD⁴⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TiffData_PlaneCount⁴⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID⁴⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Description⁴⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID⁴⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace⁴⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#TimestampAnnotation_Value⁴⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutIn⁴⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutInTolerance⁴⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutOut

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
TransmittanceRange - CutOutTolerance ⁴⁵²	1	0	0	158
TransmittanceRange - Transmittance ⁴⁵³	1	0	0	158
UUID - FileName ⁴⁵⁴	0	0	0	159
UUID - Value ⁴⁵⁵	0	0	0	159
Well - Annotation- Ref ⁴⁵⁶	0	0	0	159
Well - Color ⁴⁵⁷	0	0	0	159
Well - Column ⁴⁵⁸	11	0	0	148
Well - ExternalDe- scription ⁴⁵⁹	0	0	0	159
Well - ExternalIden- tifier ⁴⁶⁰	0	0	0	159
Well - ID ⁴⁶¹	11	0	0	148
Well - ReagentRef ⁴⁶²	0	0	0	159
Well - Row ⁴⁶³	11	0	0	148
Well - Type ⁴⁶⁴	0	0	0	159
WellSample - Anno- tationRef ⁴⁶⁵	0	0	0	159
WellSample - ID ⁴⁶⁶	11	0	0	148
WellSample - Im- ageRef ⁴⁶⁷	10	0	0	149
WellSample - In- dex ⁴⁶⁸	11	0	0	148
WellSample - Posi- tionX ⁴⁶⁹	5	0	0	154
WellSample - Posi- tionY ⁴⁷⁰	5	0	0	154
WellSample - Time- point ⁴⁷¹	0	0	0	159
XMLAnnotation - AnnotationRef ⁴⁷²	0	0	0	159
XMLAnnotation - ID ⁴⁷³	0	0	0	159
XMLAnnotation - Namespace ⁴⁷⁴	0	0	0	159

Continued on next page

⁴⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutOutTolerance⁴⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_Transmittance⁴⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TiffData_TiffData_UUID_FileName⁴⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#UniversallyUniqueIdentifier⁴⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID⁴⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Color⁴⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column⁴⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ExternalDescription⁴⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ExternalIdentifier⁴⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID⁴⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#ReagentRef_ID⁴⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row⁴⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Type⁴⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID⁴⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID⁴⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID⁴⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index⁴⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionX⁴⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionY⁴⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Timepoint⁴⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#AnnotationRef_ID⁴⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_ID⁴⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#Annotation_Namespace

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
XMLAnnotation Value ⁴⁷⁵	0	0	0	159

19.2.1 SlidebookReader

This page lists supported metadata fields for the Bio-Formats Olympus Slidebook format reader.

These fields are from the [OME data model](#)⁴⁷⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 34 of them (7%).
- Of those, Bio-Formats fully or partially converts 34 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Olympus Slidebook format reader:

- Channel : ID⁴⁷⁷
- Channel : NDFilter⁴⁷⁸
- Channel : Name⁴⁷⁹
- Channel : SamplesPerPixel⁴⁸⁰
- Image : AcquisitionDate⁴⁸¹
- Image : Description⁴⁸²
- Image : ID⁴⁸³
- Image : InstrumentRef⁴⁸⁴
- Image : Name⁴⁸⁵
- Instrument : ID⁴⁸⁶
- Objective : Correction⁴⁸⁷
- Objective : ID⁴⁸⁸
- Objective : Immersion⁴⁸⁹
- Objective : Model⁴⁹⁰
- Objective : NominalMagnification⁴⁹¹
- ObjectiveSettings : ID⁴⁹²

⁴⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SA_xsd.html#XMLAnnotation_Value

⁴⁷⁶<http://www.openmicroscopy.org/site/support/ome-model/>

⁴⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_NDFilter

⁴⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

⁴⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

⁴⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

⁴⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

⁴⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

⁴⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

⁴⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

⁴⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

⁴⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

- Pixels : BigEndian⁴⁹³
- Pixels : DimensionOrder⁴⁹⁴
- Pixels : ID⁴⁹⁵
- Pixels : Interleaved⁴⁹⁶
- Pixels : PhysicalSizeX⁴⁹⁷
- Pixels : PhysicalSizeY⁴⁹⁸
- Pixels : PhysicalSizeZ⁴⁹⁹
- Pixels : SignificantBits⁵⁰⁰
- Pixels : SizeC⁵⁰¹
- Pixels : SizeT⁵⁰²
- Pixels : SizeX⁵⁰³
- Pixels : SizeY⁵⁰⁴
- Pixels : SizeZ⁵⁰⁵
- Pixels : Type⁵⁰⁶
- Plane : ExposureTime⁵⁰⁷
- Plane : TheC⁵⁰⁸
- Plane : TheT⁵⁰⁹
- Plane : TheZ⁵¹⁰

Total supported: 34

Total unknown or missing: 441

19.2.2 AIMReader

This page lists supported metadata fields for the Bio-Formats AIM format reader.

These fields are from the [OME data model](#)⁵¹¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

⁴⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁵⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁵⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁵⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁵⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁵⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁵⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁵⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁵⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

⁵⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁵⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁵¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁵¹¹<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats AIM format reader:

- Channel : ID⁵¹²
- Channel : SamplesPerPixel⁵¹³
- Image : AcquisitionDate⁵¹⁴
- Image : ID⁵¹⁵
- Image : Name⁵¹⁶
- Pixels : BigEndian⁵¹⁷
- Pixels : DimensionOrder⁵¹⁸
- Pixels : ID⁵¹⁹
- Pixels : Interleaved⁵²⁰
- Pixels : PhysicalSizeX⁵²¹
- Pixels : PhysicalSizeY⁵²²
- Pixels : PhysicalSizeZ⁵²³
- Pixels : SignificantBits⁵²⁴
- Pixels : SizeC⁵²⁵
- Pixels : SizeT⁵²⁶
- Pixels : SizeX⁵²⁷
- Pixels : SizeY⁵²⁸
- Pixels : SizeZ⁵²⁹
- Pixels : Type⁵³⁰
- Plane : TheC⁵³¹
- Plane : TheT⁵³²
- Plane : TheZ⁵³³

Total supported: 22

Total unknown or missing: 453

- ⁵¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
- ⁵¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
- ⁵¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
- ⁵¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
- ⁵¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
- ⁵¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ⁵¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ⁵¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ⁵²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ⁵²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ⁵²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ⁵²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ⁵²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ⁵²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ⁵²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ⁵²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ⁵²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ⁵²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ⁵³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ⁵³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ⁵³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ⁵³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.3 AliconaReader

This page lists supported metadata fields for the Bio-Formats Alicona AL3D format reader.

These fields are from the [OME data model](#)⁵³⁴. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 33 of them (6%).
- Of those, Bio-Formats fully or partially converts 33 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Alicona AL3D format reader:

- Channel : ID⁵³⁵
- Channel : SamplesPerPixel⁵³⁶
- Detector : ID⁵³⁷
- Detector : Type⁵³⁸
- DetectorSettings : ID⁵³⁹
- DetectorSettings : Voltage⁵⁴⁰
- Image : AcquisitionDate⁵⁴¹
- Image : ID⁵⁴²
- Image : InstrumentRef⁵⁴³
- Image : Name⁵⁴⁴
- Instrument : ID⁵⁴⁵
- Objective : CalibratedMagnification⁵⁴⁶
- Objective : Correction⁵⁴⁷
- Objective : ID⁵⁴⁸
- Objective : Immersion⁵⁴⁹
- Objective : WorkingDistance⁵⁵⁰
- ObjectiveSettings : ID⁵⁵¹
- Pixels : BigEndian⁵⁵²

⁵³⁴<http://www.openmicroscopy.org/site/support/ome-model/>

⁵³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁵³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁵³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

⁵³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

⁵³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

⁵⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Voltage

⁵⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁵⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁵⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

⁵⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁵⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

⁵⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification

⁵⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

⁵⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

⁵⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

⁵⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_WorkingDistance

⁵⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

⁵⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

- Pixels : DimensionOrder⁵⁵³
- Pixels : ID⁵⁵⁴
- Pixels : Interleaved⁵⁵⁵
- Pixels : PhysicalSizeX⁵⁵⁶
- Pixels : PhysicalSizeY⁵⁵⁷
- Pixels : SignificantBits⁵⁵⁸
- Pixels : SizeC⁵⁵⁹
- Pixels : SizeT⁵⁶⁰
- Pixels : SizeX⁵⁶¹
- Pixels : SizeY⁵⁶²
- Pixels : SizeZ⁵⁶³
- Pixels : Type⁵⁶⁴
- Plane : TheC⁵⁶⁵
- Plane : TheT⁵⁶⁶
- Plane : TheZ⁵⁶⁷

Total supported: 33

Total unknown or missing: 442

19.2.4 GelReader

This page lists supported metadata fields for the Bio-Formats Amersham Biosciences GEL format reader.

These fields are from the [OME data model](#)⁵⁶⁸. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 21 of them (4%).
- Of those, Bio-Formats fully or partially converts 21 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Amersham Biosciences GEL format reader:

- Channel : ID⁵⁶⁹
- Channel : SamplesPerPixel⁵⁷⁰

⁵⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁵⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁵⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁵⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁵⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁵⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁵⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁵⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁵⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁵⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁵⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁵⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁵⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁵⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁵⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁵⁶⁸<http://www.openmicroscopy.org/site/support/ome-model/>

⁵⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁵⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate⁵⁷¹
- Image : ID⁵⁷²
- Image : Name⁵⁷³
- Pixels : BigEndian⁵⁷⁴
- Pixels : DimensionOrder⁵⁷⁵
- Pixels : ID⁵⁷⁶
- Pixels : Interleaved⁵⁷⁷
- Pixels : PhysicalSizeX⁵⁷⁸
- Pixels : PhysicalSizeY⁵⁷⁹
- Pixels : SignificantBits⁵⁸⁰
- Pixels : SizeC⁵⁸¹
- Pixels : SizeT⁵⁸²
- Pixels : SizeX⁵⁸³
- Pixels : SizeY⁵⁸⁴
- Pixels : SizeZ⁵⁸⁵
- Pixels : Type⁵⁸⁶
- Plane : TheC⁵⁸⁷
- Plane : TheT⁵⁸⁸
- Plane : TheZ⁵⁸⁹

Total supported: 21

Total unknown or missing: 454

19.2.5 AmiraReader

This page lists supported metadata fields for the Bio-Formats Amira format reader.

These fields are from the [OME data model](#)⁵⁹⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

⁵⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁵⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁵⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁵⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁵⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁵⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁵⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁵⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁵⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁵⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁵⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁵⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁵⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁵⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁵⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁵⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁵⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁵⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁵⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁵⁹⁰<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Amira format reader:

- Channel : ID⁵⁹¹
- Channel : SamplesPerPixel⁵⁹²
- Image : AcquisitionDate⁵⁹³
- Image : ID⁵⁹⁴
- Image : Name⁵⁹⁵
- Pixels : BigEndian⁵⁹⁶
- Pixels : DimensionOrder⁵⁹⁷
- Pixels : ID⁵⁹⁸
- Pixels : Interleaved⁵⁹⁹
- Pixels : PhysicalSizeX⁶⁰⁰
- Pixels : PhysicalSizeY⁶⁰¹
- Pixels : PhysicalSizeZ⁶⁰²
- Pixels : SignificantBits⁶⁰³
- Pixels : SizeC⁶⁰⁴
- Pixels : SizeT⁶⁰⁵
- Pixels : SizeX⁶⁰⁶
- Pixels : SizeY⁶⁰⁷
- Pixels : SizeZ⁶⁰⁸
- Pixels : Type⁶⁰⁹
- Plane : TheC⁶¹⁰
- Plane : TheT⁶¹¹
- Plane : TheZ⁶¹²

Total supported: 22

Total unknown or missing: 453

- ⁵⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
- ⁵⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
- ⁵⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
- ⁵⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
- ⁵⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
- ⁵⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ⁵⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ⁵⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ⁵⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ⁶⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ⁶⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ⁶⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ⁶⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ⁶⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ⁶⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ⁶⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ⁶⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ⁶⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ⁶⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ⁶¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ⁶¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ⁶¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.6 AnalyzeReader

This page lists supported metadata fields for the Bio-Formats Analyze 7.5 format reader.

These fields are from the [OME data model](#)⁶¹³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 24 of them (5%).
- Of those, Bio-Formats fully or partially converts 24 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Analyze 7.5 format reader:

- Channel : ID⁶¹⁴
- Channel : SamplesPerPixel⁶¹⁵
- Image : AcquisitionDate⁶¹⁶
- Image : Description⁶¹⁷
- Image : ID⁶¹⁸
- Image : Name⁶¹⁹
- Pixels : BigEndian⁶²⁰
- Pixels : DimensionOrder⁶²¹
- Pixels : ID⁶²²
- Pixels : Interleaved⁶²³
- Pixels : PhysicalSizeX⁶²⁴
- Pixels : PhysicalSizeY⁶²⁵
- Pixels : PhysicalSizeZ⁶²⁶
- Pixels : SignificantBits⁶²⁷
- Pixels : SizeC⁶²⁸
- Pixels : SizeT⁶²⁹
- Pixels : SizeX⁶³⁰
- Pixels : SizeY⁶³¹

⁶¹³<http://www.openmicroscopy.org/site/support/ome-model/>

⁶¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁶¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁶¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁶¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

⁶¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁶¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁶²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁶²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁶²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁶²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁶²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁶²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁶²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁶²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁶²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁶²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁶³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁶³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ⁶³²
- Pixels : TimeIncrement⁶³³
- Pixels : Type⁶³⁴
- Plane : TheC⁶³⁵
- Plane : TheT⁶³⁶
- Plane : TheZ⁶³⁷

Total supported: 24

Total unknown or missing: 451

19.2.7 AFIREader

This page lists supported metadata fields for the Bio-Formats Aperio AFI format reader.

These fields are from the [OME data model](#)⁶³⁸. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 23 of them (4%).
- Of those, Bio-Formats fully or partially converts 23 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Aperio AFI format reader:

- Channel : EmissionWavelength⁶³⁹
- Channel : ExcitationWavelength⁶⁴⁰
- Channel : ID⁶⁴¹
- Channel : Name⁶⁴²
- Channel : SamplesPerPixel⁶⁴³
- Image : AcquisitionDate⁶⁴⁴
- Image : ID⁶⁴⁵
- Image : Name⁶⁴⁶
- Pixels : BigEndian⁶⁴⁷
- Pixels : DimensionOrder⁶⁴⁸
- Pixels : ID⁶⁴⁹

⁶³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁶³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

⁶³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁶³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁶³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁶³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁶³⁸<http://www.openmicroscopy.org/site/support/ome-model/>

⁶³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

⁶⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

⁶⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁶⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

⁶⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁶⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁶⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁶⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁶⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁶⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁶⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

- Pixels : Interleaved⁶⁵⁰
- Pixels : SignificantBits⁶⁵¹
- Pixels : SizeC⁶⁵²
- Pixels : SizeT⁶⁵³
- Pixels : SizeX⁶⁵⁴
- Pixels : SizeY⁶⁵⁵
- Pixels : SizeZ⁶⁵⁶
- Pixels : Type⁶⁵⁷
- Plane : ExposureTime⁶⁵⁸
- Plane : TheC⁶⁵⁹
- Plane : TheT⁶⁶⁰
- Plane : TheZ⁶⁶¹

Total supported: 23

Total unknown or missing: 452

19.2.8 SVSReader

This page lists supported metadata fields for the Bio-Formats Aperio SVS format reader.

These fields are from the [OME data model](#)⁶⁶². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Aperio SVS format reader:

- Channel : EmissionWavelength⁶⁶³
- Channel : ExcitationWavelength⁶⁶⁴
- Channel : ID⁶⁶⁵
- Channel : SamplesPerPixel⁶⁶⁶
- Image : AcquisitionDate⁶⁶⁷

⁶⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁶⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁶⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁶⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁶⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁶⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁶⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁶⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁶⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

⁶⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁶⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁶⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁶⁶²<http://www.openmicroscopy.org/site/support/ome-model/>

⁶⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

⁶⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

⁶⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁶⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁶⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

- Image : Description⁶⁶⁸
- Image : ID⁶⁶⁹
- Image : Name⁶⁷⁰
- Pixels : BigEndian⁶⁷¹
- Pixels : DimensionOrder⁶⁷²
- Pixels : ID⁶⁷³
- Pixels : Interleaved⁶⁷⁴
- Pixels : SignificantBits⁶⁷⁵
- Pixels : SizeC⁶⁷⁶
- Pixels : SizeT⁶⁷⁷
- Pixels : SizeX⁶⁷⁸
- Pixels : SizeY⁶⁷⁹
- Pixels : SizeZ⁶⁸⁰
- Pixels : Type⁶⁸¹
- Plane : TheC⁶⁸²
- Plane : TheT⁶⁸³
- Plane : TheZ⁶⁸⁴

Total supported: 22

Total unknown or missing: 453

19.2.9 CellWorxReader

This page lists supported metadata fields for the Bio-Formats CellWorx format reader.

These fields are from the [OME data model](#)⁶⁸⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 45 of them (9%).
- Of those, Bio-Formats fully or partially converts 45 (100%).

⁶⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

⁶⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁶⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁶⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁶⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁶⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁶⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁶⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁶⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁶⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁶⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁶⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁶⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁶⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁶⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁶⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁶⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁶⁸⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats CellWorx format reader:

- Channel : EmissionWavelength⁶⁸⁶
- Channel : ExcitationWavelength⁶⁸⁷
- Channel : ID⁶⁸⁸
- Channel : Name⁶⁸⁹
- Channel : SamplesPerPixel⁶⁹⁰
- Detector : ID⁶⁹¹
- DetectorSettings : Gain⁶⁹²
- DetectorSettings : ID⁶⁹³
- Image : AcquisitionDate⁶⁹⁴
- Image : ID⁶⁹⁵
- Image : InstrumentRef⁶⁹⁶
- Image : Name⁶⁹⁷
- Instrument : ID⁶⁹⁸
- Microscope : SerialNumber⁶⁹⁹
- Pixels : BigEndian⁷⁰⁰
- Pixels : DimensionOrder⁷⁰¹
- Pixels : ID⁷⁰²
- Pixels : Interleaved⁷⁰³
- Pixels : PhysicalSizeX⁷⁰⁴
- Pixels : PhysicalSizeY⁷⁰⁵
- Pixels : SignificantBits⁷⁰⁶
- Pixels : SizeC⁷⁰⁷
- Pixels : SizeT⁷⁰⁸
- Pixels : SizeX⁷⁰⁹

⁶⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

⁶⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

⁶⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁶⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

⁶⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁶⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

⁶⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

⁶⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

⁶⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁶⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁶⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

⁶⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁶⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

⁶⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁷⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁷⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁷⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁷⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁷⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁷⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁷⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁷⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁷⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁷⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

- Pixels : SizeY⁷¹⁰
- Pixels : SizeZ⁷¹¹
- Pixels : Type⁷¹²
- Plane : TheC⁷¹³
- Plane : TheT⁷¹⁴
- Plane : TheZ⁷¹⁵
- Plate : ID⁷¹⁶
- Plate : Name⁷¹⁷
- PlateAcquisition : EndTime⁷¹⁸
- PlateAcquisition : ID⁷¹⁹
- PlateAcquisition : MaximumFieldCount⁷²⁰
- PlateAcquisition : StartTime⁷²¹
- PlateAcquisition : WellSampleRef⁷²²
- Well : Column⁷²³
- Well : ID⁷²⁴
- Well : Row⁷²⁵
- WellSample : ID⁷²⁶
- WellSample : ImageRef⁷²⁷
- WellSample : Index⁷²⁸
- WellSample : PositionX⁷²⁹
- WellSample : PositionY⁷³⁰

Total supported: 45

Total unknown or missing: 430

19.2.10 AVIReader

This page lists supported metadata fields for the Bio-Formats Audio Video Interleave format reader.

These fields are from the [OME data model](#)⁷³¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

⁷¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁷¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁷¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁷¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁷¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁷¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁷¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID

⁷¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Name

⁷¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_EndTime

⁷¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_ID

⁷²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

⁷²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_StartTime

⁷²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSampleRef_ID

⁷²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column

⁷²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID

⁷²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row

⁷²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID

⁷²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID

⁷²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index

⁷²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionX

⁷³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionY

⁷³¹<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields**These fields are fully supported by the Bio-Formats Audio Video Interleave format reader:**

- Channel : ID⁷³²
- Channel : SamplesPerPixel⁷³³
- Image : AcquisitionDate⁷³⁴
- Image : ID⁷³⁵
- Image : Name⁷³⁶
- Pixels : BigEndian⁷³⁷
- Pixels : DimensionOrder⁷³⁸
- Pixels : ID⁷³⁹
- Pixels : Interleaved⁷⁴⁰
- Pixels : SignificantBits⁷⁴¹
- Pixels : SizeC⁷⁴²
- Pixels : SizeT⁷⁴³
- Pixels : SizeX⁷⁴⁴
- Pixels : SizeY⁷⁴⁵
- Pixels : SizeZ⁷⁴⁶
- Pixels : Type⁷⁴⁷
- Plane : TheC⁷⁴⁸
- Plane : TheT⁷⁴⁹
- Plane : TheZ⁷⁵⁰

Total supported: 19**Total unknown or missing: 456**

⁷³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁷³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁷³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁷³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁷³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁷³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁷³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁷³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁷⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁷⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁷⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁷⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁷⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁷⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁷⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁷⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁷⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁷⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁷⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.11 ARFReader

This page lists supported metadata fields for the Bio-Formats ARF format reader.

These fields are from the [OME data model](#)⁷⁵¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats ARF format reader:

- Channel : ID⁷⁵²
- Channel : SamplesPerPixel⁷⁵³
- Image : AcquisitionDate⁷⁵⁴
- Image : ID⁷⁵⁵
- Image : Name⁷⁵⁶
- Pixels : BigEndian⁷⁵⁷
- Pixels : DimensionOrder⁷⁵⁸
- Pixels : ID⁷⁵⁹
- Pixels : Interleaved⁷⁶⁰
- Pixels : SignificantBits⁷⁶¹
- Pixels : SizeC⁷⁶²
- Pixels : SizeT⁷⁶³
- Pixels : SizeX⁷⁶⁴
- Pixels : SizeY⁷⁶⁵
- Pixels : SizeZ⁷⁶⁶
- Pixels : Type⁷⁶⁷
- Plane : TheC⁷⁶⁸
- Plane : TheT⁷⁶⁹

⁷⁵¹<http://www.openmicroscopy.org/site/support/ome-model/>

⁷⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁷⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁷⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁷⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁷⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁷⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁷⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁷⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁷⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁷⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁷⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁷⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁷⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁷⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁷⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁷⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁷⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁷⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

- Plane : TheZ⁷⁷⁰

Total supported: 19

Total unknown or missing: 456

19.2.12 BDReader

This page lists supported metadata fields for the Bio-Formats BD Pathway format reader.

These fields are from the [OME data model](#)⁷⁷¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 57 of them (12%).
- Of those, Bio-Formats fully or partially converts 57 (100%).

Supported fields

These fields are fully supported by the Bio-Formats BD Pathway format reader:

- Channel : EmissionWavelength⁷⁷²
- Channel : ExcitationWavelength⁷⁷³
- Channel : ID⁷⁷⁴
- Channel : Name⁷⁷⁵
- Channel : SamplesPerPixel⁷⁷⁶
- Detector : ID⁷⁷⁷
- DetectorSettings : Binning⁷⁷⁸
- DetectorSettings : Gain⁷⁷⁹
- DetectorSettings : ID⁷⁸⁰
- DetectorSettings : Offset⁷⁸¹
- Image : AcquisitionDate⁷⁸²
- Image : ID⁷⁸³
- Image : InstrumentRef⁷⁸⁴
- Image : Name⁷⁸⁵
- Image : ROIRef⁷⁸⁶
- Instrument : ID⁷⁸⁷

⁷⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁷⁷¹<http://www.openmicroscopy.org/site/support/ome-model/>

⁷⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

⁷⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

⁷⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁷⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

⁷⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁷⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

⁷⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

⁷⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

⁷⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

⁷⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Offset

⁷⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁷⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁷⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

⁷⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁷⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

⁷⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

- Objective : ID⁷⁸⁸
- Objective : LensNA⁷⁸⁹
- Objective : Manufacturer⁷⁹⁰
- Objective : NominalMagnification⁷⁹¹
- ObjectiveSettings : ID⁷⁹²
- Pixels : BigEndian⁷⁹³
- Pixels : DimensionOrder⁷⁹⁴
- Pixels : ID⁷⁹⁵
- Pixels : Interleaved⁷⁹⁶
- Pixels : SignificantBits⁷⁹⁷
- Pixels : SizeC⁷⁹⁸
- Pixels : SizeT⁷⁹⁹
- Pixels : SizeX⁸⁰⁰
- Pixels : SizeY⁸⁰¹
- Pixels : SizeZ⁸⁰²
- Pixels : Type⁸⁰³
- Plane : DeltaT⁸⁰⁴
- Plane : ExposureTime⁸⁰⁵
- Plane : TheC⁸⁰⁶
- Plane : TheT⁸⁰⁷
- Plane : TheZ⁸⁰⁸
- Plate : ColumnNamingConvention⁸⁰⁹
- Plate : Description⁸¹⁰
- Plate : ID⁸¹¹
- Plate : Name⁸¹²
- Plate : RowNamingConvention⁸¹³

⁷⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

⁷⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

⁷⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁷⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

⁷⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

⁷⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁷⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁷⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁷⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁷⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁷⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁷⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁸⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁸⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁸⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁸⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁸⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

⁸⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

⁸⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁸⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁸⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁸⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ColumnNamingConvention

⁸¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Description

⁸¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID

⁸¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Name

⁸¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_RowNamingConvention

- PlateAcquisition : ID⁸¹⁴
- PlateAcquisition : MaximumFieldCount⁸¹⁵
- PlateAcquisition : WellSampleRef⁸¹⁶
- ROI : ID⁸¹⁷
- Rectangle : Height⁸¹⁸
- Rectangle : ID⁸¹⁹
- Rectangle : Width⁸²⁰
- Rectangle : X⁸²¹
- Rectangle : Y⁸²²
- Well : Column⁸²³
- Well : ID⁸²⁴
- Well : Row⁸²⁵
- WellSample : ID⁸²⁶
- WellSample : ImageRef⁸²⁷
- WellSample : Index⁸²⁸

Total supported: 57

Total unknown or missing: 418

19.2.13 SDTReader

This page lists supported metadata fields for the Bio-Formats SPCImage Data format reader.

These fields are from the [OME data model](#)⁸²⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats SPCImage Data format reader:

- Channel : ID⁸³⁰
- Channel : SamplesPerPixel⁸³¹

⁸¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_ID

⁸¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

⁸¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSampleRef_ID

⁸¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

⁸¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Height

⁸¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁸²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Width

⁸²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_X

⁸²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Y

⁸²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column

⁸²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID

⁸²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row

⁸²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID

⁸²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID

⁸²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index

⁸²⁹<http://www.openmicroscopy.org/site/support/ome-model/>

⁸³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁸³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate⁸³²
- Image : ID⁸³³
- Image : Name⁸³⁴
- Pixels : BigEndian⁸³⁵
- Pixels : DimensionOrder⁸³⁶
- Pixels : ID⁸³⁷
- Pixels : Interleaved⁸³⁸
- Pixels : SignificantBits⁸³⁹
- Pixels : SizeC⁸⁴⁰
- Pixels : SizeT⁸⁴¹
- Pixels : SizeX⁸⁴²
- Pixels : SizeY⁸⁴³
- Pixels : SizeZ⁸⁴⁴
- Pixels : Type⁸⁴⁵
- Plane : TheC⁸⁴⁶
- Plane : TheT⁸⁴⁷
- Plane : TheZ⁸⁴⁸

Total supported: 19

Total unknown or missing: 456

19.2.14 BioRadGelReader

This page lists supported metadata fields for the Bio-Formats Bio-Rad GEL format reader.

These fields are from the [OME data model](#)⁸⁴⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 21 of them (4%).
- Of those, Bio-Formats fully or partially converts 21 (100%).

⁸³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁸³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁸³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁸³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁸³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁸³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁸³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁸³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁸⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁸⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁸⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁸⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁸⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁸⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁸⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁸⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁸⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁸⁴⁹<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Bio-Rad GEL format reader:

- Channel : ID⁸⁵⁰
- Channel : SamplesPerPixel⁸⁵¹
- Image : AcquisitionDate⁸⁵²
- Image : ID⁸⁵³
- Image : Name⁸⁵⁴
- Pixels : BigEndian⁸⁵⁵
- Pixels : DimensionOrder⁸⁵⁶
- Pixels : ID⁸⁵⁷
- Pixels : Interleaved⁸⁵⁸
- Pixels : PhysicalSizeX⁸⁵⁹
- Pixels : PhysicalSizeY⁸⁶⁰
- Pixels : SignificantBits⁸⁶¹
- Pixels : SizeC⁸⁶²
- Pixels : SizeT⁸⁶³
- Pixels : SizeX⁸⁶⁴
- Pixels : SizeY⁸⁶⁵
- Pixels : SizeZ⁸⁶⁶
- Pixels : Type⁸⁶⁷
- Plane : TheC⁸⁶⁸
- Plane : TheT⁸⁶⁹
- Plane : TheZ⁸⁷⁰

Total supported: 21

Total unknown or missing: 454

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- ⁸⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
 - ⁸⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
 - ⁸⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
 - ⁸⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
 - ⁸⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
 - ⁸⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
 - ⁸⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
 - ⁸⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
 - ⁸⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
 - ⁸⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
 - ⁸⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
 - ⁸⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
 - ⁸⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
 - ⁸⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
 - ⁸⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
 - ⁸⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
 - ⁸⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
 - ⁸⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
 - ⁸⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
 - ⁸⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
 - ⁸⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.15 BioRadReader

This page lists supported metadata fields for the Bio-Formats Bio-Rad PIC format reader.

These fields are from the [OME data model](#)⁸⁷¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 40 of them (8%).
- Of those, Bio-Formats fully or partially converts 40 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Bio-Rad PIC format reader:

- Channel : ID⁸⁷²
- Channel : SamplesPerPixel⁸⁷³
- Detector : Gain⁸⁷⁴
- Detector : ID⁸⁷⁵
- Detector : Offset⁸⁷⁶
- Detector : Type⁸⁷⁷
- DetectorSettings : Gain⁸⁷⁸
- DetectorSettings : ID⁸⁷⁹
- DetectorSettings : Offset⁸⁸⁰
- Experiment : ID⁸⁸¹
- Experiment : Type⁸⁸²
- Image : AcquisitionDate⁸⁸³
- Image : ID⁸⁸⁴
- Image : InstrumentRef⁸⁸⁵
- Image : Name⁸⁸⁶
- Instrument : ID⁸⁸⁷
- Objective : Correction⁸⁸⁸
- Objective : ID⁸⁸⁹
- Objective : Immersion⁸⁹⁰

⁸⁷¹<http://www.openmicroscopy.org/site/support/ome-model/>

⁸⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁸⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁸⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Gain

⁸⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

⁸⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Offset

⁸⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

⁸⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

⁸⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

⁸⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Offset

⁸⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_ID

⁸⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_Type

⁸⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁸⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁸⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

⁸⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁸⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

⁸⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

⁸⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

⁸⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

- Objective : LensNA⁸⁹¹
- Objective : Model⁸⁹²
- Objective : NominalMagnification⁸⁹³
- ObjectiveSettings : ID⁸⁹⁴
- Pixels : BigEndian⁸⁹⁵
- Pixels : DimensionOrder⁸⁹⁶
- Pixels : ID⁸⁹⁷
- Pixels : Interleaved⁸⁹⁸
- Pixels : PhysicalSizeX⁸⁹⁹
- Pixels : PhysicalSizeY⁹⁰⁰
- Pixels : PhysicalSizeZ⁹⁰¹
- Pixels : SignificantBits⁹⁰²
- Pixels : SizeC⁹⁰³
- Pixels : SizeT⁹⁰⁴
- Pixels : SizeX⁹⁰⁵
- Pixels : SizeY⁹⁰⁶
- Pixels : SizeZ⁹⁰⁷
- Pixels : Type⁹⁰⁸
- Plane : TheC⁹⁰⁹
- Plane : TheT⁹¹⁰
- Plane : TheZ⁹¹¹

Total supported: 40

Total unknown or missing: 435

19.2.16 BioRadSCNReader

This page lists supported metadata fields for the Bio-Formats Bio-Rad SCN format reader.

These fields are from the [OME data model](#)⁹¹². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

⁸⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

⁸⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁸⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

⁸⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

⁸⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁸⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁸⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁸⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁸⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁹¹²<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 29 of them (6%).
- Of those, Bio-Formats fully or partially converts 29 (100%).

Supported fields**These fields are fully supported by the Bio-Formats Bio-Rad SCN format reader:**

- Channel : ID⁹¹³
- Channel : SamplesPerPixel⁹¹⁴
- Detector : ID⁹¹⁵
- DetectorSettings : Binning⁹¹⁶
- DetectorSettings : Gain⁹¹⁷
- DetectorSettings : ID⁹¹⁸
- Image : AcquisitionDate⁹¹⁹
- Image : ID⁹²⁰
- Image : Name⁹²¹
- Instrument : ID⁹²²
- Microscope : Model⁹²³
- Microscope : SerialNumber⁹²⁴
- Pixels : BigEndian⁹²⁵
- Pixels : DimensionOrder⁹²⁶
- Pixels : ID⁹²⁷
- Pixels : Interleaved⁹²⁸
- Pixels : PhysicalSizeX⁹²⁹
- Pixels : PhysicalSizeY⁹³⁰
- Pixels : SignificantBits⁹³¹
- Pixels : SizeC⁹³²
- Pixels : SizeT⁹³³
- Pixels : SizeX⁹³⁴

⁹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

⁹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

⁹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

⁹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

⁹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

⁹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

- Pixels : SizeY⁹³⁵
- Pixels : SizeZ⁹³⁶
- Pixels : Type⁹³⁷
- Plane : ExposureTime⁹³⁸
- Plane : TheC⁹³⁹
- Plane : TheT⁹⁴⁰
- Plane : TheZ⁹⁴¹

Total supported: 29

Total unknown or missing: 446

19.2.17 ImarisHDFReader

This page lists supported metadata fields for the Bio-Formats Bitplane Imaris 5.5 (HDF) format reader.

These fields are from the [OME data model](#)⁹⁴². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 23 of them (4%).
- Of those, Bio-Formats fully or partially converts 23 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Bitplane Imaris 5.5 (HDF) format reader:

- Channel : Color⁹⁴³
- Channel : ID⁹⁴⁴
- Channel : SamplesPerPixel⁹⁴⁵
- Image : AcquisitionDate⁹⁴⁶
- Image : ID⁹⁴⁷
- Image : Name⁹⁴⁸
- Pixels : BigEndian⁹⁴⁹
- Pixels : DimensionOrder⁹⁵⁰
- Pixels : ID⁹⁵¹
- Pixels : Interleaved⁹⁵²

⁹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

⁹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁹⁴²<http://www.openmicroscopy.org/site/support/ome-model/>

⁹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Color

⁹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

- Pixels : PhysicalSizeX⁹⁵³
- Pixels : PhysicalSizeY⁹⁵⁴
- Pixels : PhysicalSizeZ⁹⁵⁵
- Pixels : SignificantBits⁹⁵⁶
- Pixels : SizeC⁹⁵⁷
- Pixels : SizeT⁹⁵⁸
- Pixels : SizeX⁹⁵⁹
- Pixels : SizeY⁹⁶⁰
- Pixels : SizeZ⁹⁶¹
- Pixels : Type⁹⁶²
- Plane : TheC⁹⁶³
- Plane : TheT⁹⁶⁴
- Plane : TheZ⁹⁶⁵

Total supported: 23

Total unknown or missing: 452

19.2.18 BrukerReader

This page lists supported metadata fields for the Bio-Formats Bruker format reader.

These fields are from the [OME data model](#)⁹⁶⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 23 of them (4%).
- Of those, Bio-Formats fully or partially converts 23 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Bruker format reader:

- Channel : ID⁹⁶⁷
- Channel : SamplesPerPixel⁹⁶⁸
- Experimenter : ID⁹⁶⁹
- Experimenter : Institution⁹⁷⁰

⁹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁹⁶⁶<http://www.openmicroscopy.org/site/support/ome-model/>

⁹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID

⁹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_Institution

- `Experimenter` : `LastName`⁹⁷¹
- `Image` : `AcquisitionDate`⁹⁷²
- `Image` : `ExperimenterRef`⁹⁷³
- `Image` : `ID`⁹⁷⁴
- `Image` : `Name`⁹⁷⁵
- `Pixels` : `BigEndian`⁹⁷⁶
- `Pixels` : `DimensionOrder`⁹⁷⁷
- `Pixels` : `ID`⁹⁷⁸
- `Pixels` : `Interleaved`⁹⁷⁹
- `Pixels` : `SignificantBits`⁹⁸⁰
- `Pixels` : `SizeC`⁹⁸¹
- `Pixels` : `SizeT`⁹⁸²
- `Pixels` : `SizeX`⁹⁸³
- `Pixels` : `SizeY`⁹⁸⁴
- `Pixels` : `SizeZ`⁹⁸⁵
- `Pixels` : `Type`⁹⁸⁶
- `Plane` : `TheC`⁹⁸⁷
- `Plane` : `TheT`⁹⁸⁸
- `Plane` : `TheZ`⁹⁸⁹

Total supported: 23

Total unknown or missing: 452

19.2.19 BurleighReader

This page lists supported metadata fields for the Bio-Formats Burleigh format reader.

These fields are from the [OME data model](#)⁹⁹⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

⁹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_LastName

⁹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID

⁹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁹⁹⁰<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Burleigh format reader:

- Channel : ID⁹⁹¹
- Channel : SamplesPerPixel⁹⁹²
- Image : AcquisitionDate⁹⁹³
- Image : ID⁹⁹⁴
- Image : Name⁹⁹⁵
- Pixels : BigEndian⁹⁹⁶
- Pixels : DimensionOrder⁹⁹⁷
- Pixels : ID⁹⁹⁸
- Pixels : Interleaved⁹⁹⁹
- Pixels : PhysicalSizeX¹⁰⁰⁰
- Pixels : PhysicalSizeY¹⁰⁰¹
- Pixels : PhysicalSizeZ¹⁰⁰²
- Pixels : SignificantBits¹⁰⁰³
- Pixels : SizeC¹⁰⁰⁴
- Pixels : SizeT¹⁰⁰⁵
- Pixels : SizeX¹⁰⁰⁶
- Pixels : SizeY¹⁰⁰⁷
- Pixels : SizeZ¹⁰⁰⁸
- Pixels : Type¹⁰⁰⁹
- Plane : TheC¹⁰¹⁰
- Plane : TheT¹⁰¹¹
- Plane : TheZ¹⁰¹²

Total supported: 22

Total unknown or missing: 453

- ⁹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
- ⁹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
- ⁹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
- ⁹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
- ⁹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
- ⁹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ⁹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ⁹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ⁹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ¹⁰⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ¹⁰⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ¹⁰⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ¹⁰⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ¹⁰⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ¹⁰⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ¹⁰⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ¹⁰⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ¹⁰⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ¹⁰⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ¹⁰¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ¹⁰¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ¹⁰¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.20 DNGReader

This page lists supported metadata fields for the Bio-Formats DNG format reader.

These fields are from the [OME data model](#)¹⁰¹³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats DNG format reader:

- Channel : ID¹⁰¹⁴
- Channel : SamplesPerPixel¹⁰¹⁵
- Image : AcquisitionDate¹⁰¹⁶
- Image : ID¹⁰¹⁷
- Image : Name¹⁰¹⁸
- Pixels : BigEndian¹⁰¹⁹
- Pixels : DimensionOrder¹⁰²⁰
- Pixels : ID¹⁰²¹
- Pixels : Interleaved¹⁰²²
- Pixels : SignificantBits¹⁰²³
- Pixels : SizeC¹⁰²⁴
- Pixels : SizeT¹⁰²⁵
- Pixels : SizeX¹⁰²⁶
- Pixels : SizeY¹⁰²⁷
- Pixels : SizeZ¹⁰²⁸
- Pixels : Type¹⁰²⁹
- Plane : TheC¹⁰³⁰
- Plane : TheT¹⁰³¹

¹⁰¹³<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁰¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁰¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁰¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁰¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁰¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁰¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁰²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁰²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁰²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁰²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁰²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁰²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁰²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁰²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁰²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁰²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁰³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁰³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

- Plane : TheZ¹⁰³²

Total supported: 19

Total unknown or missing: 456

19.2.21 CellomicsReader

This page lists supported metadata fields for the Bio-Formats Cellomics C01 format reader.

These fields are from the [OME data model](#)¹⁰³³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 31 of them (6%).
- Of those, Bio-Formats fully or partially converts 31 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Cellomics C01 format reader:

- Channel : ID¹⁰³⁴
- Channel : SamplesPerPixel¹⁰³⁵
- Image : AcquisitionDate¹⁰³⁶
- Image : ID¹⁰³⁷
- Image : Name¹⁰³⁸
- Pixels : BigEndian¹⁰³⁹
- Pixels : DimensionOrder¹⁰⁴⁰
- Pixels : ID¹⁰⁴¹
- Pixels : Interleaved¹⁰⁴²
- Pixels : PhysicalSizeX¹⁰⁴³
- Pixels : PhysicalSizeY¹⁰⁴⁴
- Pixels : SignificantBits¹⁰⁴⁵
- Pixels : SizeC¹⁰⁴⁶
- Pixels : SizeT¹⁰⁴⁷
- Pixels : SizeX¹⁰⁴⁸
- Pixels : SizeY¹⁰⁴⁹

¹⁰³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁰³³<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁰³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁰³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁰³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁰³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁰³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁰³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁰⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁰⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁰⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁰⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁰⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁰⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁰⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁰⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁰⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁰⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁰⁵⁰
- Pixels : Type¹⁰⁵¹
- Plane : TheC¹⁰⁵²
- Plane : TheT¹⁰⁵³
- Plane : TheZ¹⁰⁵⁴
- Plate : ColumnNamingConvention¹⁰⁵⁵
- Plate : ID¹⁰⁵⁶
- Plate : Name¹⁰⁵⁷
- Plate : RowNamingConvention¹⁰⁵⁸
- Well : Column¹⁰⁵⁹
- Well : ID¹⁰⁶⁰
- Well : Row¹⁰⁶¹
- WellSample : ID¹⁰⁶²
- WellSample : ImageRef¹⁰⁶³
- WellSample : Index¹⁰⁶⁴

Total supported: 31

Total unknown or missing: 444

19.2.22 CellSensReader

This page lists supported metadata fields for the Bio-Formats CellSens VSI format reader.

These fields are from the [OME data model](#)¹⁰⁶⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats CellSens VSI format reader:

- Channel : ID¹⁰⁶⁶
- Channel : SamplesPerPixel¹⁰⁶⁷

¹⁰⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁰⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁰⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁰⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁰⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁰⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ColumnNamingConvention

¹⁰⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID

¹⁰⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Name

¹⁰⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_RowNamingConvention

¹⁰⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column

¹⁰⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID

¹⁰⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row

¹⁰⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID

¹⁰⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID

¹⁰⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index

¹⁰⁶⁵<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁰⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁰⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate¹⁰⁶⁸
- Image : ID¹⁰⁶⁹
- Image : Name¹⁰⁷⁰
- Pixels : BigEndian¹⁰⁷¹
- Pixels : DimensionOrder¹⁰⁷²
- Pixels : ID¹⁰⁷³
- Pixels : Interleaved¹⁰⁷⁴
- Pixels : SignificantBits¹⁰⁷⁵
- Pixels : SizeC¹⁰⁷⁶
- Pixels : SizeT¹⁰⁷⁷
- Pixels : SizeX¹⁰⁷⁸
- Pixels : SizeY¹⁰⁷⁹
- Pixels : SizeZ¹⁰⁸⁰
- Pixels : Type¹⁰⁸¹
- Plane : TheC¹⁰⁸²
- Plane : TheT¹⁰⁸³
- Plane : TheZ¹⁰⁸⁴

Total supported: 19

Total unknown or missing: 456

19.2.23 CellVoyagerReader

This page lists supported metadata fields for the Bio-Formats CellVoyager format reader.

These fields are from the [OME data model](#)¹⁰⁸⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 34 of them (7%).
- Of those, Bio-Formats fully or partially converts 34 (100%).

¹⁰⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁰⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁰⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁰⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁰⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁰⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁰⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁰⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁰⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁰⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁰⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁰⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁰⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁰⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁰⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁰⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁰⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁰⁸⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats CellVoyager format reader:

- Channel : ID¹⁰⁸⁶
- Channel : Name¹⁰⁸⁷
- Channel : PinholeSize¹⁰⁸⁸
- Channel : SamplesPerPixel¹⁰⁸⁹
- Image : AcquisitionDate¹⁰⁹⁰
- Image : ID¹⁰⁹¹
- Image : Name¹⁰⁹²
- Pixels : BigEndian¹⁰⁹³
- Pixels : DimensionOrder¹⁰⁹⁴
- Pixels : ID¹⁰⁹⁵
- Pixels : Interleaved¹⁰⁹⁶
- Pixels : SignificantBits¹⁰⁹⁷
- Pixels : SizeC¹⁰⁹⁸
- Pixels : SizeT¹⁰⁹⁹
- Pixels : SizeX¹¹⁰⁰
- Pixels : SizeY¹¹⁰¹
- Pixels : SizeZ¹¹⁰²
- Pixels : Type¹¹⁰³
- Plane : TheC¹¹⁰⁴
- Plane : TheT¹¹⁰⁵
- Plane : TheZ¹¹⁰⁶
- Plate : Columns¹¹⁰⁷
- Plate : Rows¹¹⁰⁸
- PlateAcquisition : EndTime¹¹⁰⁹

¹⁰⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁰⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

¹⁰⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize

¹⁰⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁰⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁰⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁰⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁰⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁰⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁰⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁰⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁰⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁰⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁰⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹¹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Columns

¹¹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Rows

¹¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_EndTime

- PlateAcquisition : ID¹¹¹⁰
- PlateAcquisition : MaximumFieldCount¹¹¹¹
- PlateAcquisition : StartTime¹¹¹²
- Well : Column¹¹¹³
- Well : ID¹¹¹⁴
- Well : Row¹¹¹⁵
- WellSample : ID¹¹¹⁶
- WellSample : Index¹¹¹⁷
- WellSample : PositionX¹¹¹⁸
- WellSample : PositionY¹¹¹⁹

Total supported: 34

Total unknown or missing: 441

19.2.24 DeltavisionReader

This page lists supported metadata fields for the Bio-Formats Deltavision format reader.

These fields are from the [OME data model](#)¹¹²⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 52 of them (10%).
- Of those, Bio-Formats fully or partially converts 52 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Deltavision format reader:

- Channel : EmissionWavelength¹¹²¹
- Channel : ExcitationWavelength¹¹²²
- Channel : ID¹¹²³
- Channel : NDFilter¹¹²⁴
- Channel : Name¹¹²⁵
- Channel : SamplesPerPixel¹¹²⁶
- Detector : ID¹¹²⁷

¹¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_ID

¹¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

¹¹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_StartTime

¹¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column

¹¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID

¹¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row

¹¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID

¹¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index

¹¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionX

¹¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionY

¹¹²⁰<http://www.openmicroscopy.org/site/support/ome-model/>

¹¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

¹¹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

¹¹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹¹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_NDFilter

¹¹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

¹¹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹¹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

- Detector : Model¹¹²⁸
- Detector : Type¹¹²⁹
- DetectorSettings : Binning¹¹³⁰
- DetectorSettings : Gain¹¹³¹
- DetectorSettings : ID¹¹³²
- DetectorSettings : ReadOutRate¹¹³³
- Image : AcquisitionDate¹¹³⁴
- Image : Description¹¹³⁵
- Image : ID¹¹³⁶
- Image : InstrumentRef¹¹³⁷
- Image : Name¹¹³⁸
- ImagingEnvironment : Temperature¹¹³⁹
- Instrument : ID¹¹⁴⁰
- Objective : CalibratedMagnification¹¹⁴¹
- Objective : Correction¹¹⁴²
- Objective : ID¹¹⁴³
- Objective : Immersion¹¹⁴⁴
- Objective : LensNA¹¹⁴⁵
- Objective : Manufacturer¹¹⁴⁶
- Objective : Model¹¹⁴⁷
- Objective : NominalMagnification¹¹⁴⁸
- Objective : WorkingDistance¹¹⁴⁹
- ObjectiveSettings : ID¹¹⁵⁰
- Pixels : BigEndian¹¹⁵¹
- Pixels : DimensionOrder¹¹⁵²
- Pixels : ID¹¹⁵³

¹¹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹¹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

¹¹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

¹¹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

¹¹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

¹¹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ReadOutRate

¹¹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹¹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

¹¹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹¹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

¹¹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹¹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

¹¹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹¹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification

¹¹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

¹¹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

¹¹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

¹¹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

¹¹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹¹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹¹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

¹¹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_WorkingDistance

¹¹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

¹¹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹¹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹¹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

- Pixels : Interleaved¹¹⁵⁴
- Pixels : PhysicalSizeX¹¹⁵⁵
- Pixels : PhysicalSizeY¹¹⁵⁶
- Pixels : PhysicalSizeZ¹¹⁵⁷
- Pixels : SignificantBits¹¹⁵⁸
- Pixels : SizeC¹¹⁵⁹
- Pixels : SizeT¹¹⁶⁰
- Pixels : SizeX¹¹⁶¹
- Pixels : SizeY¹¹⁶²
- Pixels : SizeZ¹¹⁶³
- Pixels : Type¹¹⁶⁴
- Plane : DeltaT¹¹⁶⁵
- Plane : ExposureTime¹¹⁶⁶
- Plane : PositionX¹¹⁶⁷
- Plane : PositionY¹¹⁶⁸
- Plane : PositionZ¹¹⁶⁹
- Plane : TheC¹¹⁷⁰
- Plane : TheT¹¹⁷¹
- Plane : TheZ¹¹⁷²

Total supported: 52

Total unknown or missing: 423

19.2.25 DicomReader

This page lists supported metadata fields for the Bio-Formats DICOM format reader.

These fields are from the [OME data model](#)¹¹⁷³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 23 of them (4%).
- Of those, Bio-Formats fully or partially converts 23 (100%).

¹¹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹¹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹¹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹¹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹¹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹¹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹¹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹¹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹¹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹¹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹¹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹¹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

¹¹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

¹¹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

¹¹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

¹¹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

¹¹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹¹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹¹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹¹⁷³<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats DICOM format reader:

- Channel : ID¹¹⁷⁴
- Channel : SamplesPerPixel¹¹⁷⁵
- Image : AcquisitionDate¹¹⁷⁶
- Image : Description¹¹⁷⁷
- Image : ID¹¹⁷⁸
- Image : Name¹¹⁷⁹
- Pixels : BigEndian¹¹⁸⁰
- Pixels : DimensionOrder¹¹⁸¹
- Pixels : ID¹¹⁸²
- Pixels : Interleaved¹¹⁸³
- Pixels : PhysicalSizeX¹¹⁸⁴
- Pixels : PhysicalSizeY¹¹⁸⁵
- Pixels : PhysicalSizeZ¹¹⁸⁶
- Pixels : SignificantBits¹¹⁸⁷
- Pixels : SizeC¹¹⁸⁸
- Pixels : SizeT¹¹⁸⁹
- Pixels : SizeX¹¹⁹⁰
- Pixels : SizeY¹¹⁹¹
- Pixels : SizeZ¹¹⁹²
- Pixels : Type¹¹⁹³
- Plane : TheC¹¹⁹⁴
- Plane : TheT¹¹⁹⁵
- Plane : TheZ¹¹⁹⁶

Total supported: 23

Total unknown or missing: 452

- ¹¹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
- ¹¹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
- ¹¹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
- ¹¹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description
- ¹¹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
- ¹¹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
- ¹¹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ¹¹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ¹¹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ¹¹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ¹¹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ¹¹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ¹¹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ¹¹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ¹¹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ¹¹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ¹¹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ¹¹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ¹¹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ¹¹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ¹¹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ¹¹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ¹¹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.26 Ecat7Reader

This page lists supported metadata fields for the Bio-Formats ECAT7 format reader.

These fields are from the [OME data model](#)¹¹⁹⁷. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 23 of them (4%).
- Of those, Bio-Formats fully or partially converts 23 (100%).

Supported fields

These fields are fully supported by the Bio-Formats ECAT7 format reader:

- Channel : ID¹¹⁹⁸
- Channel : SamplesPerPixel¹¹⁹⁹
- Image : AcquisitionDate¹²⁰⁰
- Image : Description¹²⁰¹
- Image : ID¹²⁰²
- Image : Name¹²⁰³
- Pixels : BigEndian¹²⁰⁴
- Pixels : DimensionOrder¹²⁰⁵
- Pixels : ID¹²⁰⁶
- Pixels : Interleaved¹²⁰⁷
- Pixels : PhysicalSizeX¹²⁰⁸
- Pixels : PhysicalSizeY¹²⁰⁹
- Pixels : PhysicalSizeZ¹²¹⁰
- Pixels : SignificantBits¹²¹¹
- Pixels : SizeC¹²¹²
- Pixels : SizeT¹²¹³
- Pixels : SizeX¹²¹⁴
- Pixels : SizeY¹²¹⁵

¹¹⁹⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹¹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹¹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹²⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹²⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

¹²⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹²⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹²⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹²⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹²⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹²⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹²⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹²⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹²¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹²¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹²¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹²¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹²¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹²¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹²¹⁶
- Pixels : Type¹²¹⁷
- Plane : TheC¹²¹⁸
- Plane : TheT¹²¹⁹
- Plane : TheZ¹²²⁰

Total supported: 23

Total unknown or missing: 452

19.2.27 EPSReader

This page lists supported metadata fields for the Bio-Formats Encapsulated PostScript format reader.

These fields are from the [OME data model](#)¹²²¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Encapsulated PostScript format reader:

- Channel : ID¹²²²
- Channel : SamplesPerPixel¹²²³
- Image : AcquisitionDate¹²²⁴
- Image : ID¹²²⁵
- Image : Name¹²²⁶
- Pixels : BigEndian¹²²⁷
- Pixels : DimensionOrder¹²²⁸
- Pixels : ID¹²²⁹
- Pixels : Interleaved¹²³⁰
- Pixels : SignificantBits¹²³¹
- Pixels : SizeC¹²³²
- Pixels : SizeT¹²³³

¹²¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹²¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹²¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹²¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹²²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹²²¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹²²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹²²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹²²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹²²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹²²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹²²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹²²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹²²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹²³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹²³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹²³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹²³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

- Pixels : SizeX¹²³⁴
- Pixels : SizeY¹²³⁵
- Pixels : SizeZ¹²³⁶
- Pixels : Type¹²³⁷
- Plane : TheC¹²³⁸
- Plane : TheT¹²³⁹
- Plane : TheZ¹²⁴⁰

Total supported: 19

Total unknown or missing: 456

19.2.28 FlexReader

This page lists supported metadata fields for the Bio-Formats Evotec Flex format reader.

These fields are from the [OME data model](#)¹²⁴¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 69 of them (14%).
- Of those, Bio-Formats fully or partially converts 69 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Evotec Flex format reader:

- Channel : ID¹²⁴²
- Channel : LightSourceSettingsID¹²⁴³
- Channel : Name¹²⁴⁴
- Channel : SamplesPerPixel¹²⁴⁵
- Detector : ID¹²⁴⁶
- Detector : Type¹²⁴⁷
- DetectorSettings : Binning¹²⁴⁸
- DetectorSettings : ID¹²⁴⁹
- Dichroic : ID¹²⁵⁰
- Dichroic : Model¹²⁵¹

¹²³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹²³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹²³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹²³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹²³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹²³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹²⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹²⁴¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹²⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹²⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_ID

¹²⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

¹²⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹²⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

¹²⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

¹²⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

¹²⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

¹²⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dichroic_ID

¹²⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

- Filter : FilterWheel¹²⁵²
- Filter : ID¹²⁵³
- Filter : Model¹²⁵⁴
- Image : AcquisitionDate¹²⁵⁵
- Image : ID¹²⁵⁶
- Image : InstrumentRef¹²⁵⁷
- Image : Name¹²⁵⁸
- Instrument : ID¹²⁵⁹
- Laser : ID¹²⁶⁰
- Laser : LaserMedium¹²⁶¹
- Laser : Type¹²⁶²
- Laser : Wavelength¹²⁶³
- LightPath : DichroicRef¹²⁶⁴
- LightPath : EmissionFilterRef¹²⁶⁵
- LightPath : ExcitationFilterRef¹²⁶⁶
- Objective : CalibratedMagnification¹²⁶⁷
- Objective : Correction¹²⁶⁸
- Objective : ID¹²⁶⁹
- Objective : Immersion¹²⁷⁰
- Objective : LensNA¹²⁷¹
- ObjectiveSettings : ID¹²⁷²
- Pixels : BigEndian¹²⁷³
- Pixels : DimensionOrder¹²⁷⁴
- Pixels : ID¹²⁷⁵
- Pixels : Interleaved¹²⁷⁶
- Pixels : PhysicalSizeX¹²⁷⁷

¹²⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_FilterWheel

¹²⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_ID

¹²⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹²⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹²⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹²⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

¹²⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹²⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹²⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

¹²⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_LaserMedium

¹²⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Type

¹²⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Wavelength

¹²⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DichroicRef_ID

¹²⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

¹²⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

¹²⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification

¹²⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

¹²⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

¹²⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

¹²⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

¹²⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

¹²⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹²⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹²⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹²⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹²⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

- Pixels : PhysicalSizeY¹²⁷⁸
- Pixels : SignificantBits¹²⁷⁹
- Pixels : SizeC¹²⁸⁰
- Pixels : SizeT¹²⁸¹
- Pixels : SizeX¹²⁸²
- Pixels : SizeY¹²⁸³
- Pixels : SizeZ¹²⁸⁴
- Pixels : Type¹²⁸⁵
- Plane : DeltaT¹²⁸⁶
- Plane : ExposureTime¹²⁸⁷
- Plane : PositionX¹²⁸⁸
- Plane : PositionY¹²⁸⁹
- Plane : PositionZ¹²⁹⁰
- Plane : TheC¹²⁹¹
- Plane : TheT¹²⁹²
- Plane : TheZ¹²⁹³
- Plate : ColumnNamingConvention¹²⁹⁴
- Plate : ExternalIdentifier¹²⁹⁵
- Plate : ID¹²⁹⁶
- Plate : Name¹²⁹⁷
- Plate : RowNamingConvention¹²⁹⁸
- PlateAcquisition : ID¹²⁹⁹
- PlateAcquisition : MaximumFieldCount¹³⁰⁰
- PlateAcquisition : StartTime¹³⁰¹
- PlateAcquisition : WellSampleRef¹³⁰²
- Well : Column¹³⁰³

¹²⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹²⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹²⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹²⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹²⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹²⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹²⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹²⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹²⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

¹²⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

¹²⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

¹²⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

¹²⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

¹²⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹²⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹²⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹²⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ColumnNamingConvention

¹²⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ExternalIdentifier

¹²⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID

¹²⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Name

¹²⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_RowNamingConvention

¹²⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_ID

¹³⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

¹³⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_StartTime

¹³⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSampleRef_ID

¹³⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column

- Well : ID¹³⁰⁴
- Well : Row¹³⁰⁵
- WellSample : ID¹³⁰⁶
- WellSample : ImageRef¹³⁰⁷
- WellSample : Index¹³⁰⁸
- WellSample : PositionX¹³⁰⁹
- WellSample : PositionY¹³¹⁰

Total supported: 69

Total unknown or missing: 406

19.2.29 FEIReader

This page lists supported metadata fields for the Bio-Formats FEI/Philips format reader.

These fields are from the [OME data model](#)¹³¹¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats FEI/Philips format reader:

- Channel : ID¹³¹²
- Channel : SamplesPerPixel¹³¹³
- Image : AcquisitionDate¹³¹⁴
- Image : ID¹³¹⁵
- Image : Name¹³¹⁶
- Pixels : BigEndian¹³¹⁷
- Pixels : DimensionOrder¹³¹⁸
- Pixels : ID¹³¹⁹
- Pixels : Interleaved¹³²⁰
- Pixels : SignificantBits¹³²¹

¹³⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID

¹³⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row

¹³⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID

¹³⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID

¹³⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index

¹³⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionX

¹³¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionY

¹³¹¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹³¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹³¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹³¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹³¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹³¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹³¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹³¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹³¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹³²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹³²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

- Pixels : SizeC¹³²²
- Pixels : SizeT¹³²³
- Pixels : SizeX¹³²⁴
- Pixels : SizeY¹³²⁵
- Pixels : SizeZ¹³²⁶
- Pixels : Type¹³²⁷
- Plane : TheC¹³²⁸
- Plane : TheT¹³²⁹
- Plane : TheZ¹³³⁰

Total supported: 19

Total unknown or missing: 456

19.2.30 FEITiffReader

This page lists supported metadata fields for the Bio-Formats FEI TIFF format reader.

These fields are from the [OME data model](#)¹³³¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 39 of them (8%).
- Of those, Bio-Formats fully or partially converts 39 (100%).

Supported fields

These fields are fully supported by the Bio-Formats FEI TIFF format reader:

- Channel : ID¹³³²
- Channel : SamplesPerPixel¹³³³
- Detector : ID¹³³⁴
- Detector : Model¹³³⁵
- Detector : Type¹³³⁶
- Experimenter : ID¹³³⁷
- Experimenter : LastName¹³³⁸
- Image : AcquisitionDate¹³³⁹

¹³²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹³²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹³²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹³²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹³²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹³²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹³²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹³²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹³³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹³³¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹³³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹³³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹³³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

¹³³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹³³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

¹³³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID

¹³³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_LastName

¹³³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

- Image : Description¹³⁴⁰
- Image : ID¹³⁴¹
- Image : InstrumentRef¹³⁴²
- Image : Name¹³⁴³
- Instrument : ID¹³⁴⁴
- Microscope : Model¹³⁴⁵
- Objective : Correction¹³⁴⁶
- Objective : ID¹³⁴⁷
- Objective : Immersion¹³⁴⁸
- Objective : NominalMagnification¹³⁴⁹
- Pixels : BigEndian¹³⁵⁰
- Pixels : DimensionOrder¹³⁵¹
- Pixels : ID¹³⁵²
- Pixels : Interleaved¹³⁵³
- Pixels : PhysicalSizeX¹³⁵⁴
- Pixels : PhysicalSizeY¹³⁵⁵
- Pixels : SignificantBits¹³⁵⁶
- Pixels : SizeC¹³⁵⁷
- Pixels : SizeT¹³⁵⁸
- Pixels : SizeX¹³⁵⁹
- Pixels : SizeY¹³⁶⁰
- Pixels : SizeZ¹³⁶¹
- Pixels : TimeIncrement¹³⁶²
- Pixels : Type¹³⁶³
- Plane : TheC¹³⁶⁴
- Plane : TheT¹³⁶⁵

¹³⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

¹³⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹³⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

¹³⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹³⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹³⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹³⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

¹³⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

¹³⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

¹³⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

¹³⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹³⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹³⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹³⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹³⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹³⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹³⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹³⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹³⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹³⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹³⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹³⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹³⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

¹³⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹³⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹³⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

- Plane : TheZ¹³⁶⁶
- StageLabel : Name¹³⁶⁷
- StageLabel : X¹³⁶⁸
- StageLabel : Y¹³⁶⁹
- StageLabel : Z¹³⁷⁰

Total supported: 39

Total unknown or missing: 436

19.2.31 FitsReader

This page lists supported metadata fields for the Bio-Formats Flexible Image Transport System format reader.

These fields are from the [OME data model](#)¹³⁷¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Flexible Image Transport System format reader:

- Channel : ID¹³⁷²
- Channel : SamplesPerPixel¹³⁷³
- Image : AcquisitionDate¹³⁷⁴
- Image : ID¹³⁷⁵
- Image : Name¹³⁷⁶
- Pixels : BigEndian¹³⁷⁷
- Pixels : DimensionOrder¹³⁷⁸
- Pixels : ID¹³⁷⁹
- Pixels : Interleaved¹³⁸⁰
- Pixels : SignificantBits¹³⁸¹
- Pixels : SizeC¹³⁸²
- Pixels : SizeT¹³⁸³

¹³⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹³⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Name

¹³⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_X

¹³⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Y

¹³⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Z

¹³⁷¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹³⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹³⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹³⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹³⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹³⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹³⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹³⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹³⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹³⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹³⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹³⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹³⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

- Pixels : SizeX¹³⁸⁴
- Pixels : SizeY¹³⁸⁵
- Pixels : SizeZ¹³⁸⁶
- Pixels : Type¹³⁸⁷
- Plane : TheC¹³⁸⁸
- Plane : TheT¹³⁸⁹
- Plane : TheZ¹³⁹⁰

Total supported: 19

Total unknown or missing: 456

19.2.32 GatanDM2Reader

This page lists supported metadata fields for the Bio-Formats Gatan DM2 format reader.

These fields are from the [OME data model](#)¹³⁹¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 30 of them (6%).
- Of those, Bio-Formats fully or partially converts 30 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Gatan DM2 format reader:

- Channel : ID¹³⁹²
- Channel : SamplesPerPixel¹³⁹³
- Detector : ID¹³⁹⁴
- DetectorSettings : Binning¹³⁹⁵
- DetectorSettings : ID¹³⁹⁶
- Experimenter : FirstName¹³⁹⁷
- Experimenter : ID¹³⁹⁸
- Experimenter : LastName¹³⁹⁹
- Image : AcquisitionDate¹⁴⁰⁰
- Image : ExperimenterRef¹⁴⁰¹

¹³⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹³⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹³⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹³⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹³⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹³⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹³⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹³⁹¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹³⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹³⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹³⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

¹³⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

¹³⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

¹³⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_FirstName

¹³⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID

¹³⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_LastName

¹⁴⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁴⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID

- Image : ID¹⁴⁰²
- Image : InstrumentRef¹⁴⁰³
- Image : Name¹⁴⁰⁴
- Instrument : ID¹⁴⁰⁵
- Pixels : BigEndian¹⁴⁰⁶
- Pixels : DimensionOrder¹⁴⁰⁷
- Pixels : ID¹⁴⁰⁸
- Pixels : Interleaved¹⁴⁰⁹
- Pixels : PhysicalSizeX¹⁴¹⁰
- Pixels : PhysicalSizeY¹⁴¹¹
- Pixels : SignificantBits¹⁴¹²
- Pixels : SizeC¹⁴¹³
- Pixels : SizeT¹⁴¹⁴
- Pixels : SizeX¹⁴¹⁵
- Pixels : SizeY¹⁴¹⁶
- Pixels : SizeZ¹⁴¹⁷
- Pixels : Type¹⁴¹⁸
- Plane : TheC¹⁴¹⁹
- Plane : TheT¹⁴²⁰
- Plane : TheZ¹⁴²¹

Total supported: 30

Total unknown or missing: 445

19.2.33 GatanReader

This page lists supported metadata fields for the Bio-Formats Gatan Digital Micrograph format reader.

These fields are from the [OME data model](#)¹⁴²². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- ¹⁴⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
- ¹⁴⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID
- ¹⁴⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
- ¹⁴⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID
- ¹⁴⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ¹⁴⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ¹⁴⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ¹⁴⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ¹⁴¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ¹⁴¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ¹⁴¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ¹⁴¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ¹⁴¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ¹⁴¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ¹⁴¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ¹⁴¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ¹⁴¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ¹⁴¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ¹⁴²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ¹⁴²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ
- ¹⁴²²<http://www.openmicroscopy.org/site/support/ome-model/>

- The file format itself supports 36 of them (7%).
- Of those, Bio-Formats fully or partially converts 36 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Gatan Digital Micrograph format reader:

- Channel : AcquisitionMode¹⁴²³
- Channel : ID¹⁴²⁴
- Channel : SamplesPerPixel¹⁴²⁵
- Detector : ID¹⁴²⁶
- DetectorSettings : ID¹⁴²⁷
- DetectorSettings : Voltage¹⁴²⁸
- Image : AcquisitionDate¹⁴²⁹
- Image : ID¹⁴³⁰
- Image : Name¹⁴³¹
- Instrument : ID¹⁴³²
- Objective : Correction¹⁴³³
- Objective : ID¹⁴³⁴
- Objective : Immersion¹⁴³⁵
- Objective : NominalMagnification¹⁴³⁶
- ObjectiveSettings : ID¹⁴³⁷
- Pixels : BigEndian¹⁴³⁸
- Pixels : DimensionOrder¹⁴³⁹
- Pixels : ID¹⁴⁴⁰
- Pixels : Interleaved¹⁴⁴¹
- Pixels : PhysicalSizeX¹⁴⁴²
- Pixels : PhysicalSizeY¹⁴⁴³
- Pixels : PhysicalSizeZ¹⁴⁴⁴
- Pixels : SignificantBits¹⁴⁴⁵

¹⁴²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_AcquisitionMode

¹⁴²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁴²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁴²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

¹⁴²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

¹⁴²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Voltage

¹⁴²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁴³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁴³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁴³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹⁴³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

¹⁴³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

¹⁴³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

¹⁴³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

¹⁴³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

¹⁴³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁴³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁴⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁴⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁴⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁴⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁴⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁴⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

- Pixels : SizeC¹⁴⁴⁶
- Pixels : SizeT¹⁴⁴⁷
- Pixels : SizeX¹⁴⁴⁸
- Pixels : SizeY¹⁴⁴⁹
- Pixels : SizeZ¹⁴⁵⁰
- Pixels : Type¹⁴⁵¹
- Plane : ExposureTime¹⁴⁵²
- Plane : PositionX¹⁴⁵³
- Plane : PositionY¹⁴⁵⁴
- Plane : PositionZ¹⁴⁵⁵
- Plane : TheC¹⁴⁵⁶
- Plane : TheT¹⁴⁵⁷
- Plane : TheZ¹⁴⁵⁸

Total supported: 36

Total unknown or missing: 439

19.2.34 GIFReader

This page lists supported metadata fields for the Bio-Formats Graphics Interchange Format format reader.

These fields are from the [OME data model](#)¹⁴⁵⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Graphics Interchange Format format reader:

- Channel : ID¹⁴⁶⁰
- Channel : SamplesPerPixel¹⁴⁶¹
- Image : AcquisitionDate¹⁴⁶²
- Image : ID¹⁴⁶³

¹⁴⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁴⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁴⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁴⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁴⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁴⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁴⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

¹⁴⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

¹⁴⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

¹⁴⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

¹⁴⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁴⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁴⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁴⁵⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁴⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁴⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁴⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁴⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

- Image : Name¹⁴⁶⁴
- Pixels : BigEndian¹⁴⁶⁵
- Pixels : DimensionOrder¹⁴⁶⁶
- Pixels : ID¹⁴⁶⁷
- Pixels : Interleaved¹⁴⁶⁸
- Pixels : SignificantBits¹⁴⁶⁹
- Pixels : SizeC¹⁴⁷⁰
- Pixels : SizeT¹⁴⁷¹
- Pixels : SizeX¹⁴⁷²
- Pixels : SizeY¹⁴⁷³
- Pixels : SizeZ¹⁴⁷⁴
- Pixels : Type¹⁴⁷⁵
- Plane : TheC¹⁴⁷⁶
- Plane : TheT¹⁴⁷⁷
- Plane : TheZ¹⁴⁷⁸

Total supported: 19

Total unknown or missing: 456

19.2.35 NAFReader

This page lists supported metadata fields for the Bio-Formats Hamamatsu Aquacosmos format reader.

These fields are from the [OME data model](#)¹⁴⁷⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Hamamatsu Aquacosmos format reader:

- Channel : ID¹⁴⁸⁰
- Channel : SamplesPerPixel¹⁴⁸¹

¹⁴⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁴⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁴⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁴⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁴⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁴⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁴⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁴⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁴⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁴⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁴⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁴⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁴⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁴⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁴⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁴⁷⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁴⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁴⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate¹⁴⁸²
- Image : ID¹⁴⁸³
- Image : Name¹⁴⁸⁴
- Pixels : BigEndian¹⁴⁸⁵
- Pixels : DimensionOrder¹⁴⁸⁶
- Pixels : ID¹⁴⁸⁷
- Pixels : Interleaved¹⁴⁸⁸
- Pixels : SignificantBits¹⁴⁸⁹
- Pixels : SizeC¹⁴⁹⁰
- Pixels : SizeT¹⁴⁹¹
- Pixels : SizeX¹⁴⁹²
- Pixels : SizeY¹⁴⁹³
- Pixels : SizeZ¹⁴⁹⁴
- Pixels : Type¹⁴⁹⁵
- Plane : TheC¹⁴⁹⁶
- Plane : TheT¹⁴⁹⁷
- Plane : TheZ¹⁴⁹⁸

Total supported: 19

Total unknown or missing: 456

19.2.36 HISReader

This page lists supported metadata fields for the Bio-Formats Hamamatsu HIS format reader.

These fields are from the [OME data model](#)¹⁴⁹⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 27 of them (5%).
- Of those, Bio-Formats fully or partially converts 27 (100%).

¹⁴⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁴⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁴⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁴⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁴⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁴⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁴⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁴⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁴⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁴⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁴⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁴⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁴⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁴⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁴⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁴⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁴⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁴⁹⁹<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Hamamatsu HIS format reader:

- Channel : ID¹⁵⁰⁰
- Channel : SamplesPerPixel¹⁵⁰¹
- Detector : ID¹⁵⁰²
- Detector : Offset¹⁵⁰³
- Detector : Type¹⁵⁰⁴
- DetectorSettings : Binning¹⁵⁰⁵
- DetectorSettings : ID¹⁵⁰⁶
- Image : AcquisitionDate¹⁵⁰⁷
- Image : ID¹⁵⁰⁸
- Image : InstrumentRef¹⁵⁰⁹
- Image : Name¹⁵¹⁰
- Instrument : ID¹⁵¹¹
- Pixels : BigEndian¹⁵¹²
- Pixels : DimensionOrder¹⁵¹³
- Pixels : ID¹⁵¹⁴
- Pixels : Interleaved¹⁵¹⁵
- Pixels : SignificantBits¹⁵¹⁶
- Pixels : SizeC¹⁵¹⁷
- Pixels : SizeT¹⁵¹⁸
- Pixels : SizeX¹⁵¹⁹
- Pixels : SizeY¹⁵²⁰
- Pixels : SizeZ¹⁵²¹
- Pixels : Type¹⁵²²
- Plane : ExposureTime¹⁵²³

¹⁵⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁵⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁵⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

¹⁵⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Offset

¹⁵⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

¹⁵⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

¹⁵⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

¹⁵⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁵⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁵⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

¹⁵¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁵¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹⁵¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁵¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁵¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁵¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁵¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁵¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁵¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁵¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁵²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁵²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁵²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁵²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

- Plane : TheC¹⁵²⁴
- Plane : TheT¹⁵²⁵
- Plane : TheZ¹⁵²⁶

Total supported: 27

Total unknown or missing: 448

19.2.37 NDPIReader

This page lists supported metadata fields for the Bio-Formats Hamamatsu NDPI format reader.

These fields are from the [OME data model](#)¹⁵²⁷. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 21 of them (4%).
- Of those, Bio-Formats fully or partially converts 21 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Hamamatsu NDPI format reader:

- Channel : ID¹⁵²⁸
- Channel : SamplesPerPixel¹⁵²⁹
- Image : AcquisitionDate¹⁵³⁰
- Image : ID¹⁵³¹
- Image : Name¹⁵³²
- Pixels : BigEndian¹⁵³³
- Pixels : DimensionOrder¹⁵³⁴
- Pixels : ID¹⁵³⁵
- Pixels : Interleaved¹⁵³⁶
- Pixels : PhysicalSizeX¹⁵³⁷
- Pixels : PhysicalSizeY¹⁵³⁸
- Pixels : SignificantBits¹⁵³⁹
- Pixels : SizeC¹⁵⁴⁰
- Pixels : SizeT¹⁵⁴¹

¹⁵²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁵²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁵²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁵²⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁵²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁵²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁵³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁵³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁵³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁵³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁵³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁵³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁵³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁵³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁵³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁵³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁵⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁵⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

- Pixels : SizeX¹⁵⁴²
- Pixels : SizeY¹⁵⁴³
- Pixels : SizeZ¹⁵⁴⁴
- Pixels : Type¹⁵⁴⁵
- Plane : TheC¹⁵⁴⁶
- Plane : TheT¹⁵⁴⁷
- Plane : TheZ¹⁵⁴⁸

Total supported: 21

Total unknown or missing: 454

19.2.38 HamamatsuVMSReader

This page lists supported metadata fields for the Bio-Formats Hamamatsu VMS format reader.

These fields are from the [OME data model](#)¹⁵⁴⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 26 of them (5%).
- Of those, Bio-Formats fully or partially converts 26 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Hamamatsu VMS format reader:

- Channel : ID¹⁵⁵⁰
- Channel : SamplesPerPixel¹⁵⁵¹
- Image : AcquisitionDate¹⁵⁵²
- Image : ID¹⁵⁵³
- Image : InstrumentRef¹⁵⁵⁴
- Image : Name¹⁵⁵⁵
- Instrument : ID¹⁵⁵⁶
- Objective : ID¹⁵⁵⁷
- Objective : NominalMagnification¹⁵⁵⁸
- ObjectiveSettings : ID¹⁵⁵⁹

¹⁵⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁵⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁵⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁵⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁵⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁵⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁵⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁵⁴⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁵⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁵⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁵⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁵⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁵⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

¹⁵⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁵⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹⁵⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

¹⁵⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

¹⁵⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

- Pixels : BigEndian¹⁵⁶⁰
- Pixels : DimensionOrder¹⁵⁶¹
- Pixels : ID¹⁵⁶²
- Pixels : Interleaved¹⁵⁶³
- Pixels : PhysicalSizeX¹⁵⁶⁴
- Pixels : PhysicalSizeY¹⁵⁶⁵
- Pixels : SignificantBits¹⁵⁶⁶
- Pixels : SizeC¹⁵⁶⁷
- Pixels : SizeT¹⁵⁶⁸
- Pixels : SizeX¹⁵⁶⁹
- Pixels : SizeY¹⁵⁷⁰
- Pixels : SizeZ¹⁵⁷¹
- Pixels : Type¹⁵⁷²
- Plane : TheC¹⁵⁷³
- Plane : TheT¹⁵⁷⁴
- Plane : TheZ¹⁵⁷⁵

Total supported: 26

Total unknown or missing: 449

19.2.39 HitachiReader

This page lists supported metadata fields for the Bio-Formats Hitachi format reader.

These fields are from the [OME data model](#)¹⁵⁷⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 31 of them (6%).
- Of those, Bio-Formats fully or partially converts 31 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Hitachi format reader:

- Channel : ID¹⁵⁷⁷

¹⁵⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
¹⁵⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
¹⁵⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
¹⁵⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
¹⁵⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
¹⁵⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
¹⁵⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
¹⁵⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
¹⁵⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
¹⁵⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
¹⁵⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
¹⁵⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
¹⁵⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
¹⁵⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
¹⁵⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
¹⁵⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ
¹⁵⁷⁶<http://www.openmicroscopy.org/site/support/ome-model/>
¹⁵⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

- Channel : SamplesPerPixel¹⁵⁷⁸
- Image : AcquisitionDate¹⁵⁷⁹
- Image : ID¹⁵⁸⁰
- Image : InstrumentRef¹⁵⁸¹
- Image : Name¹⁵⁸²
- Instrument : ID¹⁵⁸³
- Microscope : Model¹⁵⁸⁴
- Microscope : SerialNumber¹⁵⁸⁵
- Objective : ID¹⁵⁸⁶
- Objective : WorkingDistance¹⁵⁸⁷
- ObjectiveSettings : ID¹⁵⁸⁸
- Pixels : BigEndian¹⁵⁸⁹
- Pixels : DimensionOrder¹⁵⁹⁰
- Pixels : ID¹⁵⁹¹
- Pixels : Interleaved¹⁵⁹²
- Pixels : PhysicalSizeX¹⁵⁹³
- Pixels : PhysicalSizeY¹⁵⁹⁴
- Pixels : SignificantBits¹⁵⁹⁵
- Pixels : SizeC¹⁵⁹⁶
- Pixels : SizeT¹⁵⁹⁷
- Pixels : SizeX¹⁵⁹⁸
- Pixels : SizeY¹⁵⁹⁹
- Pixels : SizeZ¹⁶⁰⁰
- Pixels : Type¹⁶⁰¹
- Plane : PositionX¹⁶⁰²
- Plane : PositionY¹⁶⁰³

¹⁵⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁵⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁵⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁵⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

¹⁵⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁵⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹⁵⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹⁵⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

¹⁵⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

¹⁵⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_WorkingDistance

¹⁵⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

¹⁵⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁵⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁵⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁵⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁵⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁵⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁵⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁵⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁵⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁵⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁵⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁶⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁶⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁶⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

¹⁶⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

- Plane : PositionZ¹⁶⁰⁴
- Plane : TheC¹⁶⁰⁵
- Plane : TheT¹⁶⁰⁶
- Plane : TheZ¹⁶⁰⁷

Total supported: 31

Total unknown or missing: 444

19.2.40 ICSReader

This page lists supported metadata fields for the Bio-Formats Image Cytometry Standard format reader.

These fields are from the [OME data model](#)¹⁶⁰⁸. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 72 of them (15%).
- Of those, Bio-Formats fully or partially converts 72 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Image Cytometry Standard format reader:

- Channel : EmissionWavelength¹⁶⁰⁹
- Channel : ExcitationWavelength¹⁶¹⁰
- Channel : ID¹⁶¹¹
- Channel : Name¹⁶¹²
- Channel : PinholeSize¹⁶¹³
- Channel : SamplesPerPixel¹⁶¹⁴
- Detector : ID¹⁶¹⁵
- Detector : Manufacturer¹⁶¹⁶
- Detector : Model¹⁶¹⁷
- Detector : Type¹⁶¹⁸
- DetectorSettings : Gain¹⁶¹⁹
- DetectorSettings : ID¹⁶²⁰
- Dichroic : ID¹⁶²¹

¹⁶⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

¹⁶⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁶⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁶⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁶⁰⁸<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁶⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

¹⁶¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

¹⁶¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁶¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

¹⁶¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize

¹⁶¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁶¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

¹⁶¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹⁶¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹⁶¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

¹⁶¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

¹⁶²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

¹⁶²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dichroic_ID

- Dichroic : Model¹⁶²²
- Experiment : ID¹⁶²³
- Experiment : Type¹⁶²⁴
- Experimenter : ID¹⁶²⁵
- Experimenter : LastName¹⁶²⁶
- Filter : ID¹⁶²⁷
- Filter : Model¹⁶²⁸
- FilterSet : DichroicRef¹⁶²⁹
- FilterSet : EmissionFilterRef¹⁶³⁰
- FilterSet : ExcitationFilterRef¹⁶³¹
- FilterSet : ID¹⁶³²
- FilterSet : Model¹⁶³³
- Image : AcquisitionDate¹⁶³⁴
- Image : Description¹⁶³⁵
- Image : ID¹⁶³⁶
- Image : InstrumentRef¹⁶³⁷
- Image : Name¹⁶³⁸
- Instrument : ID¹⁶³⁹
- Laser : ID¹⁶⁴⁰
- Laser : LaserMedium¹⁶⁴¹
- Laser : Manufacturer¹⁶⁴²
- Laser : Model¹⁶⁴³
- Laser : Power¹⁶⁴⁴
- Laser : RepetitionRate¹⁶⁴⁵
- Laser : Type¹⁶⁴⁶
- Laser : Wavelength¹⁶⁴⁷

¹⁶²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹⁶²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_ID

¹⁶²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_Type

¹⁶²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID

¹⁶²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_LastName

¹⁶²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_ID

¹⁶²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹⁶²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DichroicRef_ID

¹⁶³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

¹⁶³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

¹⁶³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterSet_ID

¹⁶³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹⁶³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁶³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

¹⁶³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁶³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

¹⁶³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁶³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹⁶⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

¹⁶⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_LaserMedium

¹⁶⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹⁶⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹⁶⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power

¹⁶⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_RepetitionRate

¹⁶⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Type

¹⁶⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Wavelength

- Microscope : Manufacturer¹⁶⁴⁸
- Microscope : Model¹⁶⁴⁹
- Objective : CalibratedMagnification¹⁶⁵⁰
- Objective : Correction¹⁶⁵¹
- Objective : ID¹⁶⁵²
- Objective : Immersion¹⁶⁵³
- Objective : LensNA¹⁶⁵⁴
- Objective : Model¹⁶⁵⁵
- Objective : WorkingDistance¹⁶⁵⁶
- ObjectiveSettings : ID¹⁶⁵⁷
- Pixels : BigEndian¹⁶⁵⁸
- Pixels : DimensionOrder¹⁶⁵⁹
- Pixels : ID¹⁶⁶⁰
- Pixels : Interleaved¹⁶⁶¹
- Pixels : PhysicalSizeX¹⁶⁶²
- Pixels : PhysicalSizeY¹⁶⁶³
- Pixels : PhysicalSizeZ¹⁶⁶⁴
- Pixels : SignificantBits¹⁶⁶⁵
- Pixels : SizeC¹⁶⁶⁶
- Pixels : SizeT¹⁶⁶⁷
- Pixels : SizeX¹⁶⁶⁸
- Pixels : SizeY¹⁶⁶⁹
- Pixels : SizeZ¹⁶⁷⁰
- Pixels : TimeIncrement¹⁶⁷¹
- Pixels : Type¹⁶⁷²
- Plane : DeltaT¹⁶⁷³

¹⁶⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹⁶⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹⁶⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification

¹⁶⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

¹⁶⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

¹⁶⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

¹⁶⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

¹⁶⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹⁶⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_WorkingDistance

¹⁶⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

¹⁶⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁶⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁶⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁶⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁶⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁶⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁶⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁶⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁶⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁶⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁶⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁶⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁶⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁶⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

¹⁶⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁶⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

- Plane : ExposureTime¹⁶⁷⁴
- Plane : PositionX¹⁶⁷⁵
- Plane : PositionY¹⁶⁷⁶
- Plane : PositionZ¹⁶⁷⁷
- Plane : TheC¹⁶⁷⁸
- Plane : TheT¹⁶⁷⁹
- Plane : TheZ¹⁶⁸⁰

Total supported: 72

Total unknown or missing: 403

19.2.41 ImaconReader

This page lists supported metadata fields for the Bio-Formats Imacon format reader.

These fields are from the [OME data model](#)¹⁶⁸¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 23 of them (4%).
- Of those, Bio-Formats fully or partially converts 23 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Imacon format reader:

- Channel : ID¹⁶⁸²
- Channel : SamplesPerPixel¹⁶⁸³
- Experimenter : FirstName¹⁶⁸⁴
- Experimenter : ID¹⁶⁸⁵
- Experimenter : LastName¹⁶⁸⁶
- Image : AcquisitionDate¹⁶⁸⁷
- Image : ExperimenterRef¹⁶⁸⁸
- Image : ID¹⁶⁸⁹
- Image : Name¹⁶⁹⁰
- Pixels : BigEndian¹⁶⁹¹

¹⁶⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

¹⁶⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

¹⁶⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

¹⁶⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

¹⁶⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁶⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁶⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁶⁸¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁶⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁶⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁶⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_FirstName

¹⁶⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID

¹⁶⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_LastName

¹⁶⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁶⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID

¹⁶⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁶⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁶⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

- Pixels : DimensionOrder¹⁶⁹²
- Pixels : ID¹⁶⁹³
- Pixels : Interleaved¹⁶⁹⁴
- Pixels : SignificantBits¹⁶⁹⁵
- Pixels : SizeC¹⁶⁹⁶
- Pixels : SizeT¹⁶⁹⁷
- Pixels : SizeX¹⁶⁹⁸
- Pixels : SizeY¹⁶⁹⁹
- Pixels : SizeZ¹⁷⁰⁰
- Pixels : Type¹⁷⁰¹
- Plane : TheC¹⁷⁰²
- Plane : TheT¹⁷⁰³
- Plane : TheZ¹⁷⁰⁴

Total supported: 23

Total unknown or missing: 452

19.2.42 SEQReader

This page lists supported metadata fields for the Bio-Formats Image-Pro Sequence format reader.

These fields are from the [OME data model](#)¹⁷⁰⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Image-Pro Sequence format reader:

- Channel : ID¹⁷⁰⁶
- Channel : SamplesPerPixel¹⁷⁰⁷
- Image : AcquisitionDate¹⁷⁰⁸
- Image : ID¹⁷⁰⁹

¹⁶⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁶⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁶⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁶⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁶⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁶⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁶⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁶⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁷⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁷⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁷⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁷⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁷⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁷⁰⁵<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁷⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁷⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁷⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁷⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

- Image : Name¹⁷¹⁰
- Pixels : BigEndian¹⁷¹¹
- Pixels : DimensionOrder¹⁷¹²
- Pixels : ID¹⁷¹³
- Pixels : Interleaved¹⁷¹⁴
- Pixels : SignificantBits¹⁷¹⁵
- Pixels : SizeC¹⁷¹⁶
- Pixels : SizeT¹⁷¹⁷
- Pixels : SizeX¹⁷¹⁸
- Pixels : SizeY¹⁷¹⁹
- Pixels : SizeZ¹⁷²⁰
- Pixels : Type¹⁷²¹
- Plane : TheC¹⁷²²
- Plane : TheT¹⁷²³
- Plane : TheZ¹⁷²⁴

Total supported: 19

Total unknown or missing: 456

19.2.43 IPWReader

This page lists supported metadata fields for the Bio-Formats Image-Pro Workspace format reader.

These fields are from the [OME data model](#)¹⁷²⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 20 of them (4%).
- Of those, Bio-Formats fully or partially converts 20 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Image-Pro Workspace format reader:

- Channel : ID¹⁷²⁶
- Channel : SamplesPerPixel¹⁷²⁷

¹⁷¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁷¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁷¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁷¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁷¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁷¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁷¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁷¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁷¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁷¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁷²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁷²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁷²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁷²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁷²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁷²⁵<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁷²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁷²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate¹⁷²⁸
- Image : Description¹⁷²⁹
- Image : ID¹⁷³⁰
- Image : Name¹⁷³¹
- Pixels : BigEndian¹⁷³²
- Pixels : DimensionOrder¹⁷³³
- Pixels : ID¹⁷³⁴
- Pixels : Interleaved¹⁷³⁵
- Pixels : SignificantBits¹⁷³⁶
- Pixels : SizeC¹⁷³⁷
- Pixels : SizeT¹⁷³⁸
- Pixels : SizeX¹⁷³⁹
- Pixels : SizeY¹⁷⁴⁰
- Pixels : SizeZ¹⁷⁴¹
- Pixels : Type¹⁷⁴²
- Plane : TheC¹⁷⁴³
- Plane : TheT¹⁷⁴⁴
- Plane : TheZ¹⁷⁴⁵

Total supported: 20

Total unknown or missing: 455

19.2.44 ImagicReader

This page lists supported metadata fields for the Bio-Formats IMAGIC format reader.

These fields are from the [OME data model](#)¹⁷⁴⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

¹⁷²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁷²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

¹⁷³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁷³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁷³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁷³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁷³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁷³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁷³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁷³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁷³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁷³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁷⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁷⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁷⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁷⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁷⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁷⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁷⁴⁶<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats IMAGIC format reader:

- Channel : ID¹⁷⁴⁷
- Channel : SamplesPerPixel¹⁷⁴⁸
- Image : AcquisitionDate¹⁷⁴⁹
- Image : ID¹⁷⁵⁰
- Image : Name¹⁷⁵¹
- Pixels : BigEndian¹⁷⁵²
- Pixels : DimensionOrder¹⁷⁵³
- Pixels : ID¹⁷⁵⁴
- Pixels : Interleaved¹⁷⁵⁵
- Pixels : PhysicalSizeX¹⁷⁵⁶
- Pixels : PhysicalSizeY¹⁷⁵⁷
- Pixels : PhysicalSizeZ¹⁷⁵⁸
- Pixels : SignificantBits¹⁷⁵⁹
- Pixels : SizeC¹⁷⁶⁰
- Pixels : SizeT¹⁷⁶¹
- Pixels : SizeX¹⁷⁶²
- Pixels : SizeY¹⁷⁶³
- Pixels : SizeZ¹⁷⁶⁴
- Pixels : Type¹⁷⁶⁵
- Plane : TheC¹⁷⁶⁶
- Plane : TheT¹⁷⁶⁷
- Plane : TheZ¹⁷⁶⁸

Total supported: 22

Total unknown or missing: 453

- ¹⁷⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
- ¹⁷⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
- ¹⁷⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
- ¹⁷⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
- ¹⁷⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
- ¹⁷⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ¹⁷⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ¹⁷⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ¹⁷⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ¹⁷⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ¹⁷⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ¹⁷⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ¹⁷⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ¹⁷⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ¹⁷⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ¹⁷⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ¹⁷⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ¹⁷⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ¹⁷⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ¹⁷⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ¹⁷⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ¹⁷⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.45 IMODReader

This page lists supported metadata fields for the Bio-Formats IMOD format reader.

These fields are from the [OME data model](#)¹⁷⁶⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 44 of them (9%).
- Of those, Bio-Formats fully or partially converts 44 (100%).

Supported fields

These fields are fully supported by the Bio-Formats IMOD format reader:

- Channel : ID¹⁷⁷⁰
- Channel : SamplesPerPixel¹⁷⁷¹
- Image : AcquisitionDate¹⁷⁷²
- Image : ID¹⁷⁷³
- Image : Name¹⁷⁷⁴
- Image : ROIRef¹⁷⁷⁵
- Pixels : BigEndian¹⁷⁷⁶
- Pixels : DimensionOrder¹⁷⁷⁷
- Pixels : ID¹⁷⁷⁸
- Pixels : Interleaved¹⁷⁷⁹
- Pixels : PhysicalSizeX¹⁷⁸⁰
- Pixels : PhysicalSizeY¹⁷⁸¹
- Pixels : PhysicalSizeZ¹⁷⁸²
- Pixels : SignificantBits¹⁷⁸³
- Pixels : SizeC¹⁷⁸⁴
- Pixels : SizeT¹⁷⁸⁵
- Pixels : SizeX¹⁷⁸⁶
- Pixels : SizeY¹⁷⁸⁷

¹⁷⁶⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁷⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁷⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁷⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁷⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁷⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁷⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

¹⁷⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁷⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁷⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁷⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁷⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁷⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁷⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁷⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁷⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁷⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁷⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁷⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁷⁸⁸
- Pixels : Type¹⁷⁸⁹
- Plane : TheC¹⁷⁹⁰
- Plane : TheT¹⁷⁹¹
- Plane : TheZ¹⁷⁹²
- Point : ID¹⁷⁹³
- Point : StrokeColor¹⁷⁹⁴
- Point : StrokeDashArray¹⁷⁹⁵
- Point : StrokeWidth¹⁷⁹⁶
- Point : TheZ¹⁷⁹⁷
- Point : X¹⁷⁹⁸
- Point : Y¹⁷⁹⁹
- Polygon : ID¹⁸⁰⁰
- Polygon : Points¹⁸⁰¹
- Polygon : StrokeColor¹⁸⁰²
- Polygon : StrokeDashArray¹⁸⁰³
- Polygon : StrokeWidth¹⁸⁰⁴
- Polygon : TheZ¹⁸⁰⁵
- Polyline : ID¹⁸⁰⁶
- Polyline : Points¹⁸⁰⁷
- Polyline : StrokeColor¹⁸⁰⁸
- Polyline : StrokeDashArray¹⁸⁰⁹
- Polyline : StrokeWidth¹⁸¹⁰
- Polyline : TheZ¹⁸¹¹
- ROI : ID¹⁸¹²
- ROI : Name¹⁸¹³

¹⁷⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁷⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁷⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁷⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁷⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁷⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

¹⁷⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor

¹⁷⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray

¹⁷⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

¹⁷⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

¹⁷⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Point_X

¹⁷⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Point_Y

¹⁸⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

¹⁸⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polygon_Points

¹⁸⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor

¹⁸⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray

¹⁸⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

¹⁸⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

¹⁸⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

¹⁸⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polyline_Points

¹⁸⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor

¹⁸⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeDashArray

¹⁸¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

¹⁸¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

¹⁸¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

¹⁸¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_Name

Total supported: 44

Total unknown or missing: 431

19.2.46 OpenlabReader

This page lists supported metadata fields for the Bio-Formats Openlab LIFF format reader.

These fields are from the [OME data model](#)¹⁸¹⁴. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 32 of them (6%).
- Of those, Bio-Formats fully or partially converts 32 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Openlab LIFF format reader:

- Channel : ID¹⁸¹⁵
- Channel : Name¹⁸¹⁶
- Channel : SamplesPerPixel¹⁸¹⁷
- Detector : ID¹⁸¹⁸
- Detector : Type¹⁸¹⁹
- DetectorSettings : Gain¹⁸²⁰
- DetectorSettings : ID¹⁸²¹
- DetectorSettings : Offset¹⁸²²
- Image : AcquisitionDate¹⁸²³
- Image : ID¹⁸²⁴
- Image : InstrumentRef¹⁸²⁵
- Image : Name¹⁸²⁶
- Instrument : ID¹⁸²⁷
- Pixels : BigEndian¹⁸²⁸
- Pixels : DimensionOrder¹⁸²⁹
- Pixels : ID¹⁸³⁰
- Pixels : Interleaved¹⁸³¹

¹⁸¹⁴<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁸¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁸¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

¹⁸¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁸¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

¹⁸¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

¹⁸²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

¹⁸²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

¹⁸²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Offset

¹⁸²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁸²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁸²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

¹⁸²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁸²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹⁸²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁸²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁸³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁸³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

- Pixels : PhysicalSizeX¹⁸³²
- Pixels : PhysicalSizeY¹⁸³³
- Pixels : SignificantBits¹⁸³⁴
- Pixels : SizeC¹⁸³⁵
- Pixels : SizeT¹⁸³⁶
- Pixels : SizeX¹⁸³⁷
- Pixels : SizeY¹⁸³⁸
- Pixels : SizeZ¹⁸³⁹
- Pixels : Type¹⁸⁴⁰
- Plane : PositionX¹⁸⁴¹
- Plane : PositionY¹⁸⁴²
- Plane : PositionZ¹⁸⁴³
- Plane : TheC¹⁸⁴⁴
- Plane : TheT¹⁸⁴⁵
- Plane : TheZ¹⁸⁴⁶

Total supported: 32

Total unknown or missing: 443

19.2.47 OpenlabRawReader

This page lists supported metadata fields for the Bio-Formats Openlab RAW format reader.

These fields are from the [OME data model](#)¹⁸⁴⁷. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Openlab RAW format reader:

- Channel : ID¹⁸⁴⁸
- Channel : SamplesPerPixel¹⁸⁴⁹

¹⁸³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁸³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁸³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁸³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁸³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁸³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁸³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁸³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁸⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁸⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

¹⁸⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

¹⁸⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

¹⁸⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁸⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁸⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁸⁴⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁸⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁸⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate¹⁸⁵⁰
- Image : ID¹⁸⁵¹
- Image : Name¹⁸⁵²
- Pixels : BigEndian¹⁸⁵³
- Pixels : DimensionOrder¹⁸⁵⁴
- Pixels : ID¹⁸⁵⁵
- Pixels : Interleaved¹⁸⁵⁶
- Pixels : SignificantBits¹⁸⁵⁷
- Pixels : SizeC¹⁸⁵⁸
- Pixels : SizeT¹⁸⁵⁹
- Pixels : SizeX¹⁸⁶⁰
- Pixels : SizeY¹⁸⁶¹
- Pixels : SizeZ¹⁸⁶²
- Pixels : Type¹⁸⁶³
- Plane : TheC¹⁸⁶⁴
- Plane : TheT¹⁸⁶⁵
- Plane : TheZ¹⁸⁶⁶

Total supported: 19

Total unknown or missing: 456

19.2.48 ImprovionTiffReader

This page lists supported metadata fields for the Bio-Formats Improvion TIFF format reader.

These fields are from the [OME data model](#)¹⁸⁶⁷. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 25 of them (5%).
- Of those, Bio-Formats fully or partially converts 25 (100%).

¹⁸⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁸⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁸⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁸⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁸⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁸⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁸⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁸⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁸⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁸⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁸⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁸⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁸⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁸⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁸⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁸⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁸⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁸⁶⁷<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Improvion TIFF format reader:

- Channel : ID¹⁸⁶⁸
- Channel : Name¹⁸⁶⁹
- Channel : SamplesPerPixel¹⁸⁷⁰
- Image : AcquisitionDate¹⁸⁷¹
- Image : Description¹⁸⁷²
- Image : ID¹⁸⁷³
- Image : Name¹⁸⁷⁴
- Pixels : BigEndian¹⁸⁷⁵
- Pixels : DimensionOrder¹⁸⁷⁶
- Pixels : ID¹⁸⁷⁷
- Pixels : Interleaved¹⁸⁷⁸
- Pixels : PhysicalSizeX¹⁸⁷⁹
- Pixels : PhysicalSizeY¹⁸⁸⁰
- Pixels : PhysicalSizeZ¹⁸⁸¹
- Pixels : SignificantBits¹⁸⁸²
- Pixels : SizeC¹⁸⁸³
- Pixels : SizeT¹⁸⁸⁴
- Pixels : SizeX¹⁸⁸⁵
- Pixels : SizeY¹⁸⁸⁶
- Pixels : SizeZ¹⁸⁸⁷
- Pixels : TimeIncrement¹⁸⁸⁸
- Pixels : Type¹⁸⁸⁹
- Plane : TheC¹⁸⁹⁰
- Plane : TheT¹⁸⁹¹

¹⁸⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁸⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

¹⁸⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁸⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁸⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

¹⁸⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁸⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁸⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁸⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁸⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁸⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁸⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁸⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁸⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁸⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁸⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁸⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁸⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁸⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁸⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁸⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

¹⁸⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁸⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁸⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

- Plane : TheZ¹⁸⁹²

Total supported: 25

Total unknown or missing: 450

19.2.49 OBFReader

This page lists supported metadata fields for the Bio-Formats OBF format reader.

These fields are from the [OME data model](#)¹⁸⁹³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats OBF format reader:

- Channel : ID¹⁸⁹⁴
- Channel : SamplesPerPixel¹⁸⁹⁵
- Image : AcquisitionDate¹⁸⁹⁶
- Image : ID¹⁸⁹⁷
- Image : Name¹⁸⁹⁸
- Pixels : BigEndian¹⁸⁹⁹
- Pixels : DimensionOrder¹⁹⁰⁰
- Pixels : ID¹⁹⁰¹
- Pixels : Interleaved¹⁹⁰²
- Pixels : SignificantBits¹⁹⁰³
- Pixels : SizeC¹⁹⁰⁴
- Pixels : SizeT¹⁹⁰⁵
- Pixels : SizeX¹⁹⁰⁶
- Pixels : SizeY¹⁹⁰⁷
- Pixels : SizeZ¹⁹⁰⁸
- Pixels : Type¹⁹⁰⁹

¹⁸⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁸⁹³<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁸⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁸⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁸⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁸⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁸⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁸⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

- Plane : TheC¹⁹¹⁰
- Plane : TheT¹⁹¹¹
- Plane : TheZ¹⁹¹²

Total supported: 19

Total unknown or missing: 456

19.2.50 InCellReader

This page lists supported metadata fields for the Bio-Formats InCell 1000/2000 format reader.

These fields are from the [OME data model](#)¹⁹¹³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 67 of them (14%).
- Of those, Bio-Formats fully or partially converts 67 (100%).

Supported fields

These fields are fully supported by the Bio-Formats InCell 1000/2000 format reader:

- Channel : EmissionWavelength¹⁹¹⁴
- Channel : ExcitationWavelength¹⁹¹⁵
- Channel : ID¹⁹¹⁶
- Channel : Name¹⁹¹⁷
- Channel : SamplesPerPixel¹⁹¹⁸
- Detector : ID¹⁹¹⁹
- Detector : Model¹⁹²⁰
- Detector : Type¹⁹²¹
- DetectorSettings : Binning¹⁹²²
- DetectorSettings : Gain¹⁹²³
- DetectorSettings : ID¹⁹²⁴
- Experiment : ID¹⁹²⁵
- Experiment : Type¹⁹²⁶
- Image : AcquisitionDate¹⁹²⁷

¹⁹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁹¹³<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

¹⁹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

¹⁹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

¹⁹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

¹⁹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

¹⁹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

¹⁹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

¹⁹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

¹⁹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

¹⁹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_ID

¹⁹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_Type

¹⁹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

- Image : Description¹⁹²⁸
- Image : ExperimentRef¹⁹²⁹
- Image : ID¹⁹³⁰
- Image : InstrumentRef¹⁹³¹
- Image : Name¹⁹³²
- ImagingEnvironment : Temperature¹⁹³³
- Instrument : ID¹⁹³⁴
- Objective : Correction¹⁹³⁵
- Objective : ID¹⁹³⁶
- Objective : Immersion¹⁹³⁷
- Objective : LensNA¹⁹³⁸
- Objective : Manufacturer¹⁹³⁹
- Objective : NominalMagnification¹⁹⁴⁰
- ObjectiveSettings : ID¹⁹⁴¹
- ObjectiveSettings : RefractiveIndex¹⁹⁴²
- Pixels : BigEndian¹⁹⁴³
- Pixels : DimensionOrder¹⁹⁴⁴
- Pixels : ID¹⁹⁴⁵
- Pixels : Interleaved¹⁹⁴⁶
- Pixels : PhysicalSizeX¹⁹⁴⁷
- Pixels : PhysicalSizeY¹⁹⁴⁸
- Pixels : SignificantBits¹⁹⁴⁹
- Pixels : SizeC¹⁹⁵⁰
- Pixels : SizeT¹⁹⁵¹
- Pixels : SizeX¹⁹⁵²
- Pixels : SizeY¹⁹⁵³

¹⁹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

¹⁹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimentRef_ID

¹⁹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

¹⁹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

¹⁹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

¹⁹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

¹⁹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

¹⁹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

¹⁹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

¹⁹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹⁹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

¹⁹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

¹⁹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

¹⁹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁹⁵⁴
- Pixels : Type¹⁹⁵⁵
- Plane : DeltaT¹⁹⁵⁶
- Plane : ExposureTime¹⁹⁵⁷
- Plane : PositionX¹⁹⁵⁸
- Plane : PositionY¹⁹⁵⁹
- Plane : PositionZ¹⁹⁶⁰
- Plane : TheC¹⁹⁶¹
- Plane : TheT¹⁹⁶²
- Plane : TheZ¹⁹⁶³
- Plate : ColumnNamingConvention¹⁹⁶⁴
- Plate : ID¹⁹⁶⁵
- Plate : Name¹⁹⁶⁶
- Plate : RowNamingConvention¹⁹⁶⁷
- Plate : WellOriginX¹⁹⁶⁸
- Plate : WellOriginY¹⁹⁶⁹
- PlateAcquisition : ID¹⁹⁷⁰
- PlateAcquisition : MaximumFieldCount¹⁹⁷¹
- PlateAcquisition : WellSampleRef¹⁹⁷²
- Well : Column¹⁹⁷³
- Well : ID¹⁹⁷⁴
- Well : Row¹⁹⁷⁵
- WellSample : ID¹⁹⁷⁶
- WellSample : ImageRef¹⁹⁷⁷
- WellSample : Index¹⁹⁷⁸
- WellSample : PositionX¹⁹⁷⁹

¹⁹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

¹⁹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

¹⁹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

¹⁹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

¹⁹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

¹⁹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

¹⁹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

¹⁹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

¹⁹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ColumnNamingConvention

¹⁹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID

¹⁹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Name

¹⁹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_RowNamingConvention

¹⁹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_WellOriginX

¹⁹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_WellOriginY

¹⁹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_ID

¹⁹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

¹⁹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSampleRef_ID

¹⁹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column

¹⁹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID

¹⁹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row

¹⁹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID

¹⁹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID

¹⁹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index

¹⁹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionX

- WellSample : PositionY¹⁹⁸⁰

Total supported: 67

Total unknown or missing: 408

19.2.51 InCell3000Reader

This page lists supported metadata fields for the Bio-Formats InCell 3000 format reader.

These fields are from the [OME data model](#)¹⁹⁸¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats InCell 3000 format reader:

- Channel : ID¹⁹⁸²
- Channel : SamplesPerPixel¹⁹⁸³
- Image : AcquisitionDate¹⁹⁸⁴
- Image : ID¹⁹⁸⁵
- Image : Name¹⁹⁸⁶
- Pixels : BigEndian¹⁹⁸⁷
- Pixels : DimensionOrder¹⁹⁸⁸
- Pixels : ID¹⁹⁸⁹
- Pixels : Interleaved¹⁹⁹⁰
- Pixels : SignificantBits¹⁹⁹¹
- Pixels : SizeC¹⁹⁹²
- Pixels : SizeT¹⁹⁹³
- Pixels : SizeX¹⁹⁹⁴
- Pixels : SizeY¹⁹⁹⁵
- Pixels : SizeZ¹⁹⁹⁶
- Pixels : Type¹⁹⁹⁷

¹⁹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionY

¹⁹⁸¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

¹⁹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

¹⁹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

¹⁹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

¹⁹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

¹⁹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

¹⁹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

¹⁹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

¹⁹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

¹⁹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

¹⁹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

¹⁹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

¹⁹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

¹⁹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

¹⁹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

- Plane : TheC¹⁹⁹⁸
- Plane : TheT¹⁹⁹⁹
- Plane : TheZ²⁰⁰⁰

Total supported: 19

Total unknown or missing: 456

19.2.52 INRReader

This page lists supported metadata fields for the Bio-Formats INR format reader.

These fields are from the [OME data model](#)²⁰⁰¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats INR format reader:

- Channel : ID²⁰⁰²
- Channel : SamplesPerPixel²⁰⁰³
- Image : AcquisitionDate²⁰⁰⁴
- Image : ID²⁰⁰⁵
- Image : Name²⁰⁰⁶
- Pixels : BigEndian²⁰⁰⁷
- Pixels : DimensionOrder²⁰⁰⁸
- Pixels : ID²⁰⁰⁹
- Pixels : Interleaved²⁰¹⁰
- Pixels : PhysicalSizeX²⁰¹¹
- Pixels : PhysicalSizeY²⁰¹²
- Pixels : PhysicalSizeZ²⁰¹³
- Pixels : SignificantBits²⁰¹⁴
- Pixels : SizeC²⁰¹⁵

¹⁹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

¹⁹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁰⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁰⁰¹<http://www.openmicroscopy.org/site/support/ome-model/>

²⁰⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁰⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁰⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁰⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁰⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁰⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁰⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁰⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁰¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁰¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁰¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁰¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁰¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁰¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

- Pixels : SizeT²⁰¹⁶
- Pixels : SizeX²⁰¹⁷
- Pixels : SizeY²⁰¹⁸
- Pixels : SizeZ²⁰¹⁹
- Pixels : Type²⁰²⁰
- Plane : TheC²⁰²¹
- Plane : TheT²⁰²²
- Plane : TheZ²⁰²³

Total supported: 22

Total unknown or missing: 453

19.2.53 InveonReader

This page lists supported metadata fields for the Bio-Formats Inveon format reader.

These fields are from the [OME data model](#)²⁰²⁴. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 30 of them (6%).
- Of those, Bio-Formats fully or partially converts 30 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Inveon format reader:

- Channel : ID²⁰²⁵
- Channel : SamplesPerPixel²⁰²⁶
- Experimenter : ID²⁰²⁷
- Experimenter : Institution²⁰²⁸
- Experimenter : UserName²⁰²⁹
- Image : AcquisitionDate²⁰³⁰
- Image : Description²⁰³¹
- Image : ExperimenterRef²⁰³²
- Image : ID²⁰³³

²⁰¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁰¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁰¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁰¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁰²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁰²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁰²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁰²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁰²⁴<http://www.openmicroscopy.org/site/support/ome-model/>

²⁰²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁰²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁰²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID

²⁰²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_Institution

²⁰²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_UserName

²⁰³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁰³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁰³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID

²⁰³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

- Image : InstrumentRef²⁰³⁴
- Image : Name²⁰³⁵
- Instrument : ID²⁰³⁶
- Microscope : Model²⁰³⁷
- Pixels : BigEndian²⁰³⁸
- Pixels : DimensionOrder²⁰³⁹
- Pixels : ID²⁰⁴⁰
- Pixels : Interleaved²⁰⁴¹
- Pixels : PhysicalSizeX²⁰⁴²
- Pixels : PhysicalSizeY²⁰⁴³
- Pixels : PhysicalSizeZ²⁰⁴⁴
- Pixels : SignificantBits²⁰⁴⁵
- Pixels : SizeC²⁰⁴⁶
- Pixels : SizeT²⁰⁴⁷
- Pixels : SizeX²⁰⁴⁸
- Pixels : SizeY²⁰⁴⁹
- Pixels : SizeZ²⁰⁵⁰
- Pixels : Type²⁰⁵¹
- Plane : TheC²⁰⁵²
- Plane : TheT²⁰⁵³
- Plane : TheZ²⁰⁵⁴

Total supported: 30

Total unknown or missing: 445

19.2.54 IvisionReader

This page lists supported metadata fields for the Bio-Formats IVison format reader.

These fields are from the [OME data model²⁰⁵⁵](#). Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

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- ²⁰³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID
- ²⁰³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
- ²⁰³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID
- ²⁰³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model
- ²⁰³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ²⁰³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ²⁰⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ²⁰⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ²⁰⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ²⁰⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ²⁰⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ²⁰⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ²⁰⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ²⁰⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ²⁰⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ²⁰⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ²⁰⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ²⁰⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ²⁰⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ²⁰⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ²⁰⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ
- ²⁰⁵⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 34 of them (7%).
- Of those, Bio-Formats fully or partially converts 34 (100%).

Supported fields**These fields are fully supported by the Bio-Formats IVision format reader:**

- Channel : ID²⁰⁵⁶
- Channel : SamplesPerPixel²⁰⁵⁷
- Detector : ID²⁰⁵⁸
- Detector : Type²⁰⁵⁹
- DetectorSettings : Binning²⁰⁶⁰
- DetectorSettings : Gain²⁰⁶¹
- DetectorSettings : ID²⁰⁶²
- Image : AcquisitionDate²⁰⁶³
- Image : ID²⁰⁶⁴
- Image : InstrumentRef²⁰⁶⁵
- Image : Name²⁰⁶⁶
- Instrument : ID²⁰⁶⁷
- Objective : Correction²⁰⁶⁸
- Objective : ID²⁰⁶⁹
- Objective : Immersion²⁰⁷⁰
- Objective : LensNA²⁰⁷¹
- Objective : NominalMagnification²⁰⁷²
- ObjectiveSettings : ID²⁰⁷³
- ObjectiveSettings : RefractiveIndex²⁰⁷⁴
- Pixels : BigEndian²⁰⁷⁵
- Pixels : DimensionOrder²⁰⁷⁶
- Pixels : ID²⁰⁷⁷

²⁰⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁰⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁰⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

²⁰⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

²⁰⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

²⁰⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

²⁰⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

²⁰⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁰⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁰⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²⁰⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁰⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²⁰⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

²⁰⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

²⁰⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

²⁰⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

²⁰⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

²⁰⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

²⁰⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

²⁰⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁰⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁰⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

- Pixels : Interleaved²⁰⁷⁸
- Pixels : SignificantBits²⁰⁷⁹
- Pixels : SizeC²⁰⁸⁰
- Pixels : SizeT²⁰⁸¹
- Pixels : SizeX²⁰⁸²
- Pixels : SizeY²⁰⁸³
- Pixels : SizeZ²⁰⁸⁴
- Pixels : TimeIncrement²⁰⁸⁵
- Pixels : Type²⁰⁸⁶
- Plane : TheC²⁰⁸⁷
- Plane : TheT²⁰⁸⁸
- Plane : TheZ²⁰⁸⁹

Total supported: 34

Total unknown or missing: 441

19.2.55 IPLabReader

This page lists supported metadata fields for the Bio-Formats IPLab format reader.

These fields are from the [OME data model](#)²⁰⁹⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 31 of them (6%).
- Of those, Bio-Formats fully or partially converts 31 (100%).

Supported fields

These fields are fully supported by the Bio-Formats IPLab format reader:

- Channel : ID²⁰⁹¹
- Channel : SamplesPerPixel²⁰⁹²
- Image : AcquisitionDate²⁰⁹³
- Image : Description²⁰⁹⁴
- Image : ID²⁰⁹⁵

²⁰⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁰⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁰⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁰⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁰⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁰⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁰⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁰⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

²⁰⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁰⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁰⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁰⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁰⁹⁰<http://www.openmicroscopy.org/site/support/ome-model/>

²⁰⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁰⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁰⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁰⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁰⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

- Image : Name²⁰⁹⁶
- Image : ROIRef²⁰⁹⁷
- Pixels : BigEndian²⁰⁹⁸
- Pixels : DimensionOrder²⁰⁹⁹
- Pixels : ID²¹⁰⁰
- Pixels : Interleaved²¹⁰¹
- Pixels : PhysicalSizeX²¹⁰²
- Pixels : PhysicalSizeY²¹⁰³
- Pixels : SignificantBits²¹⁰⁴
- Pixels : SizeC²¹⁰⁵
- Pixels : SizeT²¹⁰⁶
- Pixels : SizeX²¹⁰⁷
- Pixels : SizeY²¹⁰⁸
- Pixels : SizeZ²¹⁰⁹
- Pixels : TimeIncrement²¹¹⁰
- Pixels : Type²¹¹¹
- Plane : DeltaT²¹¹²
- Plane : TheC²¹¹³
- Plane : TheT²¹¹⁴
- Plane : TheZ²¹¹⁵
- ROI : ID²¹¹⁶
- Rectangle : Height²¹¹⁷
- Rectangle : ID²¹¹⁸
- Rectangle : Width²¹¹⁹
- Rectangle : X²¹²⁰
- Rectangle : Y²¹²¹

²⁰⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁰⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

²⁰⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁰⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²¹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²¹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

²¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²¹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

²¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

²¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Height

²¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

²¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Width

²¹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_X

²¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Y

Total supported: 31

Total unknown or missing: 444

19.2.56 JEOLReader

This page lists supported metadata fields for the Bio-Formats JEOL format reader.

These fields are from the [OME data model](#)²¹²². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JEOL format reader:

- Channel : ID²¹²³
- Channel : SamplesPerPixel²¹²⁴
- Image : AcquisitionDate²¹²⁵
- Image : ID²¹²⁶
- Image : Name²¹²⁷
- Pixels : BigEndian²¹²⁸
- Pixels : DimensionOrder²¹²⁹
- Pixels : ID²¹³⁰
- Pixels : Interleaved²¹³¹
- Pixels : SignificantBits²¹³²
- Pixels : SizeC²¹³³
- Pixels : SizeT²¹³⁴
- Pixels : SizeX²¹³⁵
- Pixels : SizeY²¹³⁶
- Pixels : SizeZ²¹³⁷
- Pixels : Type²¹³⁸
- Plane : TheC²¹³⁹

²¹²²<http://www.openmicroscopy.org/site/support/ome-model/>

²¹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²¹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²¹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²¹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²¹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²¹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²¹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²¹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²¹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²¹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²¹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²¹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²¹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²¹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²¹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²¹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²¹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

- Plane : TheT²¹⁴⁰
- Plane : TheZ²¹⁴¹

Total supported: 19

Total unknown or missing: 456

19.2.57 JPEG2000Reader

This page lists supported metadata fields for the Bio-Formats JPEG-2000 format reader.

These fields are from the [OME data model](#)²¹⁴². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JPEG-2000 format reader:

- Channel : ID²¹⁴³
- Channel : SamplesPerPixel²¹⁴⁴
- Image : AcquisitionDate²¹⁴⁵
- Image : ID²¹⁴⁶
- Image : Name²¹⁴⁷
- Pixels : BigEndian²¹⁴⁸
- Pixels : DimensionOrder²¹⁴⁹
- Pixels : ID²¹⁵⁰
- Pixels : Interleaved²¹⁵¹
- Pixels : SignificantBits²¹⁵²
- Pixels : SizeC²¹⁵³
- Pixels : SizeT²¹⁵⁴
- Pixels : SizeX²¹⁵⁵
- Pixels : SizeY²¹⁵⁶
- Pixels : SizeZ²¹⁵⁷

²¹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²¹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²¹⁴²<http://www.openmicroscopy.org/site/support/ome-model/>

²¹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²¹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²¹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²¹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²¹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²¹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²¹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²¹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²¹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²¹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²¹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²¹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²¹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²¹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²¹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

- Pixels : Type²¹⁵⁸
- Plane : TheC²¹⁵⁹
- Plane : TheT²¹⁶⁰
- Plane : TheZ²¹⁶¹

Total supported: 19

Total unknown or missing: 456

19.2.58 JPEGReader

This page lists supported metadata fields for the Bio-Formats JPEG format reader.

These fields are from the [OME data model](#)²¹⁶². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JPEG format reader:

- Channel : ID²¹⁶³
- Channel : SamplesPerPixel²¹⁶⁴
- Image : AcquisitionDate²¹⁶⁵
- Image : ID²¹⁶⁶
- Image : Name²¹⁶⁷
- Pixels : BigEndian²¹⁶⁸
- Pixels : DimensionOrder²¹⁶⁹
- Pixels : ID²¹⁷⁰
- Pixels : Interleaved²¹⁷¹
- Pixels : SignificantBits²¹⁷²
- Pixels : SizeC²¹⁷³
- Pixels : SizeT²¹⁷⁴
- Pixels : SizeX²¹⁷⁵

²¹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²¹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²¹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²¹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²¹⁶²<http://www.openmicroscopy.org/site/support/ome-model/>

²¹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²¹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²¹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²¹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²¹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²¹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²¹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²¹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²¹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²¹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²¹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²¹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²¹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

- Pixels : SizeY²¹⁷⁶
- Pixels : SizeZ²¹⁷⁷
- Pixels : Type²¹⁷⁸
- Plane : TheC²¹⁷⁹
- Plane : TheT²¹⁸⁰
- Plane : TheZ²¹⁸¹

Total supported: 19

Total unknown or missing: 456

19.2.59 JPKReader

This page lists supported metadata fields for the Bio-Formats JPK Instruments format reader.

These fields are from the [OME data model](#)²¹⁸². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JPK Instruments format reader:

- Channel : ID²¹⁸³
- Channel : SamplesPerPixel²¹⁸⁴
- Image : AcquisitionDate²¹⁸⁵
- Image : ID²¹⁸⁶
- Image : Name²¹⁸⁷
- Pixels : BigEndian²¹⁸⁸
- Pixels : DimensionOrder²¹⁸⁹
- Pixels : ID²¹⁹⁰
- Pixels : Interleaved²¹⁹¹
- Pixels : SignificantBits²¹⁹²
- Pixels : SizeC²¹⁹³

²¹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²¹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²¹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²¹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²¹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²¹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²¹⁸²<http://www.openmicroscopy.org/site/support/ome-model/>

²¹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²¹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²¹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²¹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²¹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²¹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²¹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²¹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²¹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²¹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²¹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

- Pixels : SizeT²¹⁹⁴
- Pixels : SizeX²¹⁹⁵
- Pixels : SizeY²¹⁹⁶
- Pixels : SizeZ²¹⁹⁷
- Pixels : Type²¹⁹⁸
- Plane : TheC²¹⁹⁹
- Plane : TheT²²⁰⁰
- Plane : TheZ²²⁰¹

Total supported: 19

Total unknown or missing: 456

19.2.60 JPXReader

This page lists supported metadata fields for the Bio-Formats JPX format reader.

These fields are from the [OME data model](#)²²⁰². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JPX format reader:

- Channel : ID²²⁰³
- Channel : SamplesPerPixel²²⁰⁴
- Image : AcquisitionDate²²⁰⁵
- Image : ID²²⁰⁶
- Image : Name²²⁰⁷
- Pixels : BigEndian²²⁰⁸
- Pixels : DimensionOrder²²⁰⁹
- Pixels : ID²²¹⁰
- Pixels : Interleaved²²¹¹

²¹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²¹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²¹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²¹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²¹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²¹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²²⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²²⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²²⁰²<http://www.openmicroscopy.org/site/support/ome-model/>

²²⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²²⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²²⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²²⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²²⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²²⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²²⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²²¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²²¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

- Pixels : SignificantBits²²¹²
- Pixels : SizeC²²¹³
- Pixels : SizeT²²¹⁴
- Pixels : SizeX²²¹⁵
- Pixels : SizeY²²¹⁶
- Pixels : SizeZ²²¹⁷
- Pixels : Type²²¹⁸
- Plane : TheC²²¹⁹
- Plane : TheT²²²⁰
- Plane : TheZ²²²¹

Total supported: 19

Total unknown or missing: 456

19.2.61 KhorosReader

This page lists supported metadata fields for the Bio-Formats Khoros XV format reader.

These fields are from the [OME data model](#)²²²². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Khoros XV format reader:

- Channel : ID²²²³
- Channel : SamplesPerPixel²²²⁴
- Image : AcquisitionDate²²²⁵
- Image : ID²²²⁶
- Image : Name²²²⁷
- Pixels : BigEndian²²²⁸
- Pixels : DimensionOrder²²²⁹

²²¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²²¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²²¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²²¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²²¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²²¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²²¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²²¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²²²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²²²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²²²²<http://www.openmicroscopy.org/site/support/ome-model/>

²²²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²²²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²²²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²²²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²²²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²²²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²²²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

- Pixels : ID²²³⁰
- Pixels : Interleaved²²³¹
- Pixels : SignificantBits²²³²
- Pixels : SizeC²²³³
- Pixels : SizeT²²³⁴
- Pixels : SizeX²²³⁵
- Pixels : SizeY²²³⁶
- Pixels : SizeZ²²³⁷
- Pixels : Type²²³⁸
- Plane : TheC²²³⁹
- Plane : TheT²²⁴⁰
- Plane : TheZ²²⁴¹

Total supported: 19

Total unknown or missing: 456

19.2.62 KodakReader

This page lists supported metadata fields for the Bio-Formats Kodak Molecular Imaging format reader.

These fields are from the [OME data model](#)²²⁴². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 26 of them (5%).
- Of those, Bio-Formats fully or partially converts 26 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Kodak Molecular Imaging format reader:

- Channel : ID²²⁴³
- Channel : SamplesPerPixel²²⁴⁴
- Image : AcquisitionDate²²⁴⁵
- Image : ID²²⁴⁶
- Image : InstrumentRef²²⁴⁷

²²³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²²³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²²³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²²³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²²³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²²³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²²³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²²³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²²³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²²³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²²⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²²⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²²⁴²<http://www.openmicroscopy.org/site/support/ome-model/>

²²⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²²⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²²⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²²⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²²⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

- Image : Name²²⁴⁸
- ImagingEnvironment : Temperature²²⁴⁹
- Instrument : ID²²⁵⁰
- Microscope : Model²²⁵¹
- Pixels : BigEndian²²⁵²
- Pixels : DimensionOrder²²⁵³
- Pixels : ID²²⁵⁴
- Pixels : Interleaved²²⁵⁵
- Pixels : PhysicalSizeX²²⁵⁶
- Pixels : PhysicalSizeY²²⁵⁷
- Pixels : SignificantBits²²⁵⁸
- Pixels : SizeC²²⁵⁹
- Pixels : SizeT²²⁶⁰
- Pixels : SizeX²²⁶¹
- Pixels : SizeY²²⁶²
- Pixels : SizeZ²²⁶³
- Pixels : Type²²⁶⁴
- Plane : ExposureTime²²⁶⁵
- Plane : TheC²²⁶⁶
- Plane : TheT²²⁶⁷
- Plane : TheZ²²⁶⁸

Total supported: 26

Total unknown or missing: 449

19.2.63 LiFlimReader

This page lists supported metadata fields for the Bio-Formats LI-FLIM format reader.

These fields are from the [OME data model²²⁶⁹](#). Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

²²⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²²⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

²²⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²²⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²²⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²²⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²²⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²²⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²²⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²²⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²²⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²²⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²²⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²²⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²²⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²²⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²²⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²²⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

²²⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²²⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²²⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²²⁶⁹<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 25 of them (5%).
- Of those, Bio-Formats fully or partially converts 25 (100%).

Supported fields

These fields are fully supported by the Bio-Formats LI-FLIM format reader:

- Channel : ID²²⁷⁰
- Channel : SamplesPerPixel²²⁷¹
- Image : AcquisitionDate²²⁷²
- Image : ID²²⁷³
- Image : Name²²⁷⁴
- Image : ROIRef²²⁷⁵
- Pixels : BigEndian²²⁷⁶
- Pixels : DimensionOrder²²⁷⁷
- Pixels : ID²²⁷⁸
- Pixels : Interleaved²²⁷⁹
- Pixels : SignificantBits²²⁸⁰
- Pixels : SizeC²²⁸¹
- Pixels : SizeT²²⁸²
- Pixels : SizeX²²⁸³
- Pixels : SizeY²²⁸⁴
- Pixels : SizeZ²²⁸⁵
- Pixels : Type²²⁸⁶
- Plane : DeltaT²²⁸⁷
- Plane : ExposureTime²²⁸⁸
- Plane : TheC²²⁸⁹
- Plane : TheT²²⁹⁰
- Plane : TheZ²²⁹¹

²²⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²²⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²²⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²²⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²²⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²²⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

²²⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²²⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²²⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²²⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²²⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²²⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²²⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²²⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²²⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²²⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²²⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²²⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

²²⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

²²⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²²⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²²⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

- Polygon : ID²²⁹²
- Polygon : Points²²⁹³
- ROI : ID²²⁹⁴

Total supported: 25

Total unknown or missing: 450

19.2.64 InspectorReader

This page lists supported metadata fields for the Bio-Formats Lavisoin Inspector format reader.

These fields are from the [OME data model](#)²²⁹⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Lavisoin Inspector format reader:

- Channel : ID²²⁹⁶
- Channel : SamplesPerPixel²²⁹⁷
- Image : AcquisitionDate²²⁹⁸
- Image : ID²²⁹⁹
- Image : Name²³⁰⁰
- Pixels : BigEndian²³⁰¹
- Pixels : DimensionOrder²³⁰²
- Pixels : ID²³⁰³
- Pixels : Interleaved²³⁰⁴
- Pixels : SignificantBits²³⁰⁵
- Pixels : SizeC²³⁰⁶
- Pixels : SizeT²³⁰⁷
- Pixels : SizeX²³⁰⁸
- Pixels : SizeY²³⁰⁹

²²⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

²²⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polygon_Points

²²⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

²²⁹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

²²⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²²⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²²⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²²⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²³⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²³⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²³⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²³⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²³⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²³⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²³⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²³⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²³⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²³⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ²³¹⁰
- Pixels : Type²³¹¹
- Plane : TheC²³¹²
- Plane : TheT²³¹³
- Plane : TheZ²³¹⁴

Total supported: 19

Total unknown or missing: 456

19.2.65 LeicaReader

This page lists supported metadata fields for the Bio-Formats Leica format reader.

These fields are from the [OME data model](#)²³¹⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 56 of them (11%).
- Of those, Bio-Formats fully or partially converts 56 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Leica format reader:

- Channel : Color²³¹⁶
- Channel : EmissionWavelength²³¹⁷
- Channel : ExcitationWavelength²³¹⁸
- Channel : ID²³¹⁹
- Channel : Name²³²⁰
- Channel : PinholeSize²³²¹
- Channel : SamplesPerPixel²³²²
- Detector : ID²³²³
- Detector : Offset²³²⁴
- Detector : Type²³²⁵
- Detector : Voltage²³²⁶
- DetectorSettings : ID²³²⁷

²³¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²³¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²³¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²³¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²³¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²³¹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

²³¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Color

²³¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

²³¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

²³¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²³²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

²³²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize

²³²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²³²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

²³²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Offset

²³²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

²³²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Voltage

²³²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

- Filter : ID²³²⁸
- Filter : Model²³²⁹
- Image : AcquisitionDate²³³⁰
- Image : Description²³³¹
- Image : ID²³³²
- Image : InstrumentRef²³³³
- Image : Name²³³⁴
- Instrument : ID²³³⁵
- LightPath : EmissionFilterRef²³³⁶
- Objective : Correction²³³⁷
- Objective : ID²³³⁸
- Objective : Immersion²³³⁹
- Objective : LensNA²³⁴⁰
- Objective : Model²³⁴¹
- Objective : NominalMagnification²³⁴²
- Objective : SerialNumber²³⁴³
- ObjectiveSettings : ID²³⁴⁴
- ObjectiveSettings : RefractiveIndex²³⁴⁵
- Pixels : BigEndian²³⁴⁶
- Pixels : DimensionOrder²³⁴⁷
- Pixels : ID²³⁴⁸
- Pixels : Interleaved²³⁴⁹
- Pixels : PhysicalSizeX²³⁵⁰
- Pixels : PhysicalSizeY²³⁵¹
- Pixels : PhysicalSizeZ²³⁵²
- Pixels : SignificantBits²³⁵³

²³²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_ID

²³²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²³³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²³³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²³³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²³³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²³³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²³³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²³³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

²³³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

²³³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

²³³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

²³⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

²³⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²³⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

²³⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

²³⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

²³⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

²³⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²³⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²³⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²³⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²³⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²³⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²³⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

²³⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

- Pixels : SizeC²³⁵⁴
- Pixels : SizeT²³⁵⁵
- Pixels : SizeX²³⁵⁶
- Pixels : SizeY²³⁵⁷
- Pixels : SizeZ²³⁵⁸
- Pixels : TimeIncrement²³⁵⁹
- Pixels : Type²³⁶⁰
- Plane : DeltaT²³⁶¹
- Plane : ExposureTime²³⁶²
- Plane : PositionX²³⁶³
- Plane : PositionY²³⁶⁴
- Plane : TheC²³⁶⁵
- Plane : TheT²³⁶⁶
- Plane : TheZ²³⁶⁷
- StageLabel : Name²³⁶⁸
- StageLabel : Z²³⁶⁹
- TransmittanceRange : CutIn²³⁷⁰
- TransmittanceRange : CutOut²³⁷¹

Total supported: 56

Total unknown or missing: 419

19.2.66 LIFReader

This page lists supported metadata fields for the Bio-Formats Leica Image File Format format reader.

These fields are from the OME data model²³⁷². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 85 of them (17%).
- Of those, Bio-Formats fully or partially converts 85 (100%).

²³⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²³⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²³⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²³⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²³⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²³⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

²³⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²³⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

²³⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

²³⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

²³⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

²³⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²³⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²³⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²³⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Name

²³⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Z

²³⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutIn

²³⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutOut

²³⁷²<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Leica Image File Format format reader:

- Channel : Color²³⁷³
- Channel : ExcitationWavelength²³⁷⁴
- Channel : ID²³⁷⁵
- Channel : LightSourceSettingsAttenuation²³⁷⁶
- Channel : LightSourceSettingsID²³⁷⁷
- Channel : Name²³⁷⁸
- Channel : PinholeSize²³⁷⁹
- Channel : SamplesPerPixel²³⁸⁰
- Detector : ID²³⁸¹
- Detector : Model²³⁸²
- Detector : Offset²³⁸³
- Detector : Type²³⁸⁴
- Detector : Zoom²³⁸⁵
- DetectorSettings : Gain²³⁸⁶
- DetectorSettings : ID²³⁸⁷
- DetectorSettings : Offset²³⁸⁸
- Filter : ID²³⁸⁹
- Filter : Model²³⁹⁰
- Image : AcquisitionDate²³⁹¹
- Image : Description²³⁹²
- Image : ID²³⁹³
- Image : InstrumentRef²³⁹⁴
- Image : Name²³⁹⁵
- Image : ROIRef²³⁹⁶

²³⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Color

²³⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

²³⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²³⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_Attenuation

²³⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_ID

²³⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

²³⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize

²³⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²³⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

²³⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²³⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Offset

²³⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

²³⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Zoom

²³⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

²³⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

²³⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Offset

²³⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_ID

²³⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²³⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²³⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²³⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²³⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²³⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²³⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

- Instrument : ID²³⁹⁷
- Label : FontSize²³⁹⁸
- Label : ID²³⁹⁹
- Label : StrokeWidth²⁴⁰⁰
- Label : Text²⁴⁰¹
- Label : X²⁴⁰²
- Label : Y²⁴⁰³
- Laser : ID²⁴⁰⁴
- Laser : LaserMedium²⁴⁰⁵
- Laser : Type²⁴⁰⁶
- Laser : Wavelength²⁴⁰⁷
- LightPath : EmissionFilterRef²⁴⁰⁸
- Line : ID²⁴⁰⁹
- Line : X1²⁴¹⁰
- Line : X2²⁴¹¹
- Line : Y1²⁴¹²
- Line : Y2²⁴¹³
- Microscope : Model²⁴¹⁴
- Microscope : Type²⁴¹⁵
- Objective : Correction²⁴¹⁶
- Objective : ID²⁴¹⁷
- Objective : Immersion²⁴¹⁸
- Objective : LensNA²⁴¹⁹
- Objective : Model²⁴²⁰
- Objective : NominalMagnification²⁴²¹
- Objective : SerialNumber²⁴²²

²³⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²³⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

²³⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

²⁴⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

²⁴⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text

²⁴⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Label_X

²⁴⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Label_Y

²⁴⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

²⁴⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_LaserMedium

²⁴⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Type

²⁴⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Wavelength

²⁴⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

²⁴⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

²⁴¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X1

²⁴¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X2

²⁴¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y1

²⁴¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y2

²⁴¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁴¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Microscope_Type

²⁴¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

²⁴¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

²⁴¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

²⁴¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

²⁴²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁴²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

²⁴²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

- ObjectiveSettings : ID²⁴²³
- ObjectiveSettings : RefractiveIndex²⁴²⁴
- Pixels : BigEndian²⁴²⁵
- Pixels : DimensionOrder²⁴²⁶
- Pixels : ID²⁴²⁷
- Pixels : Interleaved²⁴²⁸
- Pixels : PhysicalSizeX²⁴²⁹
- Pixels : PhysicalSizeY²⁴³⁰
- Pixels : PhysicalSizeZ²⁴³¹
- Pixels : SignificantBits²⁴³²
- Pixels : SizeC²⁴³³
- Pixels : SizeT²⁴³⁴
- Pixels : SizeX²⁴³⁵
- Pixels : SizeY²⁴³⁶
- Pixels : SizeZ²⁴³⁷
- Pixels : TimeIncrement²⁴³⁸
- Pixels : Type²⁴³⁹
- Plane : DeltaT²⁴⁴⁰
- Plane : ExposureTime²⁴⁴¹
- Plane : PositionX²⁴⁴²
- Plane : PositionY²⁴⁴³
- Plane : PositionZ²⁴⁴⁴
- Plane : TheC²⁴⁴⁵
- Plane : TheT²⁴⁴⁶
- Plane : TheZ²⁴⁴⁷
- Polygon : ID²⁴⁴⁸

²⁴²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

²⁴²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

²⁴²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁴²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁴²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁴²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁴²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁴³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁴³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁴³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁴³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁴³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁴³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁴³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁴³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁴³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

²⁴³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁴⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

²⁴⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

²⁴⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

²⁴⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

²⁴⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

²⁴⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁴⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁴⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁴⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

- Polygon : Points²⁴⁴⁹
- ROI : ID²⁴⁵⁰
- Rectangle : Height²⁴⁵¹
- Rectangle : ID²⁴⁵²
- Rectangle : Width²⁴⁵³
- Rectangle : X²⁴⁵⁴
- Rectangle : Y²⁴⁵⁵
- TransmittanceRange : CutIn²⁴⁵⁶
- TransmittanceRange : CutOut²⁴⁵⁷

Total supported: 85

Total unknown or missing: 390

19.2.67 LeicaSCNReader

This page lists supported metadata fields for the Bio-Formats Leica SCN format reader.

These fields are from the [OME data model](#)²⁴⁵⁸. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 33 of them (6%).
- Of those, Bio-Formats fully or partially converts 33 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Leica SCN format reader:

- Channel : ID²⁴⁵⁹
- Channel : IlluminationType²⁴⁶⁰
- Channel : SamplesPerPixel²⁴⁶¹
- Image : AcquisitionDate²⁴⁶²
- Image : Description²⁴⁶³
- Image : ID²⁴⁶⁴
- Image : InstrumentRef²⁴⁶⁵
- Image : Name²⁴⁶⁶

²⁴⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polygon_Points

²⁴⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

²⁴⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Height

²⁴⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

²⁴⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Width

²⁴⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_X

²⁴⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Y

²⁴⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutIn

²⁴⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutOut

²⁴⁵⁸<http://www.openmicroscopy.org/site/support/ome-model/>

²⁴⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁴⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_IlluminationType

²⁴⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁴⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁴⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁴⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁴⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²⁴⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

- Instrument : ID²⁴⁶⁷
- Objective : CalibratedMagnification²⁴⁶⁸
- Objective : ID²⁴⁶⁹
- Objective : LensNA²⁴⁷⁰
- Objective : NominalMagnification²⁴⁷¹
- ObjectiveSettings : ID²⁴⁷²
- Pixels : BigEndian²⁴⁷³
- Pixels : DimensionOrder²⁴⁷⁴
- Pixels : ID²⁴⁷⁵
- Pixels : Interleaved²⁴⁷⁶
- Pixels : PhysicalSizeX²⁴⁷⁷
- Pixels : PhysicalSizeY²⁴⁷⁸
- Pixels : PhysicalSizeZ²⁴⁷⁹
- Pixels : SignificantBits²⁴⁸⁰
- Pixels : SizeC²⁴⁸¹
- Pixels : SizeT²⁴⁸²
- Pixels : SizeX²⁴⁸³
- Pixels : SizeY²⁴⁸⁴
- Pixels : SizeZ²⁴⁸⁵
- Pixels : Type²⁴⁸⁶
- Plane : PositionX²⁴⁸⁷
- Plane : PositionY²⁴⁸⁸
- Plane : TheC²⁴⁸⁹
- Plane : TheT²⁴⁹⁰
- Plane : TheZ²⁴⁹¹

Total supported: 33

Total unknown or missing: 442

- ²⁴⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID
- ²⁴⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification
- ²⁴⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID
- ²⁴⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA
- ²⁴⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification
- ²⁴⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID
- ²⁴⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ²⁴⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ²⁴⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ²⁴⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ²⁴⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ²⁴⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ²⁴⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ²⁴⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ²⁴⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ²⁴⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ²⁴⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ²⁴⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ²⁴⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ²⁴⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ²⁴⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX
- ²⁴⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY
- ²⁴⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ²⁴⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ²⁴⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.68 LEORReader

This page lists supported metadata fields for the Bio-Formats LEO format reader.

These fields are from the [OME data model](#)²⁴⁹². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 27 of them (5%).
- Of those, Bio-Formats fully or partially converts 27 (100%).

Supported fields

These fields are fully supported by the Bio-Formats LEO format reader:

- Channel : ID²⁴⁹³
- Channel : SamplesPerPixel²⁴⁹⁴
- Image : AcquisitionDate²⁴⁹⁵
- Image : ID²⁴⁹⁶
- Image : InstrumentRef²⁴⁹⁷
- Image : Name²⁴⁹⁸
- Instrument : ID²⁴⁹⁹
- Objective : Correction²⁵⁰⁰
- Objective : ID²⁵⁰¹
- Objective : Immersion²⁵⁰²
- Objective : WorkingDistance²⁵⁰³
- Pixels : BigEndian²⁵⁰⁴
- Pixels : DimensionOrder²⁵⁰⁵
- Pixels : ID²⁵⁰⁶
- Pixels : Interleaved²⁵⁰⁷
- Pixels : PhysicalSizeX²⁵⁰⁸
- Pixels : PhysicalSizeY²⁵⁰⁹
- Pixels : SignificantBits²⁵¹⁰

²⁴⁹²<http://www.openmicroscopy.org/site/support/ome-model/>

²⁴⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁴⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁴⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁴⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁴⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²⁴⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁴⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²⁵⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

²⁵⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

²⁵⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

²⁵⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_WorkingDistance

²⁵⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁵⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁵⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁵⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁵⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁵⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁵¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

- Pixels : SizeC²⁵¹¹
- Pixels : SizeT²⁵¹²
- Pixels : SizeX²⁵¹³
- Pixels : SizeY²⁵¹⁴
- Pixels : SizeZ²⁵¹⁵
- Pixels : Type²⁵¹⁶
- Plane : TheC²⁵¹⁷
- Plane : TheT²⁵¹⁸
- Plane : TheZ²⁵¹⁹

Total supported: 27

Total unknown or missing: 448

19.2.69 L2DReader

This page lists supported metadata fields for the Bio-Formats Li-Cor L2D format reader.

These fields are from the [OME data model](#)²⁵²⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 29 of them (6%).
- Of those, Bio-Formats fully or partially converts 29 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Li-Cor L2D format reader:

- Channel : ID²⁵²¹
- Channel : LightSourceSettingsID²⁵²²
- Channel : SamplesPerPixel²⁵²³
- Image : AcquisitionDate²⁵²⁴
- Image : Description²⁵²⁵
- Image : ID²⁵²⁶
- Image : InstrumentRef²⁵²⁷
- Image : Name²⁵²⁸

²⁵¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁵¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁵¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁵¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁵¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁵¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁵¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁵¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁵¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁵²⁰<http://www.openmicroscopy.org/site/support/ome-model/>

²⁵²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁵²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_ID

²⁵²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁵²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁵²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁵²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁵²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²⁵²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

- Instrument : ID²⁵²⁹
- Laser : ID²⁵³⁰
- Laser : LaserMedium²⁵³¹
- Laser : Type²⁵³²
- Laser : Wavelength²⁵³³
- Microscope : Model²⁵³⁴
- Microscope : Type²⁵³⁵
- Pixels : BigEndian²⁵³⁶
- Pixels : DimensionOrder²⁵³⁷
- Pixels : ID²⁵³⁸
- Pixels : Interleaved²⁵³⁹
- Pixels : SignificantBits²⁵⁴⁰
- Pixels : SizeC²⁵⁴¹
- Pixels : SizeT²⁵⁴²
- Pixels : SizeX²⁵⁴³
- Pixels : SizeY²⁵⁴⁴
- Pixels : SizeZ²⁵⁴⁵
- Pixels : Type²⁵⁴⁶
- Plane : TheC²⁵⁴⁷
- Plane : TheT²⁵⁴⁸
- Plane : TheZ²⁵⁴⁹

Total supported: 29

Total unknown or missing: 446

19.2.70 LIMReader

This page lists supported metadata fields for the Bio-Formats Laboratory Imaging format reader.

These fields are from the [OME data model²⁵⁵⁰](#). Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

²⁵²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²⁵³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

²⁵³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_LaserMedium

²⁵³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Type

²⁵³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Wavelength

²⁵³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁵³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Microscope_Type

²⁵³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁵³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁵³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁵³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁵⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁵⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁵⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁵⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁵⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁵⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁵⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁵⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁵⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁵⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁵⁵⁰<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Laboratory Imaging format reader:

- Channel : ID²⁵⁵¹
- Channel : SamplesPerPixel²⁵⁵²
- Image : AcquisitionDate²⁵⁵³
- Image : ID²⁵⁵⁴
- Image : Name²⁵⁵⁵
- Pixels : BigEndian²⁵⁵⁶
- Pixels : DimensionOrder²⁵⁵⁷
- Pixels : ID²⁵⁵⁸
- Pixels : Interleaved²⁵⁵⁹
- Pixels : SignificantBits²⁵⁶⁰
- Pixels : SizeC²⁵⁶¹
- Pixels : SizeT²⁵⁶²
- Pixels : SizeX²⁵⁶³
- Pixels : SizeY²⁵⁶⁴
- Pixels : SizeZ²⁵⁶⁵
- Pixels : Type²⁵⁶⁶
- Plane : TheC²⁵⁶⁷
- Plane : TheT²⁵⁶⁸
- Plane : TheZ²⁵⁶⁹

Total supported: 19

Total unknown or missing: 456

- ²⁵⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
- ²⁵⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
- ²⁵⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
- ²⁵⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
- ²⁵⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
- ²⁵⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ²⁵⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ²⁵⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ²⁵⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ²⁵⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ²⁵⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ²⁵⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ²⁵⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ²⁵⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ²⁵⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ²⁵⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ²⁵⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ²⁵⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ²⁵⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.71 MetamorphTiffReader

This page lists supported metadata fields for the Bio-Formats Metamorph TIFF format reader.

These fields are from the [OME data model](#)²⁵⁷⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 38 of them (8%).
- Of those, Bio-Formats fully or partially converts 38 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Metamorph TIFF format reader:

- Channel : ID²⁵⁷¹
- Channel : Name²⁵⁷²
- Channel : SamplesPerPixel²⁵⁷³
- Image : AcquisitionDate²⁵⁷⁴
- Image : Description²⁵⁷⁵
- Image : ID²⁵⁷⁶
- Image : Name²⁵⁷⁷
- ImagingEnvironment : Temperature²⁵⁷⁸
- Pixels : BigEndian²⁵⁷⁹
- Pixels : DimensionOrder²⁵⁸⁰
- Pixels : ID²⁵⁸¹
- Pixels : Interleaved²⁵⁸²
- Pixels : PhysicalSizeX²⁵⁸³
- Pixels : PhysicalSizeY²⁵⁸⁴
- Pixels : PhysicalSizeZ²⁵⁸⁵
- Pixels : SignificantBits²⁵⁸⁶
- Pixels : SizeC²⁵⁸⁷
- Pixels : SizeT²⁵⁸⁸

²⁵⁷⁰<http://www.openmicroscopy.org/site/support/ome-model/>

²⁵⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁵⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

²⁵⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁵⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁵⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁵⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁵⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁵⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

²⁵⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁵⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁵⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁵⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁵⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁵⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁵⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁵⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁵⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁵⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

- Pixels : SizeX²⁵⁸⁹
- Pixels : SizeY²⁵⁹⁰
- Pixels : SizeZ²⁵⁹¹
- Pixels : Type²⁵⁹²
- Plane : DeltaT²⁵⁹³
- Plane : ExposureTime²⁵⁹⁴
- Plane : PositionX²⁵⁹⁵
- Plane : PositionY²⁵⁹⁶
- Plane : TheC²⁵⁹⁷
- Plane : TheT²⁵⁹⁸
- Plane : TheZ²⁵⁹⁹
- Plate : ColumnNamingConvention²⁶⁰⁰
- Plate : ID²⁶⁰¹
- Plate : RowNamingConvention²⁶⁰²
- Well : Column²⁶⁰³
- Well : ID²⁶⁰⁴
- Well : Row²⁶⁰⁵
- WellSample : ID²⁶⁰⁶
- WellSample : ImageRef²⁶⁰⁷
- WellSample : Index²⁶⁰⁸

Total supported: 38

Total unknown or missing: 437

19.2.72 MetamorphReader

This page lists supported metadata fields for the Bio-Formats Metamorph STK format reader.

These fields are from the [OME data model](#)²⁶⁰⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- ²⁵⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ²⁵⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ²⁵⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ²⁵⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ²⁵⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT
- ²⁵⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime
- ²⁵⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX
- ²⁵⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY
- ²⁵⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ²⁵⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ²⁵⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ
- ²⁶⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ColumnNamingConvention
- ²⁶⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID
- ²⁶⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_RowNamingConvention
- ²⁶⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column
- ²⁶⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID
- ²⁶⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row
- ²⁶⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID
- ²⁶⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID
- ²⁶⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index
- ²⁶⁰⁹<http://www.openmicroscopy.org/site/support/ome-model/>

- The file format itself supports 43 of them (9%).
- Of those, Bio-Formats fully or partially converts 43 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Metamorph STK format reader:

- Channel : ID²⁶¹⁰
- Channel : LightSourceSettingsID²⁶¹¹
- Channel : LightSourceSettingsWavelength²⁶¹²
- Channel : Name²⁶¹³
- Channel : SamplesPerPixel²⁶¹⁴
- Detector : ID²⁶¹⁵
- Detector : Type²⁶¹⁶
- DetectorSettings : Binning²⁶¹⁷
- DetectorSettings : Gain²⁶¹⁸
- DetectorSettings : ID²⁶¹⁹
- DetectorSettings : ReadOutRate²⁶²⁰
- Image : AcquisitionDate²⁶²¹
- Image : Description²⁶²²
- Image : ID²⁶²³
- Image : InstrumentRef²⁶²⁴
- Image : Name²⁶²⁵
- ImagingEnvironment : Temperature²⁶²⁶
- Instrument : ID²⁶²⁷
- Laser : ID²⁶²⁸
- Laser : LaserMedium²⁶²⁹
- Laser : Type²⁶³⁰
- Pixels : BigEndian²⁶³¹
- Pixels : DimensionOrder²⁶³²

²⁶¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁶¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_ID

²⁶¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_Wavelength

²⁶¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

²⁶¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁶¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

²⁶¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

²⁶¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

²⁶¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

²⁶¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

²⁶²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ReadOutRate

²⁶²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁶²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁶²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁶²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²⁶²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁶²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

²⁶²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²⁶²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

²⁶²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_LaserMedium

²⁶³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Type

²⁶³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁶³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

- Pixels : ID²⁶³³
- Pixels : Interleaved²⁶³⁴
- Pixels : PhysicalSizeX²⁶³⁵
- Pixels : PhysicalSizeY²⁶³⁶
- Pixels : PhysicalSizeZ²⁶³⁷
- Pixels : SignificantBits²⁶³⁸
- Pixels : SizeC²⁶³⁹
- Pixels : SizeT²⁶⁴⁰
- Pixels : SizeX²⁶⁴¹
- Pixels : SizeY²⁶⁴²
- Pixels : SizeZ²⁶⁴³
- Pixels : Type²⁶⁴⁴
- Plane : DeltaT²⁶⁴⁵
- Plane : ExposureTime²⁶⁴⁶
- Plane : PositionX²⁶⁴⁷
- Plane : PositionY²⁶⁴⁸
- Plane : PositionZ²⁶⁴⁹
- Plane : TheC²⁶⁵⁰
- Plane : TheT²⁶⁵¹
- Plane : TheZ²⁶⁵²

Total supported: 43

Total unknown or missing: 432

19.2.73 MIASReader

This page lists supported metadata fields for the Bio-Formats MIAS format reader.

These fields are from the OME data model²⁶⁵³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- ²⁶³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ²⁶³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ²⁶³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ²⁶³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ²⁶³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ²⁶³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ²⁶³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ²⁶⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ²⁶⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ²⁶⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ²⁶⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ²⁶⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ²⁶⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT
- ²⁶⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime
- ²⁶⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX
- ²⁶⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY
- ²⁶⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ
- ²⁶⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ²⁶⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ²⁶⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ
- ²⁶⁵³<http://www.openmicroscopy.org/site/support/ome-model/>

- The file format itself supports 64 of them (13%).
- Of those, Bio-Formats fully or partially converts 64 (100%).

Supported fields

These fields are fully supported by the Bio-Formats MIAS format reader:

- Channel : Color²⁶⁵⁴
- Channel : ID²⁶⁵⁵
- Channel : Name²⁶⁵⁶
- Channel : SamplesPerPixel²⁶⁵⁷
- Ellipse : ID²⁶⁵⁸
- Ellipse : RadiusX²⁶⁵⁹
- Ellipse : RadiusY²⁶⁶⁰
- Ellipse : Text²⁶⁶¹
- Ellipse : TheT²⁶⁶²
- Ellipse : TheZ²⁶⁶³
- Ellipse : X²⁶⁶⁴
- Ellipse : Y²⁶⁶⁵
- Experiment : Description²⁶⁶⁶
- Experiment : ID²⁶⁶⁷
- Experiment : Type²⁶⁶⁸
- Image : AcquisitionDate²⁶⁶⁹
- Image : ExperimentRef²⁶⁷⁰
- Image : ID²⁶⁷¹
- Image : InstrumentRef²⁶⁷²
- Image : Name²⁶⁷³
- Image : ROIRef²⁶⁷⁴
- Instrument : ID²⁶⁷⁵
- Mask : FillColor²⁶⁷⁶

²⁶⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Color

²⁶⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁶⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

²⁶⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁶⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

²⁶⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusX

²⁶⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusY

²⁶⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text

²⁶⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT

²⁶⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

²⁶⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_X

²⁶⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_Y

²⁶⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_Description

²⁶⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_ID

²⁶⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_Type

²⁶⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁶⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimentRef_ID

²⁶⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁶⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²⁶⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁶⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

²⁶⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²⁶⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FillColor

- Mask : Height²⁶⁷⁷
- Mask : ID²⁶⁷⁸
- Mask : StrokeColor²⁶⁷⁹
- Mask : Width²⁶⁸⁰
- Mask : X²⁶⁸¹
- Mask : Y²⁶⁸²
- Objective : ID²⁶⁸³
- Objective : Model²⁶⁸⁴
- Objective : NominalMagnification²⁶⁸⁵
- Pixels : BigEndian²⁶⁸⁶
- Pixels : DimensionOrder²⁶⁸⁷
- Pixels : ID²⁶⁸⁸
- Pixels : Interleaved²⁶⁸⁹
- Pixels : PhysicalSizeX²⁶⁹⁰
- Pixels : PhysicalSizeY²⁶⁹¹
- Pixels : SignificantBits²⁶⁹²
- Pixels : SizeC²⁶⁹³
- Pixels : SizeT²⁶⁹⁴
- Pixels : SizeX²⁶⁹⁵
- Pixels : SizeY²⁶⁹⁶
- Pixels : SizeZ²⁶⁹⁷
- Pixels : Type²⁶⁹⁸
- Plane : ExposureTime²⁶⁹⁹
- Plane : TheC²⁷⁰⁰
- Plane : TheT²⁷⁰¹
- Plane : TheZ²⁷⁰²

²⁶⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_Height

²⁶⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

²⁶⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeColor

²⁶⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_Width

²⁶⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_X

²⁶⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_Y

²⁶⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

²⁶⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁶⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

²⁶⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁶⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁶⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁶⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁶⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁶⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁶⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁶⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁶⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁶⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁶⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁶⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁶⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁶⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

²⁷⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁷⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁷⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

- Plate : ColumnNamingConvention²⁷⁰³
- Plate : ExternalIdentifier²⁷⁰⁴
- Plate : ID²⁷⁰⁵
- Plate : Name²⁷⁰⁶
- Plate : RowNamingConvention²⁷⁰⁷
- PlateAcquisition : ID²⁷⁰⁸
- PlateAcquisition : MaximumFieldCount²⁷⁰⁹
- PlateAcquisition : WellSampleRef²⁷¹⁰
- ROI : ID²⁷¹¹
- Well : Column²⁷¹²
- Well : ID²⁷¹³
- Well : Row²⁷¹⁴
- WellSample : ID²⁷¹⁵
- WellSample : ImageRef²⁷¹⁶
- WellSample : Index²⁷¹⁷

Total supported: 64

Total unknown or missing: 411

19.2.74 MicromanagerReader

This page lists supported metadata fields for the Bio-Formats Micro-Manager format reader.

These fields are from the [OME data model](#)²⁷¹⁸. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 38 of them (8%).
- Of those, Bio-Formats fully or partially converts 38 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Micro-Manager format reader:

- Channel : ID²⁷¹⁹
- Channel : Name²⁷²⁰

²⁷⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ColumnNamingConvention

²⁷⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ExternalIdentifier

²⁷⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID

²⁷⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Name

²⁷⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_RowNamingConvention

²⁷⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_ID

²⁷⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

²⁷¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSampleRef_ID

²⁷¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

²⁷¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column

²⁷¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID

²⁷¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row

²⁷¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID

²⁷¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID

²⁷¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index

²⁷¹⁸<http://www.openmicroscopy.org/site/support/ome-model/>

²⁷¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁷²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

- Channel : SamplesPerPixel²⁷²¹
- Detector : ID²⁷²²
- Detector : Manufacturer²⁷²³
- Detector : Model²⁷²⁴
- Detector : SerialNumber²⁷²⁵
- Detector : Type²⁷²⁶
- DetectorSettings : Binning²⁷²⁷
- DetectorSettings : Gain²⁷²⁸
- DetectorSettings : ID²⁷²⁹
- DetectorSettings : Voltage²⁷³⁰
- Image : AcquisitionDate²⁷³¹
- Image : Description²⁷³²
- Image : ID²⁷³³
- Image : InstrumentRef²⁷³⁴
- Image : Name²⁷³⁵
- ImagingEnvironment : Temperature²⁷³⁶
- Instrument : ID²⁷³⁷
- Pixels : BigEndian²⁷³⁸
- Pixels : DimensionOrder²⁷³⁹
- Pixels : ID²⁷⁴⁰
- Pixels : Interleaved²⁷⁴¹
- Pixels : PhysicalSizeX²⁷⁴²
- Pixels : PhysicalSizeY²⁷⁴³
- Pixels : PhysicalSizeZ²⁷⁴⁴
- Pixels : SignificantBits²⁷⁴⁵
- Pixels : SizeC²⁷⁴⁶

²⁷²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁷²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

²⁷²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

²⁷²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁷²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

²⁷²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

²⁷²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

²⁷²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

²⁷²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

²⁷³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Voltage

²⁷³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁷³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁷³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁷³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²⁷³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁷³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

²⁷³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²⁷³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁷³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁷⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁷⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁷⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁷⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁷⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁷⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁷⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

- Pixels : SizeT²⁷⁴⁷
- Pixels : SizeX²⁷⁴⁸
- Pixels : SizeY²⁷⁴⁹
- Pixels : SizeZ²⁷⁵⁰
- Pixels : Type²⁷⁵¹
- Plane : DeltaT²⁷⁵²
- Plane : ExposureTime²⁷⁵³
- Plane : TheC²⁷⁵⁴
- Plane : TheT²⁷⁵⁵
- Plane : TheZ²⁷⁵⁶

Total supported: 38

Total unknown or missing: 437

19.2.75 MINCReader

This page lists supported metadata fields for the Bio-Formats MINC MRI format reader.

These fields are from the [OME data model](#)²⁷⁵⁷. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 23 of them (4%).
- Of those, Bio-Formats fully or partially converts 23 (100%).

Supported fields

These fields are fully supported by the Bio-Formats MINC MRI format reader:

- Channel : ID²⁷⁵⁸
- Channel : SamplesPerPixel²⁷⁵⁹
- Image : AcquisitionDate²⁷⁶⁰
- Image : Description²⁷⁶¹
- Image : ID²⁷⁶²
- Image : Name²⁷⁶³
- Pixels : BigEndian²⁷⁶⁴

²⁷⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁷⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁷⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁷⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁷⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁷⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

²⁷⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

²⁷⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁷⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁷⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁷⁵⁷<http://www.openmicroscopy.org/site/support/ome-model/>

²⁷⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁷⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁷⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁷⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁷⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁷⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁷⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

- Pixels : DimensionOrder²⁷⁶⁵
- Pixels : ID²⁷⁶⁶
- Pixels : Interleaved²⁷⁶⁷
- Pixels : PhysicalSizeX²⁷⁶⁸
- Pixels : PhysicalSizeY²⁷⁶⁹
- Pixels : PhysicalSizeZ²⁷⁷⁰
- Pixels : SignificantBits²⁷⁷¹
- Pixels : SizeC²⁷⁷²
- Pixels : SizeT²⁷⁷³
- Pixels : SizeX²⁷⁷⁴
- Pixels : SizeY²⁷⁷⁵
- Pixels : SizeZ²⁷⁷⁶
- Pixels : Type²⁷⁷⁷
- Plane : TheC²⁷⁷⁸
- Plane : TheT²⁷⁷⁹
- Plane : TheZ²⁷⁸⁰

Total supported: 23

Total unknown or missing: 452

19.2.76 MRWReader

This page lists supported metadata fields for the Bio-Formats Minolta MRW format reader.

These fields are from the [OME data model](#)²⁷⁸¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Minolta MRW format reader:

- Channel : ID²⁷⁸²

²⁷⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁷⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁷⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁷⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁷⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁷⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁷⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁷⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁷⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁷⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁷⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁷⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁷⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁷⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁷⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁷⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁷⁸¹<http://www.openmicroscopy.org/site/support/ome-model/>

²⁷⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

- Channel : SamplesPerPixel²⁷⁸³
- Image : AcquisitionDate²⁷⁸⁴
- Image : ID²⁷⁸⁵
- Image : Name²⁷⁸⁶
- Pixels : BigEndian²⁷⁸⁷
- Pixels : DimensionOrder²⁷⁸⁸
- Pixels : ID²⁷⁸⁹
- Pixels : Interleaved²⁷⁹⁰
- Pixels : SignificantBits²⁷⁹¹
- Pixels : SizeC²⁷⁹²
- Pixels : SizeT²⁷⁹³
- Pixels : SizeX²⁷⁹⁴
- Pixels : SizeY²⁷⁹⁵
- Pixels : SizeZ²⁷⁹⁶
- Pixels : Type²⁷⁹⁷
- Plane : TheC²⁷⁹⁸
- Plane : TheT²⁷⁹⁹
- Plane : TheZ²⁸⁰⁰

Total supported: 19

Total unknown or missing: 456

19.2.77 MNGReader

This page lists supported metadata fields for the Bio-Formats Multiple Network Graphics format reader.

These fields are from the [OME data model](#)²⁸⁰¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

²⁷⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁷⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁷⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁷⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁷⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁷⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁷⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁷⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁷⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁷⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁷⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁷⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁷⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁷⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁷⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁷⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁷⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁸⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁸⁰¹<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Multiple Network Graphics format reader:

- Channel : ID²⁸⁰²
- Channel : SamplesPerPixel²⁸⁰³
- Image : AcquisitionDate²⁸⁰⁴
- Image : ID²⁸⁰⁵
- Image : Name²⁸⁰⁶
- Pixels : BigEndian²⁸⁰⁷
- Pixels : DimensionOrder²⁸⁰⁸
- Pixels : ID²⁸⁰⁹
- Pixels : Interleaved²⁸¹⁰
- Pixels : SignificantBits²⁸¹¹
- Pixels : SizeC²⁸¹²
- Pixels : SizeT²⁸¹³
- Pixels : SizeX²⁸¹⁴
- Pixels : SizeY²⁸¹⁵
- Pixels : SizeZ²⁸¹⁶
- Pixels : Type²⁸¹⁷
- Plane : TheC²⁸¹⁸
- Plane : TheT²⁸¹⁹
- Plane : TheZ²⁸²⁰

Total supported: 19

Total unknown or missing: 456

19.2.78 MolecularImagingReader

This page lists supported metadata fields for the Bio-Formats Molecular Imaging format reader.

These fields are from the OME data model²⁸²¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

²⁸⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁸⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁸⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁸⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁸⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁸⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁸⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁸⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁸¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁸¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁸¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁸¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁸¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁸¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁸¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁸¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁸¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁸¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁸²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁸²¹<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 21 of them (4%).
- Of those, Bio-Formats fully or partially converts 21 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Molecular Imaging format reader:

- Channel : ID²⁸²²
- Channel : SamplesPerPixel²⁸²³
- Image : AcquisitionDate²⁸²⁴
- Image : ID²⁸²⁵
- Image : Name²⁸²⁶
- Pixels : BigEndian²⁸²⁷
- Pixels : DimensionOrder²⁸²⁸
- Pixels : ID²⁸²⁹
- Pixels : Interleaved²⁸³⁰
- Pixels : PhysicalSizeX²⁸³¹
- Pixels : PhysicalSizeY²⁸³²
- Pixels : SignificantBits²⁸³³
- Pixels : SizeC²⁸³⁴
- Pixels : SizeT²⁸³⁵
- Pixels : SizeX²⁸³⁶
- Pixels : SizeY²⁸³⁷
- Pixels : SizeZ²⁸³⁸
- Pixels : Type²⁸³⁹
- Plane : TheC²⁸⁴⁰
- Plane : TheT²⁸⁴¹
- Plane : TheZ²⁸⁴²

Total supported: 21

Total unknown or missing: 454

²⁸²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
²⁸²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
²⁸²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
²⁸²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
²⁸²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
²⁸²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
²⁸²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
²⁸²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
²⁸³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
²⁸³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
²⁸³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
²⁸³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
²⁸³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
²⁸³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
²⁸³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
²⁸³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
²⁸³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
²⁸³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
²⁸⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
²⁸⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
²⁸⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.79 MRCReader

This page lists supported metadata fields for the Bio-Formats Medical Research Council format reader.

These fields are from the [OME data model](#)²⁸⁴³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Medical Research Council format reader:

- Channel : ID²⁸⁴⁴
- Channel : SamplesPerPixel²⁸⁴⁵
- Image : AcquisitionDate²⁸⁴⁶
- Image : ID²⁸⁴⁷
- Image : Name²⁸⁴⁸
- Pixels : BigEndian²⁸⁴⁹
- Pixels : DimensionOrder²⁸⁵⁰
- Pixels : ID²⁸⁵¹
- Pixels : Interleaved²⁸⁵²
- Pixels : PhysicalSizeX²⁸⁵³
- Pixels : PhysicalSizeY²⁸⁵⁴
- Pixels : PhysicalSizeZ²⁸⁵⁵
- Pixels : SignificantBits²⁸⁵⁶
- Pixels : SizeC²⁸⁵⁷
- Pixels : SizeT²⁸⁵⁸
- Pixels : SizeX²⁸⁵⁹
- Pixels : SizeY²⁸⁶⁰
- Pixels : SizeZ²⁸⁶¹
- Pixels : Type²⁸⁶²

²⁸⁴³<http://www.openmicroscopy.org/site/support/ome-model/>

²⁸⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁸⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁸⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁸⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁸⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁸⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁸⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁸⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁸⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁸⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁸⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁸⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁸⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁸⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁸⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁸⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁸⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁸⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁸⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

- Plane : TheC²⁸⁶³
- Plane : TheT²⁸⁶⁴
- Plane : TheZ²⁸⁶⁵

Total supported: 22

Total unknown or missing: 453

19.2.80 NikonReader

This page lists supported metadata fields for the Bio-Formats Nikon NEF format reader.

These fields are from the [OME data model](#)²⁸⁶⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Nikon NEF format reader:

- Channel : ID²⁸⁶⁷
- Channel : SamplesPerPixel²⁸⁶⁸
- Image : AcquisitionDate²⁸⁶⁹
- Image : ID²⁸⁷⁰
- Image : Name²⁸⁷¹
- Pixels : BigEndian²⁸⁷²
- Pixels : DimensionOrder²⁸⁷³
- Pixels : ID²⁸⁷⁴
- Pixels : Interleaved²⁸⁷⁵
- Pixels : SignificantBits²⁸⁷⁶
- Pixels : SizeC²⁸⁷⁷
- Pixels : SizeT²⁸⁷⁸
- Pixels : SizeX²⁸⁷⁹
- Pixels : SizeY²⁸⁸⁰

²⁸⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁸⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁸⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁸⁶⁶<http://www.openmicroscopy.org/site/support/ome-model/>

²⁸⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁸⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁸⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁸⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁸⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁸⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁸⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁸⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁸⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁸⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁸⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁸⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁸⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁸⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ²⁸⁸¹
- Pixels : Type²⁸⁸²
- Plane : TheC²⁸⁸³
- Plane : TheT²⁸⁸⁴
- Plane : TheZ²⁸⁸⁵

Total supported: 19

Total unknown or missing: 456

19.2.81 NiftiReader

This page lists supported metadata fields for the Bio-Formats NIFTI format reader.

These fields are from the [OME data model](#)²⁸⁸⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 24 of them (5%).
- Of those, Bio-Formats fully or partially converts 24 (100%).

Supported fields

These fields are fully supported by the Bio-Formats NIFTI format reader:

- Channel : ID²⁸⁸⁷
- Channel : SamplesPerPixel²⁸⁸⁸
- Image : AcquisitionDate²⁸⁸⁹
- Image : Description²⁸⁹⁰
- Image : ID²⁸⁹¹
- Image : Name²⁸⁹²
- Pixels : BigEndian²⁸⁹³
- Pixels : DimensionOrder²⁸⁹⁴
- Pixels : ID²⁸⁹⁵
- Pixels : Interleaved²⁸⁹⁶
- Pixels : PhysicalSizeX²⁸⁹⁷
- Pixels : PhysicalSizeY²⁸⁹⁸

²⁸⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁸⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁸⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁸⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁸⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁸⁸⁶<http://www.openmicroscopy.org/site/support/ome-model/>

²⁸⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁸⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁸⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁸⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁸⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁸⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁸⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁸⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

²⁸⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁸⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁸⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁸⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

- Pixels : PhysicalSizeZ²⁸⁹⁹
- Pixels : SignificantBits²⁹⁰⁰
- Pixels : SizeC²⁹⁰¹
- Pixels : SizeT²⁹⁰²
- Pixels : SizeX²⁹⁰³
- Pixels : SizeY²⁹⁰⁴
- Pixels : SizeZ²⁹⁰⁵
- Pixels : TimeIncrement²⁹⁰⁶
- Pixels : Type²⁹⁰⁷
- Plane : TheC²⁹⁰⁸
- Plane : TheT²⁹⁰⁹
- Plane : TheZ²⁹¹⁰

Total supported: 24

Total unknown or missing: 451

19.2.82 NikonElementsTiffReader

This page lists supported metadata fields for the Bio-Formats Nikon Elements TIFF format reader.

These fields are from the [OME data model](#)²⁹¹¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 50 of them (10%).
- Of those, Bio-Formats fully or partially converts 50 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Nikon Elements TIFF format reader:

- Channel : AcquisitionMode²⁹¹²
- Channel : EmissionWavelength²⁹¹³
- Channel : ExcitationWavelength²⁹¹⁴
- Channel : ID²⁹¹⁵
- Channel : Name²⁹¹⁶

²⁸⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

²⁹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁹¹¹<http://www.openmicroscopy.org/site/support/ome-model/>

²⁹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_AcquisitionMode

²⁹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

²⁹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

²⁹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

- Channel : PinholeSize²⁹¹⁷
- Channel : SamplesPerPixel²⁹¹⁸
- Detector : ID²⁹¹⁹
- Detector : Model²⁹²⁰
- Detector : Type²⁹²¹
- DetectorSettings : Binning²⁹²²
- DetectorSettings : Gain²⁹²³
- DetectorSettings : ID²⁹²⁴
- DetectorSettings : ReadOutRate²⁹²⁵
- DetectorSettings : Voltage²⁹²⁶
- Image : AcquisitionDate²⁹²⁷
- Image : ID²⁹²⁸
- Image : InstrumentRef²⁹²⁹
- Image : Name²⁹³⁰
- ImagingEnvironment : Temperature²⁹³¹
- Instrument : ID²⁹³²
- Objective : CalibratedMagnification²⁹³³
- Objective : Correction²⁹³⁴
- Objective : ID²⁹³⁵
- Objective : Immersion²⁹³⁶
- Objective : LensNA²⁹³⁷
- Objective : Model²⁹³⁸
- ObjectiveSettings : ID²⁹³⁹
- ObjectiveSettings : RefractiveIndex²⁹⁴⁰
- Pixels : BigEndian²⁹⁴¹
- Pixels : DimensionOrder²⁹⁴²

²⁹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize

²⁹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

²⁹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

²⁹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

²⁹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

²⁹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

²⁹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ReadOutRate

²⁹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Voltage

²⁹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²⁹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

²⁹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²⁹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification

²⁹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

²⁹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

²⁹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

²⁹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

²⁹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

²⁹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

²⁹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

²⁹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

- Pixels : ID²⁹⁴³
- Pixels : Interleaved²⁹⁴⁴
- Pixels : PhysicalSizeX²⁹⁴⁵
- Pixels : PhysicalSizeY²⁹⁴⁶
- Pixels : PhysicalSizeZ²⁹⁴⁷
- Pixels : SignificantBits²⁹⁴⁸
- Pixels : SizeC²⁹⁴⁹
- Pixels : SizeT²⁹⁵⁰
- Pixels : SizeX²⁹⁵¹
- Pixels : SizeY²⁹⁵²
- Pixels : SizeZ²⁹⁵³
- Pixels : Type²⁹⁵⁴
- Plane : ExposureTime²⁹⁵⁵
- Plane : PositionX²⁹⁵⁶
- Plane : PositionY²⁹⁵⁷
- Plane : PositionZ²⁹⁵⁸
- Plane : TheC²⁹⁵⁹
- Plane : TheT²⁹⁶⁰
- Plane : TheZ²⁹⁶¹

Total supported: 50

Total unknown or missing: 425

19.2.83 NikonTiffReader

This page lists supported metadata fields for the Bio-Formats Nikon TIFF format reader.

These fields are from the [OME data model](#)²⁹⁶². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 47 of them (9%).
- Of those, Bio-Formats fully or partially converts 47 (100%).

²⁹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

²⁹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

²⁹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

²⁹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

²⁹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

²⁹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

²⁹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

²⁹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

²⁹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

²⁹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

²⁹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

²⁹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

²⁹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

²⁹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

²⁹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

²⁹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

²⁹⁶²<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Nikon TIFF format reader:

- Channel : EmissionWavelength²⁹⁶³
- Channel : ExcitationWavelength²⁹⁶⁴
- Channel : ID²⁹⁶⁵
- Channel : PinholeSize²⁹⁶⁶
- Channel : SamplesPerPixel²⁹⁶⁷
- Detector : Gain²⁹⁶⁸
- Detector : ID²⁹⁶⁹
- Detector : Type²⁹⁷⁰
- Dichroic : ID²⁹⁷¹
- Dichroic : Model²⁹⁷²
- Filter : ID²⁹⁷³
- Filter : Model²⁹⁷⁴
- Image : AcquisitionDate²⁹⁷⁵
- Image : Description²⁹⁷⁶
- Image : ID²⁹⁷⁷
- Image : InstrumentRef²⁹⁷⁸
- Image : Name²⁹⁷⁹
- Instrument : ID²⁹⁸⁰
- Laser : ID²⁹⁸¹
- Laser : LaserMedium²⁹⁸²
- Laser : Model²⁹⁸³
- Laser : Type²⁹⁸⁴
- Laser : Wavelength²⁹⁸⁵
- Objective : Correction²⁹⁸⁶

²⁹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

²⁹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

²⁹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

²⁹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize

²⁹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

²⁹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Gain

²⁹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

²⁹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

²⁹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dichroic_ID

²⁹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_ID

²⁹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

²⁹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

²⁹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

²⁹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

²⁹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

²⁹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

²⁹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

²⁹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_LaserMedium

²⁹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

²⁹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Type

²⁹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Wavelength

²⁹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

- Objective : ID²⁹⁸⁷
- Objective : Immersion²⁹⁸⁸
- Objective : LensNA²⁹⁸⁹
- Objective : NominalMagnification²⁹⁹⁰
- Objective : WorkingDistance²⁹⁹¹
- ObjectiveSettings : ID²⁹⁹²
- Pixels : BigEndian²⁹⁹³
- Pixels : DimensionOrder²⁹⁹⁴
- Pixels : ID²⁹⁹⁵
- Pixels : Interleaved²⁹⁹⁶
- Pixels : PhysicalSizeX²⁹⁹⁷
- Pixels : PhysicalSizeY²⁹⁹⁸
- Pixels : PhysicalSizeZ²⁹⁹⁹
- Pixels : SignificantBits³⁰⁰⁰
- Pixels : SizeC³⁰⁰¹
- Pixels : SizeT³⁰⁰²
- Pixels : SizeX³⁰⁰³
- Pixels : SizeY³⁰⁰⁴
- Pixels : SizeZ³⁰⁰⁵
- Pixels : Type³⁰⁰⁶
- Plane : TheC³⁰⁰⁷
- Plane : TheT³⁰⁰⁸
- Plane : TheZ³⁰⁰⁹

Total supported: 47

Total unknown or missing: 428

- ²⁹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID
- ²⁹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion
- ²⁹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA
- ²⁹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification
- ²⁹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_WorkingDistance
- ²⁹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID
- ²⁹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ²⁹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ²⁹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ²⁹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ²⁹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ²⁹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ²⁹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ³⁰⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ³⁰⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ³⁰⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ³⁰⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ³⁰⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ³⁰⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ³⁰⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ³⁰⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ³⁰⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ³⁰⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.84 NativeND2Reader

This page lists supported metadata fields for the Bio-Formats Nikon ND2 format reader.

These fields are from the [OME data model](#)³⁰¹⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 52 of them (10%).
- Of those, Bio-Formats fully or partially converts 52 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Nikon ND2 format reader:

- Channel : AcquisitionMode³⁰¹¹
- Channel : Color³⁰¹²
- Channel : EmissionWavelength³⁰¹³
- Channel : ExcitationWavelength³⁰¹⁴
- Channel : ID³⁰¹⁵
- Channel : Name³⁰¹⁶
- Channel : PinholeSize³⁰¹⁷
- Channel : SamplesPerPixel³⁰¹⁸
- Detector : ID³⁰¹⁹
- Detector : Model³⁰²⁰
- Detector : Type³⁰²¹
- DetectorSettings : Binning³⁰²²
- DetectorSettings : Gain³⁰²³
- DetectorSettings : ID³⁰²⁴
- DetectorSettings : ReadOutRate³⁰²⁵
- DetectorSettings : Voltage³⁰²⁶
- Image : AcquisitionDate³⁰²⁷
- Image : ID³⁰²⁸
- Image : InstrumentRef³⁰²⁹

³⁰¹⁰<http://www.openmicroscopy.org/site/support/ome-model/>

³⁰¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_AcquisitionMode

³⁰¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Color

³⁰¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

³⁰¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

³⁰¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁰¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

³⁰¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize

³⁰¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁰¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

³⁰²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

³⁰²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

³⁰²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

³⁰²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

³⁰²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

³⁰²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ReadOutRate

³⁰²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Voltage

³⁰²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁰²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁰²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

- Image : Name³⁰³⁰
- ImagingEnvironment : Temperature³⁰³¹
- Instrument : ID³⁰³²
- Objective : CalibratedMagnification³⁰³³
- Objective : Correction³⁰³⁴
- Objective : ID³⁰³⁵
- Objective : Immersion³⁰³⁶
- Objective : LensNA³⁰³⁷
- Objective : Model³⁰³⁸
- ObjectiveSettings : ID³⁰³⁹
- ObjectiveSettings : RefractiveIndex³⁰⁴⁰
- Pixels : BigEndian³⁰⁴¹
- Pixels : DimensionOrder³⁰⁴²
- Pixels : ID³⁰⁴³
- Pixels : Interleaved³⁰⁴⁴
- Pixels : PhysicalSizeX³⁰⁴⁵
- Pixels : PhysicalSizeY³⁰⁴⁶
- Pixels : PhysicalSizeZ³⁰⁴⁷
- Pixels : SignificantBits³⁰⁴⁸
- Pixels : SizeC³⁰⁴⁹
- Pixels : SizeT³⁰⁵⁰
- Pixels : SizeX³⁰⁵¹
- Pixels : SizeY³⁰⁵²
- Pixels : SizeZ³⁰⁵³
- Pixels : Type³⁰⁵⁴
- Plane : DeltaT³⁰⁵⁵

³⁰³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁰³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

³⁰³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

³⁰³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification

³⁰³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

³⁰³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

³⁰³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

³⁰³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

³⁰³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

³⁰³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

³⁰⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

³⁰⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁰⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁰⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁰⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁰⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁰⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁰⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

³⁰⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁰⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁰⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁰⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁰⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁰⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁰⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁰⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

- Plane : ExposureTime³⁰⁵⁶
- Plane : PositionX³⁰⁵⁷
- Plane : PositionY³⁰⁵⁸
- Plane : PositionZ³⁰⁵⁹
- Plane : TheC³⁰⁶⁰
- Plane : TheT³⁰⁶¹
- Plane : TheZ³⁰⁶²

Total supported: 52

Total unknown or missing: 423

19.2.85 NRRDReader

This page lists supported metadata fields for the Bio-Formats NRRD format reader.

These fields are from the [OME data model](#)³⁰⁶³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats NRRD format reader:

- Channel : ID³⁰⁶⁴
- Channel : SamplesPerPixel³⁰⁶⁵
- Image : AcquisitionDate³⁰⁶⁶
- Image : ID³⁰⁶⁷
- Image : Name³⁰⁶⁸
- Pixels : BigEndian³⁰⁶⁹
- Pixels : DimensionOrder³⁰⁷⁰
- Pixels : ID³⁰⁷¹
- Pixels : Interleaved³⁰⁷²
- Pixels : PhysicalSizeX³⁰⁷³

³⁰⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

³⁰⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

³⁰⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

³⁰⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

³⁰⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁰⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁰⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁰⁶³<http://www.openmicroscopy.org/site/support/ome-model/>

³⁰⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁰⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁰⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁰⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁰⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁰⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁰⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁰⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁰⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁰⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

- Pixels : PhysicalSizeY³⁰⁷⁴
- Pixels : PhysicalSizeZ³⁰⁷⁵
- Pixels : SignificantBits³⁰⁷⁶
- Pixels : SizeC³⁰⁷⁷
- Pixels : SizeT³⁰⁷⁸
- Pixels : SizeX³⁰⁷⁹
- Pixels : SizeY³⁰⁸⁰
- Pixels : SizeZ³⁰⁸¹
- Pixels : Type³⁰⁸²
- Plane : TheC³⁰⁸³
- Plane : TheT³⁰⁸⁴
- Plane : TheZ³⁰⁸⁵

Total supported: 22

Total unknown or missing: 453

19.2.86 APLReader

This page lists supported metadata fields for the Bio-Formats Olympus APL format reader.

These fields are from the [OME data model](#)³⁰⁸⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 21 of them (4%).
- Of those, Bio-Formats fully or partially converts 21 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Olympus APL format reader:

- Channel : ID³⁰⁸⁷
- Channel : SamplesPerPixel³⁰⁸⁸
- Image : AcquisitionDate³⁰⁸⁹
- Image : ID³⁰⁹⁰
- Image : Name³⁰⁹¹

³⁰⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁰⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

³⁰⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁰⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁰⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁰⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁰⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁰⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁰⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁰⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁰⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁰⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁰⁸⁶<http://www.openmicroscopy.org/site/support/ome-model/>

³⁰⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁰⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁰⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁰⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁰⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

- Pixels : BigEndian³⁰⁹²
- Pixels : DimensionOrder³⁰⁹³
- Pixels : ID³⁰⁹⁴
- Pixels : Interleaved³⁰⁹⁵
- Pixels : PhysicalSizeX³⁰⁹⁶
- Pixels : PhysicalSizeY³⁰⁹⁷
- Pixels : SignificantBits³⁰⁹⁸
- Pixels : SizeC³⁰⁹⁹
- Pixels : SizeT³¹⁰⁰
- Pixels : SizeX³¹⁰¹
- Pixels : SizeY³¹⁰²
- Pixels : SizeZ³¹⁰³
- Pixels : Type³¹⁰⁴
- Plane : TheC³¹⁰⁵
- Plane : TheT³¹⁰⁶
- Plane : TheZ³¹⁰⁷

Total supported: 21

Total unknown or missing: 454

19.2.87 FV1000Reader

This page lists supported metadata fields for the Bio-Formats Olympus FV1000 format reader.

These fields are from the OME data model³¹⁰⁸. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 109 of them (22%).
- Of those, Bio-Formats fully or partially converts 109 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Olympus FV1000 format reader:

- Channel : EmissionWavelength³¹⁰⁹

³⁰⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁰⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁰⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁰⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁰⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁰⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁰⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁰⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³¹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³¹⁰⁸<http://www.openmicroscopy.org/site/support/ome-model/>

³¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

- Channel : ExcitationWavelength³¹¹⁰
- Channel : ID³¹¹¹
- Channel : IlluminationType³¹¹²
- Channel : LightSourceSettingsID³¹¹³
- Channel : LightSourceSettingsWavelength³¹¹⁴
- Channel : Name³¹¹⁵
- Channel : SamplesPerPixel³¹¹⁶
- Detector : Gain³¹¹⁷
- Detector : ID³¹¹⁸
- Detector : Type³¹¹⁹
- Detector : Voltage³¹²⁰
- DetectorSettings : ID³¹²¹
- Dichroic : ID³¹²²
- Dichroic : Model³¹²³
- Ellipse : FontSize³¹²⁴
- Ellipse : ID³¹²⁵
- Ellipse : RadiusX³¹²⁶
- Ellipse : RadiusY³¹²⁷
- Ellipse : StrokeWidth³¹²⁸
- Ellipse : TheT³¹²⁹
- Ellipse : TheZ³¹³⁰
- Ellipse : Transform³¹³¹
- Ellipse : X³¹³²
- Ellipse : Y³¹³³
- Filter : ID³¹³⁴
- Filter : Model³¹³⁵

³¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

³¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³¹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_IlluminationType

³¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_ID

³¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSourceSettings_Wavelength

³¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

³¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Gain

³¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

³¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

³¹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Voltage

³¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

³¹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dichroic_ID

³¹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

³¹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

³¹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

³¹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusX

³¹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusY

³¹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

³¹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT

³¹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

³¹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform

³¹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_X

³¹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_Y

³¹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_ID

³¹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

- Image : AcquisitionDate³¹³⁶
- Image : ID³¹³⁷
- Image : InstrumentRef³¹³⁸
- Image : Name³¹³⁹
- Image : ROIRef³¹⁴⁰
- Instrument : ID³¹⁴¹
- Laser : ID³¹⁴²
- Laser : LaserMedium³¹⁴³
- Laser : Type³¹⁴⁴
- Laser : Wavelength³¹⁴⁵
- LightPath : DichroicRef³¹⁴⁶
- LightPath : EmissionFilterRef³¹⁴⁷
- Line : FontSize³¹⁴⁸
- Line : ID³¹⁴⁹
- Line : StrokeWidth³¹⁵⁰
- Line : TheT³¹⁵¹
- Line : TheZ³¹⁵²
- Line : Transform³¹⁵³
- Line : X1³¹⁵⁴
- Line : X2³¹⁵⁵
- Line : Y1³¹⁵⁶
- Line : Y2³¹⁵⁷
- Objective : Correction³¹⁵⁸
- Objective : ID³¹⁵⁹
- Objective : Immersion³¹⁶⁰
- Objective : LensNA³¹⁶¹

³¹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³¹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³¹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

³¹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³¹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

³¹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

³¹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

³¹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_LaserMedium

³¹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Type

³¹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Wavelength

³¹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DichroicRef_ID

³¹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

³¹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

³¹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

³¹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

³¹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT

³¹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

³¹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform

³¹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X1

³¹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X2

³¹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y1

³¹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y2

³¹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

³¹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

³¹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

³¹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

- Objective : Model³¹⁶²
- Objective : NominalMagnification³¹⁶³
- Objective : WorkingDistance³¹⁶⁴
- ObjectiveSettings : ID³¹⁶⁵
- Pixels : BigEndian³¹⁶⁶
- Pixels : DimensionOrder³¹⁶⁷
- Pixels : ID³¹⁶⁸
- Pixels : Interleaved³¹⁶⁹
- Pixels : PhysicalSizeX³¹⁷⁰
- Pixels : PhysicalSizeY³¹⁷¹
- Pixels : PhysicalSizeZ³¹⁷²
- Pixels : SignificantBits³¹⁷³
- Pixels : SizeC³¹⁷⁴
- Pixels : SizeT³¹⁷⁵
- Pixels : SizeX³¹⁷⁶
- Pixels : SizeY³¹⁷⁷
- Pixels : SizeZ³¹⁷⁸
- Pixels : TimeIncrement³¹⁷⁹
- Pixels : Type³¹⁸⁰
- Plane : TheC³¹⁸¹
- Plane : TheT³¹⁸²
- Plane : TheZ³¹⁸³
- Point : FontSize³¹⁸⁴
- Point : ID³¹⁸⁵
- Point : StrokeWidth³¹⁸⁶
- Point : TheT³¹⁸⁷

³¹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

³¹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

³¹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_WorkingDistance

³¹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

³¹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³¹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³¹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³¹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³¹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³¹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³¹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

³¹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³¹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³¹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³¹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³¹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³¹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³¹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

³¹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³¹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³¹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³¹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³¹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

³¹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

³¹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

³¹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT

- Point : TheZ³¹⁸⁸
- Point : X³¹⁸⁹
- Point : Y³¹⁹⁰
- Polygon : FontSize³¹⁹¹
- Polygon : ID³¹⁹²
- Polygon : Points³¹⁹³
- Polygon : StrokeWidth³¹⁹⁴
- Polygon : TheT³¹⁹⁵
- Polygon : TheZ³¹⁹⁶
- Polygon : Transform³¹⁹⁷
- Polyline : FontSize³¹⁹⁸
- Polyline : ID³¹⁹⁹
- Polyline : Points³²⁰⁰
- Polyline : StrokeWidth³²⁰¹
- Polyline : TheT³²⁰²
- Polyline : TheZ³²⁰³
- Polyline : Transform³²⁰⁴
- ROI : ID³²⁰⁵
- Rectangle : FontSize³²⁰⁶
- Rectangle : Height³²⁰⁷
- Rectangle : ID³²⁰⁸
- Rectangle : StrokeWidth³²⁰⁹
- Rectangle : TheT³²¹⁰
- Rectangle : TheZ³²¹¹
- Rectangle : Transform³²¹²
- Rectangle : Width³²¹³

³¹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

³¹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Point_X

³¹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Point_Y

³¹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

³¹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

³¹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polygon_Points

³¹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

³¹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT

³¹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

³¹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform

³¹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

³¹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

³²⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polyline_Points

³²⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

³²⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT

³²⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

³²⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform

³²⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

³²⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

³²⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Height

³²⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

³²⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

³²¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheT

³²¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_TheZ

³²¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform

³²¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Width

- Rectangle : X³²¹⁴
- Rectangle : Y³²¹⁵
- TransmittanceRange : CutIn³²¹⁶
- TransmittanceRange : CutOut³²¹⁷

Total supported: 109

Total unknown or missing: 366

19.2.88 FluoviewReader

This page lists supported metadata fields for the Bio-Formats Olympus Fluoview/ABD TIFF format reader.

These fields are from the OME data model³²¹⁸. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 49 of them (10%).
- Of those, Bio-Formats fully or partially converts 49 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Olympus Fluoview/ABD TIFF format reader:

- Channel : ID³²¹⁹
- Channel : Name³²²⁰
- Channel : SamplesPerPixel³²²¹
- Detector : ID³²²²
- Detector : Manufacturer³²²³
- Detector : Model³²²⁴
- Detector : Type³²²⁵
- DetectorSettings : Gain³²²⁶
- DetectorSettings : ID³²²⁷
- DetectorSettings : Offset³²²⁸
- DetectorSettings : ReadOutRate³²²⁹
- DetectorSettings : Voltage³²³⁰
- Image : AcquisitionDate³²³¹

³²¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_X

³²¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Y

³²¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutIn

³²¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutOut

³²¹⁸<http://www.openmicroscopy.org/site/support/ome-model/>

³²¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³²²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

³²²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³²²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

³²²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³²²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

³²²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

³²²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

³²²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

³²²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Offset

³²²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ReadOutRate

³²³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Voltage

³²³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

- Image : Description³²³²
- Image : ID³²³³
- Image : InstrumentRef³²³⁴
- Image : Name³²³⁵
- ImagingEnvironment : Temperature³²³⁶
- Instrument : ID³²³⁷
- Objective : CalibratedMagnification³²³⁸
- Objective : Correction³²³⁹
- Objective : ID³²⁴⁰
- Objective : Immersion³²⁴¹
- Objective : LensNA³²⁴²
- Objective : Model³²⁴³
- ObjectiveSettings : ID³²⁴⁴
- Pixels : BigEndian³²⁴⁵
- Pixels : DimensionOrder³²⁴⁶
- Pixels : ID³²⁴⁷
- Pixels : Interleaved³²⁴⁸
- Pixels : PhysicalSizeX³²⁴⁹
- Pixels : PhysicalSizeY³²⁵⁰
- Pixels : PhysicalSizeZ³²⁵¹
- Pixels : SignificantBits³²⁵²
- Pixels : SizeC³²⁵³
- Pixels : SizeT³²⁵⁴
- Pixels : SizeX³²⁵⁵
- Pixels : SizeY³²⁵⁶
- Pixels : SizeZ³²⁵⁷

³²³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

³²³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³²³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

³²³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³²³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

³²³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

³²³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification

³²³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

³²⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

³²⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

³²⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

³²⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

³²⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

³²⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³²⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³²⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³²⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³²⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³²⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³²⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

³²⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³²⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³²⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³²⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³²⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³²⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

- Pixels : TimeIncrement³²⁵⁸
- Pixels : Type³²⁵⁹
- Plane : DeltaT³²⁶⁰
- Plane : ExposureTime³²⁶¹
- Plane : PositionX³²⁶²
- Plane : PositionY³²⁶³
- Plane : PositionZ³²⁶⁴
- Plane : TheC³²⁶⁵
- Plane : TheT³²⁶⁶
- Plane : TheZ³²⁶⁷

Total supported: 49

Total unknown or missing: 426

19.2.89 ScanrReader

This page lists supported metadata fields for the Bio-Formats Olympus ScanR format reader.

These fields are from the [OME data model](#)³²⁶⁸. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 43 of them (9%).
- Of those, Bio-Formats fully or partially converts 43 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Olympus ScanR format reader:

- Channel : ID³²⁶⁹
- Channel : Name³²⁷⁰
- Channel : SamplesPerPixel³²⁷¹
- Image : AcquisitionDate³²⁷²
- Image : ID³²⁷³
- Image : Name³²⁷⁴
- Pixels : BigEndian³²⁷⁵

³²⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

³²⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³²⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

³²⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

³²⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

³²⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

³²⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

³²⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³²⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³²⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³²⁶⁸<http://www.openmicroscopy.org/site/support/ome-model/>

³²⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³²⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

³²⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³²⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³²⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³²⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³²⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

- Pixels : DimensionOrder³²⁷⁶
- Pixels : ID³²⁷⁷
- Pixels : Interleaved³²⁷⁸
- Pixels : PhysicalSizeX³²⁷⁹
- Pixels : PhysicalSizeY³²⁸⁰
- Pixels : SignificantBits³²⁸¹
- Pixels : SizeC³²⁸²
- Pixels : SizeT³²⁸³
- Pixels : SizeX³²⁸⁴
- Pixels : SizeY³²⁸⁵
- Pixels : SizeZ³²⁸⁶
- Pixels : Type³²⁸⁷
- Plane : DeltaT³²⁸⁸
- Plane : ExposureTime³²⁸⁹
- Plane : PositionX³²⁹⁰
- Plane : PositionY³²⁹¹
- Plane : TheC³²⁹²
- Plane : TheT³²⁹³
- Plane : TheZ³²⁹⁴
- Plate : ColumnNamingConvention³²⁹⁵
- Plate : Columns³²⁹⁶
- Plate : ID³²⁹⁷
- Plate : Name³²⁹⁸
- Plate : RowNamingConvention³²⁹⁹
- Plate : Rows³³⁰⁰
- PlateAcquisition : ID³³⁰¹

³²⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³²⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³²⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³²⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³²⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³²⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³²⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³²⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³²⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³²⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³²⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³²⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³²⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

³²⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

³²⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

³²⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

³²⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³²⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³²⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³²⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ColumnNamingConvention

³²⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Columns

³²⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID

³²⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Name

³²⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_RowNamingConvention

³³⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Rows

³³⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_ID

- PlateAcquisition : MaximumFieldCount³³⁰²
- PlateAcquisition : WellSampleRef³³⁰³
- Well : Column³³⁰⁴
- Well : ID³³⁰⁵
- Well : Row³³⁰⁶
- WellSample : ID³³⁰⁷
- WellSample : ImageRef³³⁰⁸
- WellSample : Index³³⁰⁹
- WellSample : PositionX³³¹⁰
- WellSample : PositionY³³¹¹

Total supported: 43

Total unknown or missing: 432

19.2.90 SISReader

This page lists supported metadata fields for the Bio-Formats Olympus SIS TIFF format reader.

These fields are from the [OME data model](#)³³¹². Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 33 of them (6%).
- Of those, Bio-Formats fully or partially converts 33 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Olympus SIS TIFF format reader:

- Channel : ID³³¹³
- Channel : Name³³¹⁴
- Channel : SamplesPerPixel³³¹⁵
- Detector : ID³³¹⁶
- Detector : Model³³¹⁷
- Detector : Type³³¹⁸
- DetectorSettings : ID³³¹⁹

³³⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

³³⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSampleRef_ID

³³⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column

³³⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID

³³⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row

³³⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID

³³⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID

³³⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index

³³¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionX

³³¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_PositionY

³³¹²<http://www.openmicroscopy.org/site/support/ome-model/>

³³¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³³¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

³³¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³³¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

³³¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

³³¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

³³¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

- Image : AcquisitionDate³³²⁰
- Image : ID³³²¹
- Image : InstrumentRef³³²²
- Image : Name³³²³
- Instrument : ID³³²⁴
- Objective : Correction³³²⁵
- Objective : ID³³²⁶
- Objective : Immersion³³²⁷
- Objective : NominalMagnification³³²⁸
- ObjectiveSettings : ID³³²⁹
- Pixels : BigEndian³³³⁰
- Pixels : DimensionOrder³³³¹
- Pixels : ID³³³²
- Pixels : Interleaved³³³³
- Pixels : PhysicalSizeX³³³⁴
- Pixels : PhysicalSizeY³³³⁵
- Pixels : SignificantBits³³³⁶
- Pixels : SizeC³³³⁷
- Pixels : SizeT³³³⁸
- Pixels : SizeX³³³⁹
- Pixels : SizeY³³⁴⁰
- Pixels : SizeZ³³⁴¹
- Pixels : Type³³⁴²
- Plane : TheC³³⁴³
- Plane : TheT³³⁴⁴
- Plane : TheZ³³⁴⁵

³³²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³³²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³³²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

³³²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³³²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

³³²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

³³²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

³³²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

³³²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

³³²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

³³³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³³³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³³³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³³³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³³³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³³³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³³³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³³³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³³³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³³³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³³⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³³⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³³⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³³⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³³⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³³⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

Total supported: 33

Total unknown or missing: 442

19.2.91 OMETiffReader

This page lists supported metadata fields for the Bio-Formats OME-TIFF format reader.

These fields are from the [OME data model](#)³³⁴⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats OME-TIFF format reader:

- Channel : ID³³⁴⁷
- Channel : SamplesPerPixel³³⁴⁸
- Image : AcquisitionDate³³⁴⁹
- Image : ID³³⁵⁰
- Image : Name³³⁵¹
- Pixels : BigEndian³³⁵²
- Pixels : DimensionOrder³³⁵³
- Pixels : ID³³⁵⁴
- Pixels : Interleaved³³⁵⁵
- Pixels : SignificantBits³³⁵⁶
- Pixels : SizeC³³⁵⁷
- Pixels : SizeT³³⁵⁸
- Pixels : SizeX³³⁵⁹
- Pixels : SizeY³³⁶⁰
- Pixels : SizeZ³³⁶¹
- Pixels : Type³³⁶²
- Plane : TheC³³⁶³

³³⁴⁶<http://www.openmicroscopy.org/site/support/ome-model/>

³³⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³³⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³³⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³³⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³³⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³³⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³³⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³³⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³³⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³³⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³³⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³³⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³³⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³³⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³³⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³³⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³³⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

- Plane : TheT³³⁶⁴
- Plane : TheZ³³⁶⁵

Total supported: 19

Total unknown or missing: 456

19.2.92 OMEXMLReader

This page lists supported metadata fields for the Bio-Formats OME-XML format reader.

These fields are from the [OME data model](#)³³⁶⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats OME-XML format reader:

- Channel : ID³³⁶⁷
- Channel : SamplesPerPixel³³⁶⁸
- Image : AcquisitionDate³³⁶⁹
- Image : ID³³⁷⁰
- Image : Name³³⁷¹
- Pixels : BigEndian³³⁷²
- Pixels : DimensionOrder³³⁷³
- Pixels : ID³³⁷⁴
- Pixels : Interleaved³³⁷⁵
- Pixels : SignificantBits³³⁷⁶
- Pixels : SizeC³³⁷⁷
- Pixels : SizeT³³⁷⁸
- Pixels : SizeX³³⁷⁹
- Pixels : SizeY³³⁸⁰
- Pixels : SizeZ³³⁸¹

³³⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³³⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³³⁶⁶<http://www.openmicroscopy.org/site/support/ome-model/>

³³⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³³⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³³⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³³⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³³⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³³⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³³⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³³⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³³⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³³⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³³⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³³⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³³⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³³⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³³⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

- Pixels : Type³³⁸²
- Plane : TheC³³⁸³
- Plane : TheT³³⁸⁴
- Plane : TheZ³³⁸⁵

Total supported: 19

Total unknown or missing: 456

19.2.93 OxfordInstrumentsReader

This page lists supported metadata fields for the Bio-Formats Oxford Instruments format reader.

These fields are from the [OME data model](#)³³⁸⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Oxford Instruments format reader:

- Channel : ID³³⁸⁷
- Channel : SamplesPerPixel³³⁸⁸
- Image : AcquisitionDate³³⁸⁹
- Image : Description³³⁹⁰
- Image : ID³³⁹¹
- Image : Name³³⁹²
- Pixels : BigEndian³³⁹³
- Pixels : DimensionOrder³³⁹⁴
- Pixels : ID³³⁹⁵
- Pixels : Interleaved³³⁹⁶
- Pixels : PhysicalSizeX³³⁹⁷
- Pixels : PhysicalSizeY³³⁹⁸
- Pixels : SignificantBits³³⁹⁹

³³⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³³⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³³⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³³⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³³⁸⁶<http://www.openmicroscopy.org/site/support/ome-model/>

³³⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³³⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³³⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³³⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

³³⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³³⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³³⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³³⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³³⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³³⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³³⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³³⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³³⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

- Pixels : SizeC³⁴⁰⁰
- Pixels : SizeT³⁴⁰¹
- Pixels : SizeX³⁴⁰²
- Pixels : SizeY³⁴⁰³
- Pixels : SizeZ³⁴⁰⁴
- Pixels : Type³⁴⁰⁵
- Plane : TheC³⁴⁰⁶
- Plane : TheT³⁴⁰⁷
- Plane : TheZ³⁴⁰⁸

Total supported: 22

Total unknown or missing: 453

19.2.94 PCORAWReader

This page lists supported metadata fields for the Bio-Formats PCO-RAW format reader.

These fields are from the [OME data model](#)³⁴⁰⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 26 of them (5%).
- Of those, Bio-Formats fully or partially converts 26 (100%).

Supported fields

These fields are fully supported by the Bio-Formats PCO-RAW format reader:

- Channel : ID³⁴¹⁰
- Channel : SamplesPerPixel³⁴¹¹
- Detector : ID³⁴¹²
- Detector : SerialNumber³⁴¹³
- DetectorSettings : Binning³⁴¹⁴
- DetectorSettings : ID³⁴¹⁵
- Image : AcquisitionDate³⁴¹⁶
- Image : Description³⁴¹⁷

³⁴⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁴⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁴⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁴⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁴⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁴⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁴⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁴⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁴⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁴⁰⁹<http://www.openmicroscopy.org/site/support/ome-model/>

³⁴¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁴¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁴¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

³⁴¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁴¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

³⁴¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

³⁴¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁴¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

- Image : ID³⁴¹⁸
- Image : Name³⁴¹⁹
- Instrument : ID³⁴²⁰
- Pixels : BigEndian³⁴²¹
- Pixels : DimensionOrder³⁴²²
- Pixels : ID³⁴²³
- Pixels : Interleaved³⁴²⁴
- Pixels : SignificantBits³⁴²⁵
- Pixels : SizeC³⁴²⁶
- Pixels : SizeT³⁴²⁷
- Pixels : SizeX³⁴²⁸
- Pixels : SizeY³⁴²⁹
- Pixels : SizeZ³⁴³⁰
- Pixels : Type³⁴³¹
- Plane : ExposureTime³⁴³²
- Plane : TheC³⁴³³
- Plane : TheT³⁴³⁴
- Plane : TheZ³⁴³⁵

Total supported: 26

Total unknown or missing: 449

19.2.95 PCXReader

This page lists supported metadata fields for the Bio-Formats PCX format reader.

These fields are from the [OME data model](#)³⁴³⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

³⁴¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁴¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁴²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

³⁴²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁴²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁴²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁴²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁴²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁴²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁴²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁴²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁴²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁴³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁴³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁴³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

³⁴³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁴³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁴³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁴³⁶<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats PCX format reader:

- Channel : ID³⁴³⁷
- Channel : SamplesPerPixel³⁴³⁸
- Image : AcquisitionDate³⁴³⁹
- Image : ID³⁴⁴⁰
- Image : Name³⁴⁴¹
- Pixels : BigEndian³⁴⁴²
- Pixels : DimensionOrder³⁴⁴³
- Pixels : ID³⁴⁴⁴
- Pixels : Interleaved³⁴⁴⁵
- Pixels : SignificantBits³⁴⁴⁶
- Pixels : SizeC³⁴⁴⁷
- Pixels : SizeT³⁴⁴⁸
- Pixels : SizeX³⁴⁴⁹
- Pixels : SizeY³⁴⁵⁰
- Pixels : SizeZ³⁴⁵¹
- Pixels : Type³⁴⁵²
- Plane : TheC³⁴⁵³
- Plane : TheT³⁴⁵⁴
- Plane : TheZ³⁴⁵⁵

Total supported: 19

Total unknown or missing: 456

19.2.96 PDSReader

This page lists supported metadata fields for the Bio-Formats Perkin Elmer Densitometer format reader.

These fields are from the OME data model³⁴⁵⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

-
- ³⁴³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
 - ³⁴³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
 - ³⁴³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
 - ³⁴⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
 - ³⁴⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
 - ³⁴⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
 - ³⁴⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
 - ³⁴⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
 - ³⁴⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
 - ³⁴⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
 - ³⁴⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
 - ³⁴⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
 - ³⁴⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
 - ³⁴⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
 - ³⁴⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
 - ³⁴⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
 - ³⁴⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
 - ³⁴⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
 - ³⁴⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ
 - ³⁴⁵⁶<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 23 of them (4%).
- Of those, Bio-Formats fully or partially converts 23 (100%).

Supported fields**These fields are fully supported by the Bio-Formats Perkin Elmer Densitometer format reader:**

- Channel : ID³⁴⁵⁷
- Channel : SamplesPerPixel³⁴⁵⁸
- Image : AcquisitionDate³⁴⁵⁹
- Image : ID³⁴⁶⁰
- Image : Name³⁴⁶¹
- Pixels : BigEndian³⁴⁶²
- Pixels : DimensionOrder³⁴⁶³
- Pixels : ID³⁴⁶⁴
- Pixels : Interleaved³⁴⁶⁵
- Pixels : PhysicalSizeX³⁴⁶⁶
- Pixels : PhysicalSizeY³⁴⁶⁷
- Pixels : SignificantBits³⁴⁶⁸
- Pixels : SizeC³⁴⁶⁹
- Pixels : SizeT³⁴⁷⁰
- Pixels : SizeX³⁴⁷¹
- Pixels : SizeY³⁴⁷²
- Pixels : SizeZ³⁴⁷³
- Pixels : Type³⁴⁷⁴
- Plane : PositionX³⁴⁷⁵
- Plane : PositionY³⁴⁷⁶
- Plane : TheC³⁴⁷⁷
- Plane : TheT³⁴⁷⁸

³⁴⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁴⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁴⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁴⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁴⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁴⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁴⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁴⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁴⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁴⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁴⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁴⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁴⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁴⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁴⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁴⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁴⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁴⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁴⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

³⁴⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

³⁴⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁴⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

- Plane : TheZ³⁴⁷⁹

Total supported: 23

Total unknown or missing: 452

19.2.97 OperettaReader

This page lists supported metadata fields for the Bio-Formats PerkinElmer Operetta format reader.

These fields are from the [OME data model](#)³⁴⁸⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 43 of them (9%).
- Of those, Bio-Formats fully or partially converts 43 (100%).

Supported fields

These fields are fully supported by the Bio-Formats PerkinElmer Operetta format reader:

- Channel : ID³⁴⁸¹
- Channel : Name³⁴⁸²
- Channel : SamplesPerPixel³⁴⁸³
- Experimenter : ID³⁴⁸⁴
- Experimenter : LastName³⁴⁸⁵
- Image : AcquisitionDate³⁴⁸⁶
- Image : ExperimenterRef³⁴⁸⁷
- Image : ID³⁴⁸⁸
- Image : Name³⁴⁸⁹
- Pixels : BigEndian³⁴⁹⁰
- Pixels : DimensionOrder³⁴⁹¹
- Pixels : ID³⁴⁹²
- Pixels : Interleaved³⁴⁹³
- Pixels : PhysicalSizeX³⁴⁹⁴
- Pixels : PhysicalSizeY³⁴⁹⁵
- Pixels : SignificantBits³⁴⁹⁶

³⁴⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁴⁸⁰<http://www.openmicroscopy.org/site/support/ome-model/>

³⁴⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁴⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

³⁴⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁴⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID

³⁴⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_LastName

³⁴⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁴⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ExperimenterRef_ID

³⁴⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁴⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁴⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁴⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁴⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁴⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁴⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁴⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁴⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

- Pixels : SizeC³⁴⁹⁷
- Pixels : SizeT³⁴⁹⁸
- Pixels : SizeX³⁴⁹⁹
- Pixels : SizeY³⁵⁰⁰
- Pixels : SizeZ³⁵⁰¹
- Pixels : Type³⁵⁰²
- Plane : PositionX³⁵⁰³
- Plane : PositionY³⁵⁰⁴
- Plane : PositionZ³⁵⁰⁵
- Plane : TheC³⁵⁰⁶
- Plane : TheT³⁵⁰⁷
- Plane : TheZ³⁵⁰⁸
- Plate : Columns³⁵⁰⁹
- Plate : Description³⁵¹⁰
- Plate : ExternalIdentifier³⁵¹¹
- Plate : ID³⁵¹²
- Plate : Name³⁵¹³
- Plate : Rows³⁵¹⁴
- PlateAcquisition : ID³⁵¹⁵
- PlateAcquisition : MaximumFieldCount³⁵¹⁶
- PlateAcquisition : WellSampleRef³⁵¹⁷
- Well : Column³⁵¹⁸
- Well : ID³⁵¹⁹
- Well : Row³⁵²⁰
- WellSample : ID³⁵²¹
- WellSample : ImageRef³⁵²²

³⁴⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁴⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁴⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁵⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁵⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁵⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁵⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

³⁵⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

³⁵⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

³⁵⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁵⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁵⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁵⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Columns

³⁵¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Description

³⁵¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ExternalIdentifier

³⁵¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_ID

³⁵¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Name

³⁵¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Plate_Rows

³⁵¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_ID

³⁵¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

³⁵¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSampleRef_ID

³⁵¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Column

³⁵¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_ID

³⁵²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#Well_Row

³⁵²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_ID

³⁵²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImageRef_ID

- WellSample : Index³⁵²³

Total supported: 43

Total unknown or missing: 432

19.2.98 PerkinElmerReader

This page lists supported metadata fields for the Bio-Formats PerkinElmer format reader.

These fields are from the [OME data model](#)³⁵²⁴. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 30 of them (6%).
- Of those, Bio-Formats fully or partially converts 30 (100%).

Supported fields

These fields are fully supported by the Bio-Formats PerkinElmer format reader:

- Channel : EmissionWavelength³⁵²⁵
- Channel : ExcitationWavelength³⁵²⁶
- Channel : ID³⁵²⁷
- Channel : SamplesPerPixel³⁵²⁸
- Image : AcquisitionDate³⁵²⁹
- Image : ID³⁵³⁰
- Image : InstrumentRef³⁵³¹
- Image : Name³⁵³²
- Instrument : ID³⁵³³
- Pixels : BigEndian³⁵³⁴
- Pixels : DimensionOrder³⁵³⁵
- Pixels : ID³⁵³⁶
- Pixels : Interleaved³⁵³⁷
- Pixels : PhysicalSizeX³⁵³⁸
- Pixels : PhysicalSizeY³⁵³⁹
- Pixels : SignificantBits³⁵⁴⁰

³⁵²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/SPW_xsd.html#WellSample_Index

³⁵²⁴<http://www.openmicroscopy.org/site/support/ome-model/>

³⁵²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

³⁵²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

³⁵²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁵²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁵³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁵³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

³⁵³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁵³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

³⁵³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁵³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁵³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁵³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁵³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁵³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁵⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

- Pixels : SizeC³⁵⁴¹
- Pixels : SizeT³⁵⁴²
- Pixels : SizeX³⁵⁴³
- Pixels : SizeY³⁵⁴⁴
- Pixels : SizeZ³⁵⁴⁵
- Pixels : Type³⁵⁴⁶
- Plane : DeltaT³⁵⁴⁷
- Plane : ExposureTime³⁵⁴⁸
- Plane : PositionX³⁵⁴⁹
- Plane : PositionY³⁵⁵⁰
- Plane : PositionZ³⁵⁵¹
- Plane : TheC³⁵⁵²
- Plane : TheT³⁵⁵³
- Plane : TheZ³⁵⁵⁴

Total supported: 30

Total unknown or missing: 445

19.2.99 PGMReader

This page lists supported metadata fields for the Bio-Formats Portable Gray Map format reader.

These fields are from the OME data model³⁵⁵⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Portable Gray Map format reader:

- Channel : ID³⁵⁵⁶
- Channel : SamplesPerPixel³⁵⁵⁷
- Image : AcquisitionDate³⁵⁵⁸

³⁵⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁵⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁵⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁵⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁵⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁵⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁵⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

³⁵⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

³⁵⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

³⁵⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

³⁵⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

³⁵⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁵⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁵⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁵⁵⁵<http://www.openmicroscopy.org/site/support/ome-model/>

³⁵⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁵⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

- Image : ID³⁵⁵⁹
- Image : Name³⁵⁶⁰
- Pixels : BigEndian³⁵⁶¹
- Pixels : DimensionOrder³⁵⁶²
- Pixels : ID³⁵⁶³
- Pixels : Interleaved³⁵⁶⁴
- Pixels : SignificantBits³⁵⁶⁵
- Pixels : SizeC³⁵⁶⁶
- Pixels : SizeT³⁵⁶⁷
- Pixels : SizeX³⁵⁶⁸
- Pixels : SizeY³⁵⁶⁹
- Pixels : SizeZ³⁵⁷⁰
- Pixels : Type³⁵⁷¹
- Plane : TheC³⁵⁷²
- Plane : TheT³⁵⁷³
- Plane : TheZ³⁵⁷⁴

Total supported: 19

Total unknown or missing: 456

19.2.100 PSDReader

This page lists supported metadata fields for the Bio-Formats Adobe Photoshop format reader.

These fields are from the [OME data model](#)³⁵⁷⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Adobe Photoshop format reader:

- Channel : ID³⁵⁷⁶

³⁵⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁵⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁵⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁵⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁵⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁵⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁵⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁵⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁵⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁵⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁵⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁵⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁵⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁵⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁵⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁵⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁵⁷⁵<http://www.openmicroscopy.org/site/support/ome-model/>

³⁵⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

- Channel : SamplesPerPixel³⁵⁷⁷
- Image : AcquisitionDate³⁵⁷⁸
- Image : ID³⁵⁷⁹
- Image : Name³⁵⁸⁰
- Pixels : BigEndian³⁵⁸¹
- Pixels : DimensionOrder³⁵⁸²
- Pixels : ID³⁵⁸³
- Pixels : Interleaved³⁵⁸⁴
- Pixels : SignificantBits³⁵⁸⁵
- Pixels : SizeC³⁵⁸⁶
- Pixels : SizeT³⁵⁸⁷
- Pixels : SizeX³⁵⁸⁸
- Pixels : SizeY³⁵⁸⁹
- Pixels : SizeZ³⁵⁹⁰
- Pixels : Type³⁵⁹¹
- Plane : TheC³⁵⁹²
- Plane : TheT³⁵⁹³
- Plane : TheZ³⁵⁹⁴

Total supported: 19

Total unknown or missing: 456

19.2.101 PhotoshopTiffReader

This page lists supported metadata fields for the Bio-Formats Adobe Photoshop TIFF format reader.

These fields are from the [OME data model](#)³⁵⁹⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

³⁵⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁵⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁵⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁵⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁵⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁵⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁵⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁵⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁵⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁵⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁵⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁵⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁵⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁵⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁵⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁵⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁵⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁵⁹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Adobe Photoshop TIFF format reader:

- Channel : ID³⁵⁹⁶
- Channel : SamplesPerPixel³⁵⁹⁷
- Image : AcquisitionDate³⁵⁹⁸
- Image : ID³⁵⁹⁹
- Image : Name³⁶⁰⁰
- Pixels : BigEndian³⁶⁰¹
- Pixels : DimensionOrder³⁶⁰²
- Pixels : ID³⁶⁰³
- Pixels : Interleaved³⁶⁰⁴
- Pixels : SignificantBits³⁶⁰⁵
- Pixels : SizeC³⁶⁰⁶
- Pixels : SizeT³⁶⁰⁷
- Pixels : SizeX³⁶⁰⁸
- Pixels : SizeY³⁶⁰⁹
- Pixels : SizeZ³⁶¹⁰
- Pixels : Type³⁶¹¹
- Plane : TheC³⁶¹²
- Plane : TheT³⁶¹³
- Plane : TheZ³⁶¹⁴

Total supported: 19

Total unknown or missing: 456

19.2.102 PictReader

This page lists supported metadata fields for the Bio-Formats PICT format reader.

These fields are from the OME data model³⁶¹⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

³⁵⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁵⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁵⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁶⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁶⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁶⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁶⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁶⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁶⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁶⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁶⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁶⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁶⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁶¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁶¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁶¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁶¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁶¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁶¹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats PICT format reader:

- Channel : ID³⁶¹⁶
- Channel : SamplesPerPixel³⁶¹⁷
- Image : AcquisitionDate³⁶¹⁸
- Image : ID³⁶¹⁹
- Image : Name³⁶²⁰
- Pixels : BigEndian³⁶²¹
- Pixels : DimensionOrder³⁶²²
- Pixels : ID³⁶²³
- Pixels : Interleaved³⁶²⁴
- Pixels : SignificantBits³⁶²⁵
- Pixels : SizeC³⁶²⁶
- Pixels : SizeT³⁶²⁷
- Pixels : SizeX³⁶²⁸
- Pixels : SizeY³⁶²⁹
- Pixels : SizeZ³⁶³⁰
- Pixels : Type³⁶³¹
- Plane : TheC³⁶³²
- Plane : TheT³⁶³³
- Plane : TheZ³⁶³⁴

Total supported: 19

Total unknown or missing: 456

³⁶¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁶¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁶¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁶¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁶²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁶²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁶²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁶²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁶²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁶²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁶²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁶²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁶²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁶²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁶³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁶³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁶³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁶³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁶³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.103 APNGReader

This page lists supported metadata fields for the Bio-Formats Animated PNG format reader.

These fields are from the [OME data model](#)³⁶³⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Animated PNG format reader:

- Channel : ID³⁶³⁶
- Channel : SamplesPerPixel³⁶³⁷
- Image : AcquisitionDate³⁶³⁸
- Image : ID³⁶³⁹
- Image : Name³⁶⁴⁰
- Pixels : BigEndian³⁶⁴¹
- Pixels : DimensionOrder³⁶⁴²
- Pixels : ID³⁶⁴³
- Pixels : Interleaved³⁶⁴⁴
- Pixels : SignificantBits³⁶⁴⁵
- Pixels : SizeC³⁶⁴⁶
- Pixels : SizeT³⁶⁴⁷
- Pixels : SizeX³⁶⁴⁸
- Pixels : SizeY³⁶⁴⁹
- Pixels : SizeZ³⁶⁵⁰
- Pixels : Type³⁶⁵¹
- Plane : TheC³⁶⁵²
- Plane : TheT³⁶⁵³

³⁶³⁵<http://www.openmicroscopy.org/site/support/ome-model/>

³⁶³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁶³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁶³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁶³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁶⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁶⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁶⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁶⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁶⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁶⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁶⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁶⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁶⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁶⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁶⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁶⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁶⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁶⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

- Plane : TheZ³⁶⁵⁴

Total supported: 19

Total unknown or missing: 456

19.2.104 PrairieReader

This page lists supported metadata fields for the Bio-Formats Prairie TIFF format reader.

These fields are from the [OME data model](#)³⁶⁵⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 45 of them (9%).
- Of those, Bio-Formats fully or partially converts 45 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Prairie TIFF format reader:

- Channel : ID³⁶⁵⁶
- Channel : Name³⁶⁵⁷
- Channel : SamplesPerPixel³⁶⁵⁸
- Detector : ID³⁶⁵⁹
- Detector : Type³⁶⁶⁰
- Detector : Zoom³⁶⁶¹
- DetectorSettings : Gain³⁶⁶²
- DetectorSettings : ID³⁶⁶³
- DetectorSettings : Offset³⁶⁶⁴
- Image : AcquisitionDate³⁶⁶⁵
- Image : ID³⁶⁶⁶
- Image : InstrumentRef³⁶⁶⁷
- Image : Name³⁶⁶⁸
- Instrument : ID³⁶⁶⁹
- Laser : ID³⁶⁷⁰
- Laser : Power³⁶⁷¹

³⁶⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁶⁵⁵<http://www.openmicroscopy.org/site/support/ome-model/>

³⁶⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁶⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

³⁶⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁶⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

³⁶⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

³⁶⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Zoom

³⁶⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

³⁶⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

³⁶⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Offset

³⁶⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁶⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁶⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

³⁶⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁶⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

³⁶⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

³⁶⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power

- Microscope : Model³⁶⁷²
- Objective : Correction³⁶⁷³
- Objective : ID³⁶⁷⁴
- Objective : Immersion³⁶⁷⁵
- Objective : LensNA³⁶⁷⁶
- Objective : Manufacturer³⁶⁷⁷
- Objective : NominalMagnification³⁶⁷⁸
- ObjectiveSettings : ID³⁶⁷⁹
- Pixels : BigEndian³⁶⁸⁰
- Pixels : DimensionOrder³⁶⁸¹
- Pixels : ID³⁶⁸²
- Pixels : Interleaved³⁶⁸³
- Pixels : PhysicalSizeX³⁶⁸⁴
- Pixels : PhysicalSizeY³⁶⁸⁵
- Pixels : SignificantBits³⁶⁸⁶
- Pixels : SizeC³⁶⁸⁷
- Pixels : SizeT³⁶⁸⁸
- Pixels : SizeX³⁶⁸⁹
- Pixels : SizeY³⁶⁹⁰
- Pixels : SizeZ³⁶⁹¹
- Pixels : TimeIncrement³⁶⁹²
- Pixels : Type³⁶⁹³
- Plane : DeltaT³⁶⁹⁴
- Plane : PositionX³⁶⁹⁵
- Plane : PositionY³⁶⁹⁶
- Plane : PositionZ³⁶⁹⁷

³⁶⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

³⁶⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

³⁶⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

³⁶⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

³⁶⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

³⁶⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁶⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

³⁶⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

³⁶⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁶⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁶⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁶⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁶⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁶⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁶⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁶⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁶⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁶⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁶⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁶⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁶⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

³⁶⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁶⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

³⁶⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

³⁶⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

³⁶⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

- Plane : TheC³⁶⁹⁸
- Plane : TheT³⁶⁹⁹
- Plane : TheZ³⁷⁰⁰

Total supported: 45

Total unknown or missing: 430

19.2.105 QuesantReader

This page lists supported metadata fields for the Bio-Formats Quesant AFM format reader.

These fields are from the [OME data model](#)³⁷⁰¹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Quesant AFM format reader:

- Channel : ID³⁷⁰²
- Channel : SamplesPerPixel³⁷⁰³
- Image : AcquisitionDate³⁷⁰⁴
- Image : Description³⁷⁰⁵
- Image : ID³⁷⁰⁶
- Image : Name³⁷⁰⁷
- Pixels : BigEndian³⁷⁰⁸
- Pixels : DimensionOrder³⁷⁰⁹
- Pixels : ID³⁷¹⁰
- Pixels : Interleaved³⁷¹¹
- Pixels : PhysicalSizeX³⁷¹²
- Pixels : PhysicalSizeY³⁷¹³
- Pixels : SignificantBits³⁷¹⁴
- Pixels : SizeC³⁷¹⁵

³⁶⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁶⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁷⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁷⁰¹<http://www.openmicroscopy.org/site/support/ome-model/>

³⁷⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁷⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁷⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁷⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

³⁷⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁷⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁷⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁷⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁷¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁷¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁷¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁷¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁷¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁷¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

- Pixels : SizeT³⁷¹⁶
- Pixels : SizeX³⁷¹⁷
- Pixels : SizeY³⁷¹⁸
- Pixels : SizeZ³⁷¹⁹
- Pixels : Type³⁷²⁰
- Plane : TheC³⁷²¹
- Plane : TheT³⁷²²
- Plane : TheZ³⁷²³

Total supported: 22

Total unknown or missing: 453

19.2.106 NativeQTRReader

This page lists supported metadata fields for the Bio-Formats QuickTime format reader.

These fields are from the [OME data model](#)³⁷²⁴. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats QuickTime format reader:

- Channel : ID³⁷²⁵
- Channel : SamplesPerPixel³⁷²⁶
- Image : AcquisitionDate³⁷²⁷
- Image : ID³⁷²⁸
- Image : Name³⁷²⁹
- Pixels : BigEndian³⁷³⁰
- Pixels : DimensionOrder³⁷³¹
- Pixels : ID³⁷³²
- Pixels : Interleaved³⁷³³

³⁷¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁷¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁷¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁷¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁷²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁷²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁷²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁷²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁷²⁴<http://www.openmicroscopy.org/site/support/ome-model/>

³⁷²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁷²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁷²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁷²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁷²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁷³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁷³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁷³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁷³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

- Pixels : SignificantBits³⁷³⁴
- Pixels : SizeC³⁷³⁵
- Pixels : SizeT³⁷³⁶
- Pixels : SizeX³⁷³⁷
- Pixels : SizeY³⁷³⁸
- Pixels : SizeZ³⁷³⁹
- Pixels : Type³⁷⁴⁰
- Plane : TheC³⁷⁴¹
- Plane : TheT³⁷⁴²
- Plane : TheZ³⁷⁴³

Total supported: 19

Total unknown or missing: 456

19.2.107 RHKReader

This page lists supported metadata fields for the Bio-Formats RHK Technologies format reader.

These fields are from the [OME data model](#)³⁷⁴⁴. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats RHK Technologies format reader:

- Channel : ID³⁷⁴⁵
- Channel : SamplesPerPixel³⁷⁴⁶
- Image : AcquisitionDate³⁷⁴⁷
- Image : Description³⁷⁴⁸
- Image : ID³⁷⁴⁹
- Image : Name³⁷⁵⁰
- Pixels : BigEndian³⁷⁵¹

³⁷³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁷³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁷³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁷³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁷³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁷³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁷⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁷⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁷⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁷⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁷⁴⁴<http://www.openmicroscopy.org/site/support/ome-model/>

³⁷⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁷⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁷⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁷⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

³⁷⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁷⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁷⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

- Pixels : DimensionOrder³⁷⁵²
- Pixels : ID³⁷⁵³
- Pixels : Interleaved³⁷⁵⁴
- Pixels : PhysicalSizeX³⁷⁵⁵
- Pixels : PhysicalSizeY³⁷⁵⁶
- Pixels : SignificantBits³⁷⁵⁷
- Pixels : SizeC³⁷⁵⁸
- Pixels : SizeT³⁷⁵⁹
- Pixels : SizeX³⁷⁶⁰
- Pixels : SizeY³⁷⁶¹
- Pixels : SizeZ³⁷⁶²
- Pixels : Type³⁷⁶³
- Plane : TheC³⁷⁶⁴
- Plane : TheT³⁷⁶⁵
- Plane : TheZ³⁷⁶⁶

Total supported: 22

Total unknown or missing: 453

19.2.108 SBIGReader

This page lists supported metadata fields for the Bio-Formats SBIG format reader.

These fields are from the [OME data model](#)³⁷⁶⁷. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats SBIG format reader:

- Channel : ID³⁷⁶⁸
- Channel : SamplesPerPixel³⁷⁶⁹

³⁷⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁷⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁷⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁷⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁷⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁷⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁷⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁷⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁷⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁷⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁷⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁷⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁷⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁷⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁷⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁷⁶⁷<http://www.openmicroscopy.org/site/support/ome-model/>

³⁷⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁷⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate³⁷⁷⁰
- Image : Description³⁷⁷¹
- Image : ID³⁷⁷²
- Image : Name³⁷⁷³
- Pixels : BigEndian³⁷⁷⁴
- Pixels : DimensionOrder³⁷⁷⁵
- Pixels : ID³⁷⁷⁶
- Pixels : Interleaved³⁷⁷⁷
- Pixels : PhysicalSizeX³⁷⁷⁸
- Pixels : PhysicalSizeY³⁷⁷⁹
- Pixels : SignificantBits³⁷⁸⁰
- Pixels : SizeC³⁷⁸¹
- Pixels : SizeT³⁷⁸²
- Pixels : SizeX³⁷⁸³
- Pixels : SizeY³⁷⁸⁴
- Pixels : SizeZ³⁷⁸⁵
- Pixels : Type³⁷⁸⁶
- Plane : TheC³⁷⁸⁷
- Plane : TheT³⁷⁸⁸
- Plane : TheZ³⁷⁸⁹

Total supported: 22

Total unknown or missing: 453

19.2.109 SeikoReader

This page lists supported metadata fields for the Bio-Formats Seiko format reader.

These fields are from the OME data model³⁷⁹⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- ³⁷⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
- ³⁷⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description
- ³⁷⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
- ³⁷⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
- ³⁷⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
- ³⁷⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
- ³⁷⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
- ³⁷⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
- ³⁷⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX
- ³⁷⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY
- ³⁷⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
- ³⁷⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
- ³⁷⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
- ³⁷⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
- ³⁷⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
- ³⁷⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
- ³⁷⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
- ³⁷⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
- ³⁷⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
- ³⁷⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ
- ³⁷⁹⁰<http://www.openmicroscopy.org/site/support/ome-model/>

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Seiko format reader:

- Channel : ID³⁷⁹¹
- Channel : SamplesPerPixel³⁷⁹²
- Image : AcquisitionDate³⁷⁹³
- Image : Description³⁷⁹⁴
- Image : ID³⁷⁹⁵
- Image : Name³⁷⁹⁶
- Pixels : BigEndian³⁷⁹⁷
- Pixels : DimensionOrder³⁷⁹⁸
- Pixels : ID³⁷⁹⁹
- Pixels : Interleaved³⁸⁰⁰
- Pixels : PhysicalSizeX³⁸⁰¹
- Pixels : PhysicalSizeY³⁸⁰²
- Pixels : SignificantBits³⁸⁰³
- Pixels : SizeC³⁸⁰⁴
- Pixels : SizeT³⁸⁰⁵
- Pixels : SizeX³⁸⁰⁶
- Pixels : SizeY³⁸⁰⁷
- Pixels : SizeZ³⁸⁰⁸
- Pixels : Type³⁸⁰⁹
- Plane : TheC³⁸¹⁰
- Plane : TheT³⁸¹¹
- Plane : TheZ³⁸¹²

³⁷⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁷⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁷⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁷⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

³⁷⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁷⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁷⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁷⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁷⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁸⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁸⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁸⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁸⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁸⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁸⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁸⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁸⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁸⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁸⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁸¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁸¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁸¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

Total supported: 22

Total unknown or missing: 453

19.2.110 PCIRReader

This page lists supported metadata fields for the Bio-Formats Compix Simple-PCI format reader.

These fields are from the [OME data model](#)³⁸¹³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 29 of them (6%).
- Of those, Bio-Formats fully or partially converts 29 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Compix Simple-PCI format reader:

- Channel : ID³⁸¹⁴
- Channel : SamplesPerPixel³⁸¹⁵
- Detector : ID³⁸¹⁶
- Detector : Type³⁸¹⁷
- DetectorSettings : Binning³⁸¹⁸
- DetectorSettings : ID³⁸¹⁹
- Image : AcquisitionDate³⁸²⁰
- Image : ID³⁸²¹
- Image : InstrumentRef³⁸²²
- Image : Name³⁸²³
- Instrument : ID³⁸²⁴
- Pixels : BigEndian³⁸²⁵
- Pixels : DimensionOrder³⁸²⁶
- Pixels : ID³⁸²⁷
- Pixels : Interleaved³⁸²⁸
- Pixels : PhysicalSizeX³⁸²⁹
- Pixels : PhysicalSizeY³⁸³⁰

³⁸¹³<http://www.openmicroscopy.org/site/support/ome-model/>

³⁸¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁸¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁸¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

³⁸¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

³⁸¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

³⁸¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

³⁸²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁸²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁸²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

³⁸²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁸²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

³⁸²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁸²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁸²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁸²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁸²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁸³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

- Pixels : SignificantBits³⁸³¹
- Pixels : SizeC³⁸³²
- Pixels : SizeT³⁸³³
- Pixels : SizeX³⁸³⁴
- Pixels : SizeY³⁸³⁵
- Pixels : SizeZ³⁸³⁶
- Pixels : TimeIncrement³⁸³⁷
- Pixels : Type³⁸³⁸
- Plane : DeltaT³⁸³⁹
- Plane : TheC³⁸⁴⁰
- Plane : TheT³⁸⁴¹
- Plane : TheZ³⁸⁴²

Total supported: 29

Total unknown or missing: 446

19.2.111 SimplePCITiffReader

This page lists supported metadata fields for the Bio-Formats SimplePCI TIFF format reader.

These fields are from the [OME data model](#)³⁸⁴³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 33 of them (6%).
- Of those, Bio-Formats fully or partially converts 33 (100%).

Supported fields

These fields are fully supported by the Bio-Formats SimplePCI TIFF format reader:

- Channel : ID³⁸⁴⁴
- Channel : SamplesPerPixel³⁸⁴⁵
- Detector : ID³⁸⁴⁶
- Detector : Model³⁸⁴⁷
- Detector : Type³⁸⁴⁸

³⁸³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁸³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁸³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁸³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁸³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁸³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁸³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

³⁸³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁸³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

³⁸⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁸⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁸⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁸⁴³<http://www.openmicroscopy.org/site/support/ome-model/>

³⁸⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁸⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁸⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

³⁸⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

³⁸⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

- DetectorSettings : Binning³⁸⁴⁹
- DetectorSettings : ID³⁸⁵⁰
- Image : AcquisitionDate³⁸⁵¹
- Image : Description³⁸⁵²
- Image : ID³⁸⁵³
- Image : InstrumentRef³⁸⁵⁴
- Image : Name³⁸⁵⁵
- Instrument : ID³⁸⁵⁶
- Objective : ID³⁸⁵⁷
- Objective : Immersion³⁸⁵⁸
- Objective : NominalMagnification³⁸⁵⁹
- Pixels : BigEndian³⁸⁶⁰
- Pixels : DimensionOrder³⁸⁶¹
- Pixels : ID³⁸⁶²
- Pixels : Interleaved³⁸⁶³
- Pixels : PhysicalSizeX³⁸⁶⁴
- Pixels : PhysicalSizeY³⁸⁶⁵
- Pixels : SignificantBits³⁸⁶⁶
- Pixels : SizeC³⁸⁶⁷
- Pixels : SizeT³⁸⁶⁸
- Pixels : SizeX³⁸⁶⁹
- Pixels : SizeY³⁸⁷⁰
- Pixels : SizeZ³⁸⁷¹
- Pixels : Type³⁸⁷²
- Plane : ExposureTime³⁸⁷³
- Plane : TheC³⁸⁷⁴

³⁸⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

³⁸⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

³⁸⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁸⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

³⁸⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁸⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

³⁸⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁸⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

³⁸⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

³⁸⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

³⁸⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

³⁸⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁸⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁸⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁸⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁸⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁸⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁸⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁸⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁸⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁸⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁸⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁸⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁸⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁸⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

³⁸⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

- Plane : TheT³⁸⁷⁵
- Plane : TheZ³⁸⁷⁶

Total supported: 33

Total unknown or missing: 442

19.2.112 SMCameraReader

This page lists supported metadata fields for the Bio-Formats SM Camera format reader.

These fields are from the [OME data model](#)³⁸⁷⁷. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats SM Camera format reader:

- Channel : ID³⁸⁷⁸
- Channel : SamplesPerPixel³⁸⁷⁹
- Image : AcquisitionDate³⁸⁸⁰
- Image : ID³⁸⁸¹
- Image : Name³⁸⁸²
- Pixels : BigEndian³⁸⁸³
- Pixels : DimensionOrder³⁸⁸⁴
- Pixels : ID³⁸⁸⁵
- Pixels : Interleaved³⁸⁸⁶
- Pixels : SignificantBits³⁸⁸⁷
- Pixels : SizeC³⁸⁸⁸
- Pixels : SizeT³⁸⁸⁹
- Pixels : SizeX³⁸⁹⁰
- Pixels : SizeY³⁸⁹¹
- Pixels : SizeZ³⁸⁹²

³⁸⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁸⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁸⁷⁷<http://www.openmicroscopy.org/site/support/ome-model/>

³⁸⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁸⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁸⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁸⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁸⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁸⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁸⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁸⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁸⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁸⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁸⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁸⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁸⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁸⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁸⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

- Pixels : Type³⁸⁹³
- Plane : TheC³⁸⁹⁴
- Plane : TheT³⁸⁹⁵
- Plane : TheZ³⁸⁹⁶

Total supported: 19

Total unknown or missing: 456

19.2.113 SpiderReader

This page lists supported metadata fields for the Bio-Formats SPIDER format reader.

These fields are from the [OME data model](#)³⁸⁹⁷. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 21 of them (4%).
- Of those, Bio-Formats fully or partially converts 21 (100%).

Supported fields

These fields are fully supported by the Bio-Formats SPIDER format reader:

- Channel : ID³⁸⁹⁸
- Channel : SamplesPerPixel³⁸⁹⁹
- Image : AcquisitionDate³⁹⁰⁰
- Image : ID³⁹⁰¹
- Image : Name³⁹⁰²
- Pixels : BigEndian³⁹⁰³
- Pixels : DimensionOrder³⁹⁰⁴
- Pixels : ID³⁹⁰⁵
- Pixels : Interleaved³⁹⁰⁶
- Pixels : PhysicalSizeX³⁹⁰⁷
- Pixels : PhysicalSizeY³⁹⁰⁸
- Pixels : SignificantBits³⁹⁰⁹
- Pixels : SizeC³⁹¹⁰

³⁸⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁸⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁸⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁸⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁸⁹⁷<http://www.openmicroscopy.org/site/support/ome-model/>

³⁸⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁸⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

- Pixels : SizeT³⁹¹¹
- Pixels : SizeX³⁹¹²
- Pixels : SizeY³⁹¹³
- Pixels : SizeZ³⁹¹⁴
- Pixels : Type³⁹¹⁵
- Plane : TheC³⁹¹⁶
- Plane : TheT³⁹¹⁷
- Plane : TheZ³⁹¹⁸

Total supported: 21

Total unknown or missing: 454

19.2.114 TargaReader

This page lists supported metadata fields for the Bio-Formats Truevision Targa format reader.

These fields are from the [OME data model](#)³⁹¹⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 20 of them (4%).
- Of those, Bio-Formats fully or partially converts 20 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Truevision Targa format reader:

- Channel : ID³⁹²⁰
- Channel : SamplesPerPixel³⁹²¹
- Image : AcquisitionDate³⁹²²
- Image : Description³⁹²³
- Image : ID³⁹²⁴
- Image : Name³⁹²⁵
- Pixels : BigEndian³⁹²⁶
- Pixels : DimensionOrder³⁹²⁷
- Pixels : ID³⁹²⁸

³⁹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁹¹⁹<http://www.openmicroscopy.org/site/support/ome-model/>

³⁹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

³⁹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

- Pixels : Interleaved³⁹²⁹
- Pixels : SignificantBits³⁹³⁰
- Pixels : SizeC³⁹³¹
- Pixels : SizeT³⁹³²
- Pixels : SizeX³⁹³³
- Pixels : SizeY³⁹³⁴
- Pixels : SizeZ³⁹³⁵
- Pixels : Type³⁹³⁶
- Plane : TheC³⁹³⁷
- Plane : TheT³⁹³⁸
- Plane : TheZ³⁹³⁹

Total supported: 20

Total unknown or missing: 455

19.2.115 TextReader

This page lists supported metadata fields for the Bio-Formats Text format reader.

These fields are from the [OME data model](#)³⁹⁴⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Text format reader:

- Channel : ID³⁹⁴¹
- Channel : SamplesPerPixel³⁹⁴²
- Image : AcquisitionDate³⁹⁴³
- Image : ID³⁹⁴⁴
- Image : Name³⁹⁴⁵
- Pixels : BigEndian³⁹⁴⁶

³⁹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁹⁴⁰<http://www.openmicroscopy.org/site/support/ome-model/>

³⁹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

- Pixels : DimensionOrder³⁹⁴⁷
- Pixels : ID³⁹⁴⁸
- Pixels : Interleaved³⁹⁴⁹
- Pixels : SignificantBits³⁹⁵⁰
- Pixels : SizeC³⁹⁵¹
- Pixels : SizeT³⁹⁵²
- Pixels : SizeX³⁹⁵³
- Pixels : SizeY³⁹⁵⁴
- Pixels : SizeZ³⁹⁵⁵
- Pixels : Type³⁹⁵⁶
- Plane : TheC³⁹⁵⁷
- Plane : TheT³⁹⁵⁸
- Plane : TheZ³⁹⁵⁹

Total supported: 19

Total unknown or missing: 456

19.2.116 TiffReader

This page lists supported metadata fields for the Bio-Formats Tagged Image File Format format reader.

These fields are from the [OME data model](#)³⁹⁶⁰. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Tagged Image File Format format reader:

- Channel : ID³⁹⁶¹
- Channel : SamplesPerPixel³⁹⁶²
- Image : AcquisitionDate³⁹⁶³
- Image : Description³⁹⁶⁴

³⁹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁹⁶⁰<http://www.openmicroscopy.org/site/support/ome-model/>

³⁹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

³⁹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

³⁹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

³⁹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

- Image : ID³⁹⁶⁵
- Image : Name³⁹⁶⁶
- Pixels : BigEndian³⁹⁶⁷
- Pixels : DimensionOrder³⁹⁶⁸
- Pixels : ID³⁹⁶⁹
- Pixels : Interleaved³⁹⁷⁰
- Pixels : PhysicalSizeZ³⁹⁷¹
- Pixels : SignificantBits³⁹⁷²
- Pixels : SizeC³⁹⁷³
- Pixels : SizeT³⁹⁷⁴
- Pixels : SizeX³⁹⁷⁵
- Pixels : SizeY³⁹⁷⁶
- Pixels : SizeZ³⁹⁷⁷
- Pixels : TimeIncrement³⁹⁷⁸
- Pixels : Type³⁹⁷⁹
- Plane : TheC³⁹⁸⁰
- Plane : TheT³⁹⁸¹
- Plane : TheZ³⁹⁸²

Total supported: 22

Total unknown or missing: 453

19.2.117 TillVisionReader

This page lists supported metadata fields for the Bio-Formats TillVision format reader.

These fields are from the [OME data model](#)³⁹⁸³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

³⁹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

³⁹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

³⁹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

³⁹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

³⁹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

³⁹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

³⁹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

³⁹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

³⁹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

³⁹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

³⁹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

³⁹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

³⁹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

³⁹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

³⁹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

³⁹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

³⁹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

³⁹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

³⁹⁸³<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats TillVision format reader:

- Channel : ID³⁹⁸⁴
- Channel : SamplesPerPixel³⁹⁸⁵
- Experiment : ID³⁹⁸⁶
- Experiment : Type³⁹⁸⁷
- Image : AcquisitionDate³⁹⁸⁸
- Image : ID³⁹⁸⁹
- Image : Name³⁹⁹⁰
- Pixels : BigEndian³⁹⁹¹
- Pixels : DimensionOrder³⁹⁹²
- Pixels : ID³⁹⁹³
- Pixels : Interleaved³⁹⁹⁴
- Pixels : SignificantBits³⁹⁹⁵
- Pixels : SizeC³⁹⁹⁶
- Pixels : SizeT³⁹⁹⁷
- Pixels : SizeX³⁹⁹⁸
- Pixels : SizeY³⁹⁹⁹
- Pixels : SizeZ⁴⁰⁰⁰
- Pixels : Type⁴⁰⁰¹
- Plane : ExposureTime⁴⁰⁰²
- Plane : TheC⁴⁰⁰³
- Plane : TheT⁴⁰⁰⁴
- Plane : TheZ⁴⁰⁰⁵

Total supported: 22

Total unknown or missing: 453

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- ³⁹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
 - ³⁹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
 - ³⁹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_ID
 - ³⁹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experiment_Type
 - ³⁹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
 - ³⁹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
 - ³⁹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
 - ³⁹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
 - ³⁹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
 - ³⁹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
 - ³⁹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
 - ³⁹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
 - ³⁹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
 - ³⁹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
 - ³⁹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
 - ³⁹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
 - ⁴⁰⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
 - ⁴⁰⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
 - ⁴⁰⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime
 - ⁴⁰⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
 - ⁴⁰⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
 - ⁴⁰⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.118 TopometrixReader

This page lists supported metadata fields for the Bio-Formats TopoMetrix format reader.

These fields are from the [OME data model](#)⁴⁰⁰⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats TopoMetrix format reader:

- Channel : ID⁴⁰⁰⁷
- Channel : SamplesPerPixel⁴⁰⁰⁸
- Image : AcquisitionDate⁴⁰⁰⁹
- Image : Description⁴⁰¹⁰
- Image : ID⁴⁰¹¹
- Image : Name⁴⁰¹²
- Pixels : BigEndian⁴⁰¹³
- Pixels : DimensionOrder⁴⁰¹⁴
- Pixels : ID⁴⁰¹⁵
- Pixels : Interleaved⁴⁰¹⁶
- Pixels : PhysicalSizeX⁴⁰¹⁷
- Pixels : PhysicalSizeY⁴⁰¹⁸
- Pixels : SignificantBits⁴⁰¹⁹
- Pixels : SizeC⁴⁰²⁰
- Pixels : SizeT⁴⁰²¹
- Pixels : SizeX⁴⁰²²
- Pixels : SizeY⁴⁰²³
- Pixels : SizeZ⁴⁰²⁴
- Pixels : Type⁴⁰²⁵

⁴⁰⁰⁶<http://www.openmicroscopy.org/site/support/ome-model/>

⁴⁰⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴⁰⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴⁰⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴⁰¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

⁴⁰¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴⁰¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴⁰¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴⁰¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴⁰¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴⁰¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴⁰¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴⁰¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴⁰¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴⁰²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴⁰²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴⁰²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴⁰²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴⁰²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴⁰²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

- Plane : TheC⁴⁰²⁶
- Plane : TheT⁴⁰²⁷
- Plane : TheZ⁴⁰²⁸

Total supported: 22

Total unknown or missing: 453

19.2.119 TrestleReader

This page lists supported metadata fields for the Bio-Formats Trestle format reader.

These fields are from the [OME data model](#)⁴⁰²⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 26 of them (5%).
- Of those, Bio-Formats fully or partially converts 26 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Trestle format reader:

- Channel : ID⁴⁰³⁰
- Channel : SamplesPerPixel⁴⁰³¹
- Image : AcquisitionDate⁴⁰³²
- Image : ID⁴⁰³³
- Image : Name⁴⁰³⁴
- Image : ROIRef⁴⁰³⁵
- Mask : Height⁴⁰³⁶
- Mask : ID⁴⁰³⁷
- Mask : Width⁴⁰³⁸
- Mask : X⁴⁰³⁹
- Mask : Y⁴⁰⁴⁰
- Pixels : BigEndian⁴⁰⁴¹
- Pixels : DimensionOrder⁴⁰⁴²
- Pixels : ID⁴⁰⁴³

⁴⁰²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴⁰²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴⁰²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴⁰²⁹<http://www.openmicroscopy.org/site/support/ome-model/>

⁴⁰³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴⁰³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴⁰³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴⁰³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴⁰³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴⁰³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

⁴⁰³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_Height

⁴⁰³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁰³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_Width

⁴⁰³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_X

⁴⁰⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Mask_Y

⁴⁰⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴⁰⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴⁰⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

- Pixels : Interleaved⁴⁰⁴⁴
- Pixels : SignificantBits⁴⁰⁴⁵
- Pixels : SizeC⁴⁰⁴⁶
- Pixels : SizeT⁴⁰⁴⁷
- Pixels : SizeX⁴⁰⁴⁸
- Pixels : SizeY⁴⁰⁴⁹
- Pixels : SizeZ⁴⁰⁵⁰
- Pixels : Type⁴⁰⁵¹
- Plane : TheC⁴⁰⁵²
- Plane : TheT⁴⁰⁵³
- Plane : TheZ⁴⁰⁵⁴
- ROI : ID⁴⁰⁵⁵

Total supported: 26

Total unknown or missing: 449

19.2.120 UBMReader

This page lists supported metadata fields for the Bio-Formats UBM format reader.

These fields are from the [OME data model](#)⁴⁰⁵⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats UBM format reader:

- Channel : ID⁴⁰⁵⁷
- Channel : SamplesPerPixel⁴⁰⁵⁸
- Image : AcquisitionDate⁴⁰⁵⁹
- Image : ID⁴⁰⁶⁰
- Image : Name⁴⁰⁶¹

⁴⁰⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴⁰⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴⁰⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴⁰⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴⁰⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴⁰⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴⁰⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴⁰⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴⁰⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴⁰⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴⁰⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴⁰⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

⁴⁰⁵⁶<http://www.openmicroscopy.org/site/support/ome-model/>

⁴⁰⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴⁰⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴⁰⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴⁰⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴⁰⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

- Pixels : BigEndian⁴⁰⁶²
- Pixels : DimensionOrder⁴⁰⁶³
- Pixels : ID⁴⁰⁶⁴
- Pixels : Interleaved⁴⁰⁶⁵
- Pixels : SignificantBits⁴⁰⁶⁶
- Pixels : SizeC⁴⁰⁶⁷
- Pixels : SizeT⁴⁰⁶⁸
- Pixels : SizeX⁴⁰⁶⁹
- Pixels : SizeY⁴⁰⁷⁰
- Pixels : SizeZ⁴⁰⁷¹
- Pixels : Type⁴⁰⁷²
- Plane : TheC⁴⁰⁷³
- Plane : TheT⁴⁰⁷⁴
- Plane : TheZ⁴⁰⁷⁵

Total supported: 19

Total unknown or missing: 456

19.2.121 UnisokuReader

This page lists supported metadata fields for the Bio-Formats Unisoku STM format reader.

These fields are from the OME data model⁴⁰⁷⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Unisoku STM format reader:

- Channel : ID⁴⁰⁷⁷
- Channel : SamplesPerPixel⁴⁰⁷⁸
- Image : AcquisitionDate⁴⁰⁷⁹

⁴⁰⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴⁰⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴⁰⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴⁰⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴⁰⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴⁰⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴⁰⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴⁰⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴⁰⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴⁰⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴⁰⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴⁰⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴⁰⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴⁰⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴⁰⁷⁶<http://www.openmicroscopy.org/site/support/ome-model/>

⁴⁰⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴⁰⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴⁰⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

- Image : Description⁴⁰⁸⁰
- Image : ID⁴⁰⁸¹
- Image : Name⁴⁰⁸²
- Pixels : BigEndian⁴⁰⁸³
- Pixels : DimensionOrder⁴⁰⁸⁴
- Pixels : ID⁴⁰⁸⁵
- Pixels : Interleaved⁴⁰⁸⁶
- Pixels : PhysicalSizeX⁴⁰⁸⁷
- Pixels : PhysicalSizeY⁴⁰⁸⁸
- Pixels : SignificantBits⁴⁰⁸⁹
- Pixels : SizeC⁴⁰⁹⁰
- Pixels : SizeT⁴⁰⁹¹
- Pixels : SizeX⁴⁰⁹²
- Pixels : SizeY⁴⁰⁹³
- Pixels : SizeZ⁴⁰⁹⁴
- Pixels : Type⁴⁰⁹⁵
- Plane : TheC⁴⁰⁹⁶
- Plane : TheT⁴⁰⁹⁷
- Plane : TheZ⁴⁰⁹⁸

Total supported: 22

Total unknown or missing: 453

19.2.122 VarianFDFReader

This page lists supported metadata fields for the Bio-Formats Varian FDF format reader.

These fields are from the [OME data model](#)⁴⁰⁹⁹. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 25 of them (5%).
- Of those, Bio-Formats fully or partially converts 25 (100%).

⁴⁰⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

⁴⁰⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴⁰⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴⁰⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴⁰⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴⁰⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴⁰⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴⁰⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴⁰⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴⁰⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴⁰⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴⁰⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴⁰⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴⁰⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴⁰⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴⁰⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴⁰⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴⁰⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴⁰⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴⁰⁹⁹<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Varian FDF format reader:

- Channel : ID⁴¹⁰⁰
- Channel : SamplesPerPixel⁴¹⁰¹
- Image : AcquisitionDate⁴¹⁰²
- Image : ID⁴¹⁰³
- Image : Name⁴¹⁰⁴
- Pixels : BigEndian⁴¹⁰⁵
- Pixels : DimensionOrder⁴¹⁰⁶
- Pixels : ID⁴¹⁰⁷
- Pixels : Interleaved⁴¹⁰⁸
- Pixels : PhysicalSizeX⁴¹⁰⁹
- Pixels : PhysicalSizeY⁴¹¹⁰
- Pixels : PhysicalSizeZ⁴¹¹¹
- Pixels : SignificantBits⁴¹¹²
- Pixels : SizeC⁴¹¹³
- Pixels : SizeT⁴¹¹⁴
- Pixels : SizeX⁴¹¹⁵
- Pixels : SizeY⁴¹¹⁶
- Pixels : SizeZ⁴¹¹⁷
- Pixels : Type⁴¹¹⁸
- Plane : PositionX⁴¹¹⁹
- Plane : PositionY⁴¹²⁰
- Plane : PositionZ⁴¹²¹
- Plane : TheC⁴¹²²
- Plane : TheT⁴¹²³

⁴¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴¹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴¹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁴¹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

⁴¹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

⁴¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

⁴¹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴¹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

- Plane : TheZ⁴¹²⁴

Total supported: 25

Total unknown or missing: 450

19.2.123 VGSAMReader

This page lists supported metadata fields for the Bio-Formats VG SAM format reader.

These fields are from the [OME data model](#)⁴¹²⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats VG SAM format reader:

- Channel : ID⁴¹²⁶
- Channel : SamplesPerPixel⁴¹²⁷
- Image : AcquisitionDate⁴¹²⁸
- Image : ID⁴¹²⁹
- Image : Name⁴¹³⁰
- Pixels : BigEndian⁴¹³¹
- Pixels : DimensionOrder⁴¹³²
- Pixels : ID⁴¹³³
- Pixels : Interleaved⁴¹³⁴
- Pixels : SignificantBits⁴¹³⁵
- Pixels : SizeC⁴¹³⁶
- Pixels : SizeT⁴¹³⁷
- Pixels : SizeX⁴¹³⁸
- Pixels : SizeY⁴¹³⁹
- Pixels : SizeZ⁴¹⁴⁰
- Pixels : Type⁴¹⁴¹

⁴¹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴¹²⁵<http://www.openmicroscopy.org/site/support/ome-model/>

⁴¹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴¹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴¹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴¹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴¹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴¹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴¹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴¹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴¹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴¹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴¹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴¹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴¹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴¹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴¹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴¹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

- Plane : TheC⁴¹⁴²
- Plane : TheT⁴¹⁴³
- Plane : TheZ⁴¹⁴⁴

Total supported: 19

Total unknown or missing: 456

19.2.124 VisitechReader

This page lists supported metadata fields for the Bio-Formats Visitech XYS format reader.

These fields are from the [OME data model](#)⁴¹⁴⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Visitech XYS format reader:

- Channel : ID⁴¹⁴⁶
- Channel : SamplesPerPixel⁴¹⁴⁷
- Image : AcquisitionDate⁴¹⁴⁸
- Image : ID⁴¹⁴⁹
- Image : Name⁴¹⁵⁰
- Pixels : BigEndian⁴¹⁵¹
- Pixels : DimensionOrder⁴¹⁵²
- Pixels : ID⁴¹⁵³
- Pixels : Interleaved⁴¹⁵⁴
- Pixels : SignificantBits⁴¹⁵⁵
- Pixels : SizeC⁴¹⁵⁶
- Pixels : SizeT⁴¹⁵⁷
- Pixels : SizeX⁴¹⁵⁸
- Pixels : SizeY⁴¹⁵⁹

⁴¹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴¹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴¹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴¹⁴⁵<http://www.openmicroscopy.org/site/support/ome-model/>

⁴¹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴¹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴¹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴¹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴¹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴¹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴¹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴¹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴¹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴¹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴¹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴¹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴¹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴¹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ⁴¹⁶⁰
- Pixels : Type⁴¹⁶¹
- Plane : TheC⁴¹⁶²
- Plane : TheT⁴¹⁶³
- Plane : TheZ⁴¹⁶⁴

Total supported: 19

Total unknown or missing: 456

19.2.125 VelocityClippingReader

This page lists supported metadata fields for the Bio-Formats Velocity Library Clipping format reader.

These fields are from the [OME data model](#)⁴¹⁶⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Velocity Library Clipping format reader:

- Channel : ID⁴¹⁶⁶
- Channel : SamplesPerPixel⁴¹⁶⁷
- Image : AcquisitionDate⁴¹⁶⁸
- Image : ID⁴¹⁶⁹
- Image : Name⁴¹⁷⁰
- Pixels : BigEndian⁴¹⁷¹
- Pixels : DimensionOrder⁴¹⁷²
- Pixels : ID⁴¹⁷³
- Pixels : Interleaved⁴¹⁷⁴
- Pixels : SignificantBits⁴¹⁷⁵
- Pixels : SizeC⁴¹⁷⁶
- Pixels : SizeT⁴¹⁷⁷

⁴¹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴¹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴¹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴¹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴¹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴¹⁶⁵<http://www.openmicroscopy.org/site/support/ome-model/>

⁴¹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴¹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴¹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴¹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴¹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴¹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴¹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴¹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴¹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴¹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴¹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴¹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

- Pixels : SizeX⁴¹⁷⁸
- Pixels : SizeY⁴¹⁷⁹
- Pixels : SizeZ⁴¹⁸⁰
- Pixels : Type⁴¹⁸¹
- Plane : TheC⁴¹⁸²
- Plane : TheT⁴¹⁸³
- Plane : TheZ⁴¹⁸⁴

Total supported: 19

Total unknown or missing: 456

19.2.126 VelocityReader

This page lists supported metadata fields for the Bio-Formats Velocity Library format reader.

These fields are from the [OME data model](#)⁴¹⁸⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 37 of them (7%).
- Of those, Bio-Formats fully or partially converts 37 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Velocity Library format reader:

- Channel : ID⁴¹⁸⁶
- Channel : Name⁴¹⁸⁷
- Channel : SamplesPerPixel⁴¹⁸⁸
- Detector : ID⁴¹⁸⁹
- Detector : Model⁴¹⁹⁰
- DetectorSettings : ID⁴¹⁹¹
- Image : AcquisitionDate⁴¹⁹²
- Image : Description⁴¹⁹³
- Image : ID⁴¹⁹⁴
- Image : InstrumentRef⁴¹⁹⁵

⁴¹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴¹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴¹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴¹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴¹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴¹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴¹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴¹⁸⁵<http://www.openmicroscopy.org/site/support/ome-model/>

⁴¹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴¹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

⁴¹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴¹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

⁴¹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴¹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

⁴¹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴¹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

⁴¹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴¹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

- Image : Name⁴¹⁹⁶
- Instrument : ID⁴¹⁹⁷
- Objective : Correction⁴¹⁹⁸
- Objective : ID⁴¹⁹⁹
- Objective : Immersion⁴²⁰⁰
- Objective : NominalMagnification⁴²⁰¹
- ObjectiveSettings : ID⁴²⁰²
- Pixels : BigEndian⁴²⁰³
- Pixels : DimensionOrder⁴²⁰⁴
- Pixels : ID⁴²⁰⁵
- Pixels : Interleaved⁴²⁰⁶
- Pixels : PhysicalSizeX⁴²⁰⁷
- Pixels : PhysicalSizeY⁴²⁰⁸
- Pixels : PhysicalSizeZ⁴²⁰⁹
- Pixels : SignificantBits⁴²¹⁰
- Pixels : SizeC⁴²¹¹
- Pixels : SizeT⁴²¹²
- Pixels : SizeX⁴²¹³
- Pixels : SizeY⁴²¹⁴
- Pixels : SizeZ⁴²¹⁵
- Pixels : Type⁴²¹⁶
- Plane : PositionX⁴²¹⁷
- Plane : PositionY⁴²¹⁸
- Plane : PositionZ⁴²¹⁹
- Plane : TheC⁴²²⁰
- Plane : TheT⁴²²¹

⁴¹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴¹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

⁴¹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

⁴¹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

⁴²⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

⁴²⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

⁴²⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

⁴²⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴²⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴²⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴²⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴²⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴²⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴²⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁴²¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴²¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴²¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴²¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴²¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴²¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴²¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴²¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

⁴²¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

⁴²¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

⁴²²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴²²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

- Plane : TheZ⁴²²²

Total supported: 37

Total unknown or missing: 438

19.2.127 WATOPReader

This page lists supported metadata fields for the Bio-Formats WA Technology TOP format reader.

These fields are from the [OME data model](#)⁴²²³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 22 of them (4%).
- Of those, Bio-Formats fully or partially converts 22 (100%).

Supported fields

These fields are fully supported by the Bio-Formats WA Technology TOP format reader:

- Channel : ID⁴²²⁴
- Channel : SamplesPerPixel⁴²²⁵
- Image : AcquisitionDate⁴²²⁶
- Image : Description⁴²²⁷
- Image : ID⁴²²⁸
- Image : Name⁴²²⁹
- Pixels : BigEndian⁴²³⁰
- Pixels : DimensionOrder⁴²³¹
- Pixels : ID⁴²³²
- Pixels : Interleaved⁴²³³
- Pixels : PhysicalSizeX⁴²³⁴
- Pixels : PhysicalSizeY⁴²³⁵
- Pixels : SignificantBits⁴²³⁶
- Pixels : SizeC⁴²³⁷
- Pixels : SizeT⁴²³⁸
- Pixels : SizeX⁴²³⁹

⁴²²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴²²³<http://www.openmicroscopy.org/site/support/ome-model/>

⁴²²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴²²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴²²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴²²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

⁴²²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴²²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴²³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴²³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴²³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴²³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴²³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴²³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴²³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴²³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴²³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴²³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

- Pixels : SizeY⁴²⁴⁰
- Pixels : SizeZ⁴²⁴¹
- Pixels : Type⁴²⁴²
- Plane : TheC⁴²⁴³
- Plane : TheT⁴²⁴⁴
- Plane : TheZ⁴²⁴⁵

Total supported: 22

Total unknown or missing: 453

19.2.128 BMPReader

This page lists supported metadata fields for the Bio-Formats Windows Bitmap format reader.

These fields are from the [OME data model](#)⁴²⁴⁶. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the [metadata summary table](#):

- The file format itself supports 21 of them (4%).
- Of those, Bio-Formats fully or partially converts 21 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Windows Bitmap format reader:

- Channel : ID⁴²⁴⁷
- Channel : SamplesPerPixel⁴²⁴⁸
- Image : AcquisitionDate⁴²⁴⁹
- Image : ID⁴²⁵⁰
- Image : Name⁴²⁵¹
- Pixels : BigEndian⁴²⁵²
- Pixels : DimensionOrder⁴²⁵³
- Pixels : ID⁴²⁵⁴
- Pixels : Interleaved⁴²⁵⁵
- Pixels : PhysicalSizeX⁴²⁵⁶
- Pixels : PhysicalSizeY⁴²⁵⁷

⁴²⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴²⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴²⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴²⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴²⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴²⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴²⁴⁶<http://www.openmicroscopy.org/site/support/ome-model/>

⁴²⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴²⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴²⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴²⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴²⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴²⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴²⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴²⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴²⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴²⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴²⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

- Pixels : SignificantBits⁴²⁵⁸
- Pixels : SizeC⁴²⁵⁹
- Pixels : SizeT⁴²⁶⁰
- Pixels : SizeX⁴²⁶¹
- Pixels : SizeY⁴²⁶²
- Pixels : SizeZ⁴²⁶³
- Pixels : Type⁴²⁶⁴
- Plane : TheC⁴²⁶⁵
- Plane : TheT⁴²⁶⁶
- Plane : TheZ⁴²⁶⁷

Total supported: 21

Total unknown or missing: 454

19.2.129 WizReader

This page lists supported metadata fields for the Bio-Formats Woolz format reader.

These fields are from the [OME data model](#)⁴²⁶⁸. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 26 of them (5%).
- Of those, Bio-Formats fully or partially converts 26 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Woolz format reader:

- Channel : ID⁴²⁶⁹
- Channel : SamplesPerPixel⁴²⁷⁰
- Image : AcquisitionDate⁴²⁷¹
- Image : ID⁴²⁷²
- Image : Name⁴²⁷³
- Pixels : BigEndian⁴²⁷⁴
- Pixels : DimensionOrder⁴²⁷⁵

⁴²⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴²⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴²⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴²⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴²⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴²⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴²⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴²⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴²⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴²⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴²⁶⁸<http://www.openmicroscopy.org/site/support/ome-model/>

⁴²⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴²⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴²⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴²⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴²⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴²⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴²⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

- Pixels : ID⁴²⁷⁶
- Pixels : Interleaved⁴²⁷⁷
- Pixels : PhysicalSizeX⁴²⁷⁸
- Pixels : PhysicalSizeY⁴²⁷⁹
- Pixels : PhysicalSizeZ⁴²⁸⁰
- Pixels : SignificantBits⁴²⁸¹
- Pixels : SizeC⁴²⁸²
- Pixels : SizeT⁴²⁸³
- Pixels : SizeX⁴²⁸⁴
- Pixels : SizeY⁴²⁸⁵
- Pixels : SizeZ⁴²⁸⁶
- Pixels : Type⁴²⁸⁷
- Plane : TheC⁴²⁸⁸
- Plane : TheT⁴²⁸⁹
- Plane : TheZ⁴²⁹⁰
- StageLabel : Name⁴²⁹¹
- StageLabel : X⁴²⁹²
- StageLabel : Y⁴²⁹³
- StageLabel : Z⁴²⁹⁴

Total supported: 26

Total unknown or missing: 449

19.2.130 ZeissTIFFReader

This page lists supported metadata fields for the Bio-Formats Zeiss AxioVision TIFF format reader.

These fields are from the [OME data model](#)⁴²⁹⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

⁴²⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴²⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴²⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴²⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴²⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁴²⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴²⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴²⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴²⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴²⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴²⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴²⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴²⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴²⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴²⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴²⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Name

⁴²⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_X

⁴²⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Y

⁴²⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#StageLabel_Z

⁴²⁹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Zeiss AxioVision TIFF format reader:

- Channel : ID⁴²⁹⁶
- Channel : SamplesPerPixel⁴²⁹⁷
- Image : AcquisitionDate⁴²⁹⁸
- Image : ID⁴²⁹⁹
- Image : Name⁴³⁰⁰
- Pixels : BigEndian⁴³⁰¹
- Pixels : DimensionOrder⁴³⁰²
- Pixels : ID⁴³⁰³
- Pixels : Interleaved⁴³⁰⁴
- Pixels : SignificantBits⁴³⁰⁵
- Pixels : SizeC⁴³⁰⁶
- Pixels : SizeT⁴³⁰⁷
- Pixels : SizeX⁴³⁰⁸
- Pixels : SizeY⁴³⁰⁹
- Pixels : SizeZ⁴³¹⁰
- Pixels : Type⁴³¹¹
- Plane : TheC⁴³¹²
- Plane : TheT⁴³¹³
- Plane : TheZ⁴³¹⁴

Total supported: 19

Total unknown or missing: 456

19.2.131 ZeissZVIReader

This page lists supported metadata fields for the Bio-Formats Zeiss Vision Image (ZVI) format reader.

These fields are from the OME data model⁴³¹⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

⁴²⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID
⁴²⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel
⁴²⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate
⁴²⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID
⁴³⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name
⁴³⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian
⁴³⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder
⁴³⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID
⁴³⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved
⁴³⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits
⁴³⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC
⁴³⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT
⁴³⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX
⁴³⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY
⁴³¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ
⁴³¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type
⁴³¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC
⁴³¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT
⁴³¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ
⁴³¹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 19 of them (4%).
- Of those, Bio-Formats fully or partially converts 19 (100%).

Supported fields**These fields are fully supported by the Bio-Formats Zeiss Vision Image (ZVI) format reader:**

- Channel : ID⁴³¹⁶
- Channel : SamplesPerPixel⁴³¹⁷
- Image : AcquisitionDate⁴³¹⁸
- Image : ID⁴³¹⁹
- Image : Name⁴³²⁰
- Pixels : BigEndian⁴³²¹
- Pixels : DimensionOrder⁴³²²
- Pixels : ID⁴³²³
- Pixels : Interleaved⁴³²⁴
- Pixels : SignificantBits⁴³²⁵
- Pixels : SizeC⁴³²⁶
- Pixels : SizeT⁴³²⁷
- Pixels : SizeX⁴³²⁸
- Pixels : SizeY⁴³²⁹
- Pixels : SizeZ⁴³³⁰
- Pixels : Type⁴³³¹
- Plane : TheC⁴³³²
- Plane : TheT⁴³³³
- Plane : TheZ⁴³³⁴

Total supported: 19**Total unknown or missing: 456**

⁴³¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴³¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴³¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴³¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴³²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴³²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴³²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴³²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴³²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴³²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴³²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴³²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴³²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴³²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴³³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴³³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴³³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴³³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴³³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

19.2.132 ZeissCZIReader

This page lists supported metadata fields for the Bio-Formats Zeiss CZI format reader.

These fields are from the [OME data model](#)⁴³³⁵. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 157 of them (33%).
- Of those, Bio-Formats fully or partially converts 157 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Zeiss CZI format reader:

- Arc : LotNumber⁴³³⁶
- Arc : Manufacturer⁴³³⁷
- Arc : Model⁴³³⁸
- Arc : Power⁴³³⁹
- Arc : SerialNumber⁴³⁴⁰
- Channel : AcquisitionMode⁴³⁴¹
- Channel : Color⁴³⁴²
- Channel : EmissionWavelength⁴³⁴³
- Channel : ExcitationWavelength⁴³⁴⁴
- Channel : Fluor⁴³⁴⁵
- Channel : ID⁴³⁴⁶
- Channel : IlluminationType⁴³⁴⁷
- Channel : Name⁴³⁴⁸
- Channel : PinholeSize⁴³⁴⁹
- Channel : SamplesPerPixel⁴³⁵⁰
- Detector : AmplificationGain⁴³⁵¹
- Detector : Gain⁴³⁵²
- Detector : ID⁴³⁵³

⁴³³⁵<http://www.openmicroscopy.org/site/support/ome-model/>

⁴³³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴³³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴³³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴³³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power

⁴³⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴³⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_AcquisitionMode

⁴³⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Color

⁴³⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_EmissionWavelength

⁴³⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ExcitationWavelength

⁴³⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Fluor

⁴³⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴³⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_IlluminationType

⁴³⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

⁴³⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize

⁴³⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴³⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_AmplificationGain

⁴³⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Gain

⁴³⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

- Detector : LotNumber⁴³⁵⁴
- Detector : Manufacturer⁴³⁵⁵
- Detector : Model⁴³⁵⁶
- Detector : Offset⁴³⁵⁷
- Detector : SerialNumber⁴³⁵⁸
- Detector : Type⁴³⁵⁹
- Detector : Zoom⁴³⁶⁰
- DetectorSettings : Binning⁴³⁶¹
- DetectorSettings : Gain⁴³⁶²
- DetectorSettings : ID⁴³⁶³
- Dichroic : ID⁴³⁶⁴
- Dichroic : LotNumber⁴³⁶⁵
- Dichroic : Manufacturer⁴³⁶⁶
- Dichroic : Model⁴³⁶⁷
- Dichroic : SerialNumber⁴³⁶⁸
- Ellipse : ID⁴³⁶⁹
- Ellipse : RadiusX⁴³⁷⁰
- Ellipse : RadiusY⁴³⁷¹
- Ellipse : Text⁴³⁷²
- Ellipse : X⁴³⁷³
- Ellipse : Y⁴³⁷⁴
- Experimenter : Email⁴³⁷⁵
- Experimenter : FirstName⁴³⁷⁶
- Experimenter : ID⁴³⁷⁷
- Experimenter : Institution⁴³⁷⁸
- Experimenter : LastName⁴³⁷⁹

⁴³⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴³⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴³⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴³⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Offset

⁴³⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴³⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

⁴³⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Zoom

⁴³⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

⁴³⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Gain

⁴³⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

⁴³⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dichroic_ID

⁴³⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴³⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴³⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴³⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴³⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴³⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusX

⁴³⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusY

⁴³⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text

⁴³⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_X

⁴³⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_Y

⁴³⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_Email

⁴³⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_FirstName

⁴³⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID

⁴³⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_Institution

⁴³⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_LastName

- Experimenter : MiddleName⁴³⁸⁰
- Experimenter : UserName⁴³⁸¹
- Filament : LotNumber⁴³⁸²
- Filament : Manufacturer⁴³⁸³
- Filament : Model⁴³⁸⁴
- Filament : Power⁴³⁸⁵
- Filament : SerialNumber⁴³⁸⁶
- Filter : FilterWheel⁴³⁸⁷
- Filter : ID⁴³⁸⁸
- Filter : LotNumber⁴³⁸⁹
- Filter : Manufacturer⁴³⁹⁰
- Filter : Model⁴³⁹¹
- Filter : SerialNumber⁴³⁹²
- Filter : Type⁴³⁹³
- FilterSet : DichroicRef⁴³⁹⁴
- FilterSet : EmissionFilterRef⁴³⁹⁵
- FilterSet : ExcitationFilterRef⁴³⁹⁶
- FilterSet : ID⁴³⁹⁷
- FilterSet : LotNumber⁴³⁹⁸
- FilterSet : Manufacturer⁴³⁹⁹
- FilterSet : Model⁴⁴⁰⁰
- FilterSet : SerialNumber⁴⁴⁰¹
- Image : AcquisitionDate⁴⁴⁰²
- Image : Description⁴⁴⁰³
- Image : ExperimenterRef⁴⁴⁰⁴
- Image : ID⁴⁴⁰⁵

⁴³⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_MiddleName

⁴³⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_UserName

⁴³⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴³⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴³⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴³⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power

⁴³⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴³⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_FilterWheel

⁴³⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_ID

⁴³⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴³⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴³⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴³⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴³⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_Type

⁴³⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DichroicRef_ID

⁴³⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

⁴³⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

⁴³⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterSet_ID

⁴³⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴³⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴⁴⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁴⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴⁴⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴⁴⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

⁴⁴⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ExperimenterRef_ID

⁴⁴⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

- Image : InstrumentRef⁴⁴⁰⁶
- Image : Name⁴⁴⁰⁷
- Image : ROIRef⁴⁴⁰⁸
- ImagingEnvironment : AirPressure⁴⁴⁰⁹
- ImagingEnvironment : CO2Percent⁴⁴¹⁰
- ImagingEnvironment : Humidity⁴⁴¹¹
- ImagingEnvironment : Temperature⁴⁴¹²
- Instrument : ID⁴⁴¹³
- Laser : LotNumber⁴⁴¹⁴
- Laser : Manufacturer⁴⁴¹⁵
- Laser : Model⁴⁴¹⁶
- Laser : Power⁴⁴¹⁷
- Laser : SerialNumber⁴⁴¹⁸
- LightEmittingDiode : LotNumber⁴⁴¹⁹
- LightEmittingDiode : Manufacturer⁴⁴²⁰
- LightEmittingDiode : Model⁴⁴²¹
- LightEmittingDiode : Power⁴⁴²²
- LightEmittingDiode : SerialNumber⁴⁴²³
- Line : ID⁴⁴²⁴
- Line : Text⁴⁴²⁵
- Line : X1⁴⁴²⁶
- Line : X2⁴⁴²⁷
- Line : Y1⁴⁴²⁸
- Line : Y2⁴⁴²⁹
- Microscope : LotNumber⁴⁴³⁰
- Microscope : Manufacturer⁴⁴³¹

⁴⁴⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

⁴⁴⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴⁴⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

⁴⁴⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_AirPressure

⁴⁴¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_CO2Percent

⁴⁴¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Humidity

⁴⁴¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ImagingEnvironment_Temperature

⁴⁴¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

⁴⁴¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴⁴¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴⁴¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁴¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power

⁴⁴¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴⁴¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴⁴²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴⁴²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁴²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_Power

⁴⁴²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴⁴²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁴²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text

⁴⁴²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X1

⁴⁴²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X2

⁴⁴²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y1

⁴⁴²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y2

⁴⁴³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴⁴³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

- Microscope : Model⁴⁴³²
- Microscope : SerialNumber⁴⁴³³
- Microscope : Type⁴⁴³⁴
- Objective : CalibratedMagnification⁴⁴³⁵
- Objective : Correction⁴⁴³⁶
- Objective : ID⁴⁴³⁷
- Objective : Immersion⁴⁴³⁸
- Objective : Iris⁴⁴³⁹
- Objective : LensNA⁴⁴⁴⁰
- Objective : LotNumber⁴⁴⁴¹
- Objective : Manufacturer⁴⁴⁴²
- Objective : Model⁴⁴⁴³
- Objective : NominalMagnification⁴⁴⁴⁴
- Objective : SerialNumber⁴⁴⁴⁵
- Objective : WorkingDistance⁴⁴⁴⁶
- ObjectiveSettings : CorrectionCollar⁴⁴⁴⁷
- ObjectiveSettings : ID⁴⁴⁴⁸
- ObjectiveSettings : Medium⁴⁴⁴⁹
- ObjectiveSettings : RefractiveIndex⁴⁴⁵⁰
- Pixels : BigEndian⁴⁴⁵¹
- Pixels : DimensionOrder⁴⁴⁵²
- Pixels : ID⁴⁴⁵³
- Pixels : Interleaved⁴⁴⁵⁴
- Pixels : PhysicalSizeX⁴⁴⁵⁵
- Pixels : PhysicalSizeY⁴⁴⁵⁶
- Pixels : PhysicalSizeZ⁴⁴⁵⁷

⁴⁴³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁴³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴⁴³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Microscope_Type

⁴⁴³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_CalibratedMagnification

⁴⁴³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

⁴⁴³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

⁴⁴³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

⁴⁴³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Iris

⁴⁴⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

⁴⁴⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_LotNumber

⁴⁴⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴⁴⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁴⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

⁴⁴⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁴⁴⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_WorkingDistance

⁴⁴⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_CorrectionCollar

⁴⁴⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

⁴⁴⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_Medium

⁴⁴⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

⁴⁴⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴⁴⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴⁴⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴⁴⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴⁴⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴⁴⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴⁴⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

- Pixels : SignificantBits⁴⁴⁵⁸
- Pixels : SizeC⁴⁴⁵⁹
- Pixels : SizeT⁴⁴⁶⁰
- Pixels : SizeX⁴⁴⁶¹
- Pixels : SizeY⁴⁴⁶²
- Pixels : SizeZ⁴⁴⁶³
- Pixels : Type⁴⁴⁶⁴
- Plane : DeltaT⁴⁴⁶⁵
- Plane : ExposureTime⁴⁴⁶⁶
- Plane : PositionX⁴⁴⁶⁷
- Plane : PositionY⁴⁴⁶⁸
- Plane : PositionZ⁴⁴⁶⁹
- Plane : TheC⁴⁴⁷⁰
- Plane : TheT⁴⁴⁷¹
- Plane : TheZ⁴⁴⁷²
- Polygon : ID⁴⁴⁷³
- Polygon : Points⁴⁴⁷⁴
- Polygon : Text⁴⁴⁷⁵
- Polyline : ID⁴⁴⁷⁶
- Polyline : Points⁴⁴⁷⁷
- Polyline : Text⁴⁴⁷⁸
- ROI : Description⁴⁴⁷⁹
- ROI : ID⁴⁴⁸⁰
- ROI : Name⁴⁴⁸¹
- Rectangle : Height⁴⁴⁸²
- Rectangle : ID⁴⁴⁸³

⁴⁴⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴⁴⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴⁴⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴⁴⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴⁴⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴⁴⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴⁴⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴⁴⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

⁴⁴⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_ExposureTime

⁴⁴⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

⁴⁴⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

⁴⁴⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

⁴⁴⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴⁴⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴⁴⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴⁴⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁴⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polygon_Points

⁴⁴⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text

⁴⁴⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁴⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polyline_Points

⁴⁴⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text

⁴⁴⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_Description

⁴⁴⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

⁴⁴⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_Name

⁴⁴⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Height

⁴⁴⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

- Rectangle : Text⁴⁴⁸⁴
- Rectangle : Width⁴⁴⁸⁵
- Rectangle : X⁴⁴⁸⁶
- Rectangle : Y⁴⁴⁸⁷
- TransmittanceRange : CutIn⁴⁴⁸⁸
- TransmittanceRange : CutInTolerance⁴⁴⁸⁹
- TransmittanceRange : CutOut⁴⁴⁹⁰
- TransmittanceRange : CutOutTolerance⁴⁴⁹¹
- TransmittanceRange : Transmittance⁴⁴⁹²

Total supported: 157

Total unknown or missing: 318

19.2.133 ZeissLSMReader

This page lists supported metadata fields for the Bio-Formats Zeiss Laser-Scanning Microscopy format reader.

These fields are from the [OME data model](#)⁴⁴⁹³. Bio-Formats standardizes each format's original metadata to and from the OME data model so that you can work with a particular piece of metadata (e.g. physical width of the image in microns) in a format-independent way.

Of the 475 fields documented in the *metadata summary table*:

- The file format itself supports 101 of them (21%).
- Of those, Bio-Formats fully or partially converts 101 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Zeiss Laser-Scanning Microscopy format reader:

- Channel : Color⁴⁴⁹⁴
- Channel : ID⁴⁴⁹⁵
- Channel : Name⁴⁴⁹⁶
- Channel : PinholeSize⁴⁴⁹⁷
- Channel : SamplesPerPixel⁴⁴⁹⁸
- Detector : AmplificationGain⁴⁴⁹⁹
- Detector : Gain⁴⁵⁰⁰
- Detector : ID⁴⁵⁰¹

⁴⁴⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text

⁴⁴⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Width

⁴⁴⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_X

⁴⁴⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Y

⁴⁴⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutIn

⁴⁴⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutInTolerance

⁴⁴⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutOut

⁴⁴⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutOutTolerance

⁴⁴⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_Transmittance

⁴⁴⁹³<http://www.openmicroscopy.org/site/support/ome-model/>

⁴⁴⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Color

⁴⁴⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_ID

⁴⁴⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_Name

⁴⁴⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_PinholeSize

⁴⁴⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Channel_SamplesPerPixel

⁴⁴⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_AmplificationGain

⁴⁵⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Gain

⁴⁵⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_ID

- Detector : Type⁴⁵⁰²
- Detector : Zoom⁴⁵⁰³
- DetectorSettings : Binning⁴⁵⁰⁴
- DetectorSettings : ID⁴⁵⁰⁵
- Dichroic : ID⁴⁵⁰⁶
- Dichroic : Model⁴⁵⁰⁷
- Ellipse : FontSize⁴⁵⁰⁸
- Ellipse : ID⁴⁵⁰⁹
- Ellipse : RadiusX⁴⁵¹⁰
- Ellipse : RadiusY⁴⁵¹¹
- Ellipse : StrokeWidth⁴⁵¹²
- Ellipse : Transform⁴⁵¹³
- Ellipse : X⁴⁵¹⁴
- Ellipse : Y⁴⁵¹⁵
- Experimenter : ID⁴⁵¹⁶
- Experimenter : UserName⁴⁵¹⁷
- Filter : ID⁴⁵¹⁸
- Filter : Model⁴⁵¹⁹
- Filter : Type⁴⁵²⁰
- Image : AcquisitionDate⁴⁵²¹
- Image : Description⁴⁵²²
- Image : ID⁴⁵²³
- Image : InstrumentRef⁴⁵²⁴
- Image : Name⁴⁵²⁵
- Image : ROIRef⁴⁵²⁶
- Instrument : ID⁴⁵²⁷

⁴⁵⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Type

⁴⁵⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Detector_Zoom

⁴⁵⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_Binning

⁴⁵⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DetectorSettings_ID

⁴⁵⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Dichroic_ID

⁴⁵⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁵⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

⁴⁵⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁵¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusX

⁴⁵¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_RadiusY

⁴⁵¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

⁴⁵¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Transform

⁴⁵¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_X

⁴⁵¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Ellipse_Y

⁴⁵¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_ID

⁴⁵¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Experimenter_UserName

⁴⁵¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_ID

⁴⁵¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁵²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Filter_Type

⁴⁵²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_AcquisitionDate

⁴⁵²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Description

⁴⁵²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_ID

⁴⁵²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#InstrumentRef_ID

⁴⁵²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Image_Name

⁴⁵²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROIRef_ID

⁴⁵²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Instrument_ID

- Label : `FontSize`⁴⁵²⁸
- Label : `ID`⁴⁵²⁹
- Label : `StrokeWidth`⁴⁵³⁰
- Label : `Text`⁴⁵³¹
- Label : `X`⁴⁵³²
- Label : `Y`⁴⁵³³
- Laser : `ID`⁴⁵³⁴
- Laser : `LaserMedium`⁴⁵³⁵
- Laser : `Model`⁴⁵³⁶
- Laser : `Type`⁴⁵³⁷
- Laser : `Wavelength`⁴⁵³⁸
- LightPath : `DichroicRef`⁴⁵³⁹
- LightPath : `EmissionFilterRef`⁴⁵⁴⁰
- Line : `FontSize`⁴⁵⁴¹
- Line : `ID`⁴⁵⁴²
- Line : `StrokeWidth`⁴⁵⁴³
- Line : `X1`⁴⁵⁴⁴
- Line : `X2`⁴⁵⁴⁵
- Line : `Y1`⁴⁵⁴⁶
- Line : `Y2`⁴⁵⁴⁷
- Objective : `Correction`⁴⁵⁴⁸
- Objective : `ID`⁴⁵⁴⁹
- Objective : `Immersion`⁴⁵⁵⁰
- Objective : `Iris`⁴⁵⁵¹
- Objective : `LensNA`⁴⁵⁵²
- Objective : `NominalMagnification`⁴⁵⁵³

⁴⁵²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

⁴⁵²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁵³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

⁴⁵³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_Text

⁴⁵³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Label_X

⁴⁵³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Label_Y

⁴⁵³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#LightSource_ID

⁴⁵³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_LaserMedium

⁴⁵³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁵³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Type

⁴⁵³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Laser_Wavelength

⁴⁵³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#DichroicRef_ID

⁴⁵⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#FilterRef_ID

⁴⁵⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

⁴⁵⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁵⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

⁴⁵⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X1

⁴⁵⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_X2

⁴⁵⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y1

⁴⁵⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Line_Y2

⁴⁵⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Correction

⁴⁵⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_ID

⁴⁵⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Immersion

⁴⁵⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_Iris

⁴⁵⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_LensNA

⁴⁵⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Objective_NominalMagnification

- ObjectiveSettings : ID⁴⁵⁵⁴
- Pixels : BigEndian⁴⁵⁵⁵
- Pixels : DimensionOrder⁴⁵⁵⁶
- Pixels : ID⁴⁵⁵⁷
- Pixels : Interleaved⁴⁵⁵⁸
- Pixels : PhysicalSizeX⁴⁵⁵⁹
- Pixels : PhysicalSizeY⁴⁵⁶⁰
- Pixels : PhysicalSizeZ⁴⁵⁶¹
- Pixels : SignificantBits⁴⁵⁶²
- Pixels : SizeC⁴⁵⁶³
- Pixels : SizeT⁴⁵⁶⁴
- Pixels : SizeX⁴⁵⁶⁵
- Pixels : SizeY⁴⁵⁶⁶
- Pixels : SizeZ⁴⁵⁶⁷
- Pixels : TimeIncrement⁴⁵⁶⁸
- Pixels : Type⁴⁵⁶⁹
- Plane : DeltaT⁴⁵⁷⁰
- Plane : PositionX⁴⁵⁷¹
- Plane : PositionY⁴⁵⁷²
- Plane : PositionZ⁴⁵⁷³
- Plane : TheC⁴⁵⁷⁴
- Plane : TheT⁴⁵⁷⁵
- Plane : TheZ⁴⁵⁷⁶
- Polygon : FontSize⁴⁵⁷⁷
- Polygon : ID⁴⁵⁷⁸
- Polygon : Points⁴⁵⁷⁹

⁴⁵⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#ObjectiveSettings_ID

⁴⁵⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_BigEndian

⁴⁵⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_DimensionOrder

⁴⁵⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_ID

⁴⁵⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Interleaved

⁴⁵⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴⁵⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴⁵⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁴⁵⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SignificantBits

⁴⁵⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeC

⁴⁵⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeT

⁴⁵⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeX

⁴⁵⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeY

⁴⁵⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_SizeZ

⁴⁵⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_TimeIncrement

⁴⁵⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Pixels_Type

⁴⁵⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_DeltaT

⁴⁵⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionX

⁴⁵⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionY

⁴⁵⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_PositionZ

⁴⁵⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheC

⁴⁵⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheT

⁴⁵⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#Plane_TheZ

⁴⁵⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

⁴⁵⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁵⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polygon_Points

- Polygon : StrokeWidth⁴⁵⁸⁰
- Polyline : FontSize⁴⁵⁸¹
- Polyline : ID⁴⁵⁸²
- Polyline : Points⁴⁵⁸³
- Polyline : StrokeWidth⁴⁵⁸⁴
- ROI : ID⁴⁵⁸⁵
- Rectangle : FontSize⁴⁵⁸⁶
- Rectangle : Height⁴⁵⁸⁷
- Rectangle : ID⁴⁵⁸⁸
- Rectangle : StrokeWidth⁴⁵⁸⁹
- Rectangle : Width⁴⁵⁹⁰
- Rectangle : X⁴⁵⁹¹
- Rectangle : Y⁴⁵⁹²
- TransmittanceRange : CutIn⁴⁵⁹³
- TransmittanceRange : CutOut⁴⁵⁹⁴

Total supported: 101

Total unknown or missing: 374

The version 5 releases use the *June 2013* release of the *OME-Model*⁴⁵⁹⁵

⁴⁵⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

⁴⁵⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

⁴⁵⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁵⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Polyline_Points

⁴⁵⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

⁴⁵⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#ROI_ID

⁴⁵⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_FontSize

⁴⁵⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Height

⁴⁵⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_ID

⁴⁵⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Shape_StrokeWidth

⁴⁵⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Width

⁴⁵⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_X

⁴⁵⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ROI_xsd.html#Rectangle_Y

⁴⁵⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutIn

⁴⁵⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2013-06/ome_xsd.html#TransmittanceRange_CutOut

⁴⁵⁹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

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