



Bio-Formats Documentation

Release 4.4.9

The Open Microscopy Environment

October 15, 2013

CONTENTS

I	About Bio-Formats	2
1	Why Java?	4
2	Bio-Formats metadata processing	5
3	Help	6
3.1	Reporting a bug	6
3.2	Troubleshooting	7
4	Bio-Formats versions	9
4.1	Version history	9
II	User Information	23
5	Using Bio-Formats with ImageJ and Fiji	24
5.1	ImageJ	24
5.2	Fiji	25
5.3	Bio-Formats features in ImageJ and Fiji	26
5.4	Installing Bio-Formats in ImageJ	26
5.5	Using Bio-Formats to load images into ImageJ	28
5.6	Managing memory in ImageJ/Fiji using Bio-Formats	32
5.7	Upgrading the Bio-Formats importer for ImageJ to the latest trunk build	34
6	OMERO	39
7	Image server applications	40
7.1	BISQUE	40
7.2	OME Server	40
8	Libraries and scripting applications	43
8.1	Command line tools	43
8.2	FARSIGHT	44
8.3	i3dcore	44
8.4	ImgLib	44
8.5	ITK	45
8.6	Qu for MATLAB	46
8.7	Subimager	46
9	Numerical data processing applications	47
9.1	IDL	47
9.2	KNIME	47
9.3	MATLAB	47
9.4	VisAD	48
10	Visualization and analysis applications	49
10.1	Bitplane Imaris	49

10.2	CellProfiler	49
10.3	Comstat2	50
10.4	Endrov	50
10.5	FocalPoint	50
10.6	Graphic Converter	51
10.7	Icy	51
10.8	imago	51
10.9	Iqm	51
10.10	Macnification	51
10.11	MIPAV	51
10.12	Vaa3D	52
10.13	VisBio	52
10.14	XuvTools	53
III Developer Documentation		54
11 Using Bio-Formats		55
11.1	An in-depth guide to using Bio-Formats	55
11.2	Generating test images	57
12 Bio-Formats as a Java library		59
12.1	API documentation	59
12.2	Examples	60
13 Interfacing from non-Java code		70
13.1	Interfacing with Bio-Formats from non-Java code	70
13.2	Bio-Formats C++ bindings	70
13.3	Build instructions for C++ bindings	70
13.4	Building C++ bindings in Windows	72
13.5	Building C++ bindings in Mac OS X	73
13.6	Building C++ bindings in Linux	74
14 SCIFIO		75
14.1	SCientific Imaging Formats Input and Output	75
15 Writing new Bio-Formats file format readers		76
15.1	Bio-Formats file format reader guide	76
16 Contributing to Bio-Formats		80
16.1	Developing Bio-Formats	80
16.2	Testing individual commits (internal developers)	81
16.3	Public test data	82
16.4	Bio-Formats service and dependency infrastructure	85
IV Formats		88
17 Dataset Structure Table		90
17.1	Flex Support	93
18 Supported Formats		94
18.1	3i SlideBook	99
18.2	Andor Bio-Imaging Division (ABD) TIFF	100
18.3	AIM	100
18.4	Alicona 3D	101
18.5	Amersham Biosciences Gel	102
18.6	Amira Mesh	102
18.7	Analyze 7.5	103
18.8	Animated PNG	104
18.9	Aperio SVS TIFF	104
18.10	Applied Precision CellWorX	105

18.11 AVI (Audio Video Interleave)	106
18.12 Axon Raw Format	107
18.13 BD Pathway	108
18.14 Becker & Hickl SPCImage	108
18.15 Bio-Rad Gel	109
18.16 Bio-Rad PIC	110
18.17 Bitplane Imaris	110
18.18 Bruker MRI	111
18.19 Burleigh	112
18.20 Canon DNG	113
18.21 Cellomics	113
18.22 cellSens VSI	114
18.23 DeltaVision	115
18.24 DICOM	116
18.25 ECAT7	117
18.26 EPS (Encapsulated PostScript)	117
18.27 Evotec/PerkinElmer Opera Flex	118
18.28 FEI	119
18.29 FEI TIFF	119
18.30 FITS (Flexible Image Transport System)	120
18.31 Gatan Digital Micrograph	121
18.32 Gatan Digital Micrograph 2	121
18.33 GIF (Graphics Interchange Format)	122
18.34 Hamamatsu Aquacosmos NAF	123
18.35 Hamamatsu HIS	124
18.36 Hamamatsu ndpi	124
18.37 Hamamatsu VMS	125
18.38 Hitachi S-4800	126
18.39 ICS (Image Cytometry Standard)	126
18.40 Imacon	127
18.41 ImagePro Sequence	128
18.42 ImagePro Workspace	129
18.43 IMAGIC	129
18.44 IMOD	130
18.45 Improvion Openlab LIFF	131
18.46 Improvion Openlab Raw	132
18.47 Improvion TIFF	132
18.48 InCell 1000	133
18.49 InCell 3000	134
18.50 INR	135
18.51 IPLab	135
18.52 IPLab-Mac	136
18.53 JEOL	137
18.54 JPEG	137
18.55 JPEG 2000	138
18.56 JPK	139
18.57 JPX	140
18.58 Khoros VIFF (Visualization Image File Format) Bitmap	140
18.59 Kodak BIP	141
18.60 Lambert Instruments FLIM	142
18.61 Leica LCS LEI	142
18.62 Leica LAS AF LIF (Leica Image File Format)	143
18.63 Leica SCN	144
18.64 LEO	145
18.65 Li-Cor L2D	145
18.66 LIM (Laboratory Imaging/Nikon)	146
18.67 MetaMorph 7.5 TIFF	147
18.68 MetaMorph Stack (STK)	147
18.69 MIAS (Maia Scientific)	148
18.70 Micro-Manager	149
18.71 MINC MRI	150

18.72 Minolta MRW	150
18.73 MNG (Multiple-image Network Graphics)	151
18.74 Molecular Imaging	152
18.75 MRC (Medical Research Council)	152
18.76 NEF (Nikon Electronic Format)	153
18.77 NIFTI	154
18.78 Nikon Elements TIFF	155
18.79 Nikon EZ-C1 TIFF	155
18.80 Nikon NIS-Elements ND2	156
18.81 NRRD (Nearly Raw Raster Data)	157
18.82 Olympus CellR/APL	158
18.83 Olympus FluoView FV1000	158
18.84 Olympus FluoView TIFF	159
18.85 Olympus ScanR	160
18.86 Olympus SIS TIFF	161
18.87 OME-TIFF	161
18.88 OME-XML	162
18.89 Oxford Instruments	163
18.90 PCX (PC Paintbrush)	164
18.91 Perkin Elmer Densitometer	164
18.92 PerkinElmer Operetta	165
18.93 PerkinElmer UltraView	166
18.94 PGM (Portable Gray Map)	166
18.95 Adobe Photoshop PSD	167
18.96 Photoshop TIFF	168
18.97 PICT (Macintosh Picture)	168
18.98 PNG (Portable Network Graphics)	169
18.99 Prairie Technologies TIFF	170
18.100Quesant	170
18.101QuickTime Movie	171
18.102RHK	172
18.103SBIG	173
18.104Seiko	174
18.105SimplePCI & HCIImage	174
18.106SimplePCI & HCIImage TIFF	175
18.107SM Camera	176
18.108SPIDER	176
18.109Targa	177
18.110Text	178
18.111TIFF (Tagged Image File Format)	178
18.112TillPhotonics TillVision	179
18.113Topometrix	180
18.114Trestle	180
18.115SUBM	181
18.116Unisoku	182
18.117Varian FDF	182
18.118VG SAM	183
18.119VisiTech XYS	184
18.120Volocity	184
18.121Volocity Library Clipping	185
18.122WA-TOP	186
18.123Windows Bitmap	186
18.124Zeiss AxioVision TIFF	187
18.125Zeiss AxioVision ZVI (Zeiss Vision Image)	188
18.126Zeiss CZI	189
18.127Zeiss LSM (Laser Scanning Microscope) 510/710	189
19 Summary of supported metadata fields	191
19.1 Format readers	191
19.2 Metadata fields	194

Index

394

Index

395

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>

HELP

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 [latest 4.4 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 latest stable version of Bio-Formats is 4.4.9. For future development directions, see the 4.5² and 5.0³ roadmaps.

4.1 Version history

4.1.1 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

4.1.2 4.4.8 (2013 May 2)

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

4.1.3 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.

4.1.4 4.4.6 (2013 February 11)

- Many bug fixes
- Further documentation improvements

4.1.5 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

¹<http://www.openmicroscopy.org/site/support/omero4/>

²<http://trac.openmicroscopy.org.uk/ome/query?group=status&component=Bio-Formats&milestone=OMERO-4.5>

³<http://trac.openmicroscopy.org.uk/ome/query?group=status&component=Bio-Formats&milestone=OMERO-5.0>

4.1.6 4.4.4 (2012 September 24)

- Many bug fixes

4.1.7 4.4.2 (2012 August 22)

- Security fix for OMERO plugins for ImageJ

4.1.8 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

4.1.9 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

4.1.10 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

4.1.11 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

4.1.12 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

4.1.13 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

4.1.14 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

4.1.15 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

4.1.16 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

4.1.17 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

4.1.18 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

4.1.19 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

4.1.20 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

4.1.21 2008 August 30

- Fixed bugs in many file format readers
- Fixed several bugs with swapping dimensions
- Added support for Olympus CellR/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

4.1.22 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

4.1.23 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

4.1.24 2008 Feb 12

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

4.1.25 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

4.1.26 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

4.1.27 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

4.1.28 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

4.1.29 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

4.1.30 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

4.1.31 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

4.1.32 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

4.1.33 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

4.1.34 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

4.1.35 2007 July 2

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

4.1.36 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

4.1.37 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

4.1.38 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

4.1.39 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

4.1.40 2007 Mar 16

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

4.1.41 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

4.1.42 2007 Feb 28

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

4.1.43 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

4.1.44 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

4.1.45 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

4.1.46 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

4.1.47 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

4.1.48 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

4.1.49 2006 Oct 31

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

4.1.50 2006 Oct 30

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

4.1.51 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

4.1.52 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

4.1.53 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

4.1.54 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

4.1.55 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 4.4 version](#)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.

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/>

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.

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.

Fiji ships with the latest Bio-Formats stable release. Alternately, you can [enable the “Bio-Formats daily builds” update site](#)¹⁹ to receive the latest Bio-Formats 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.

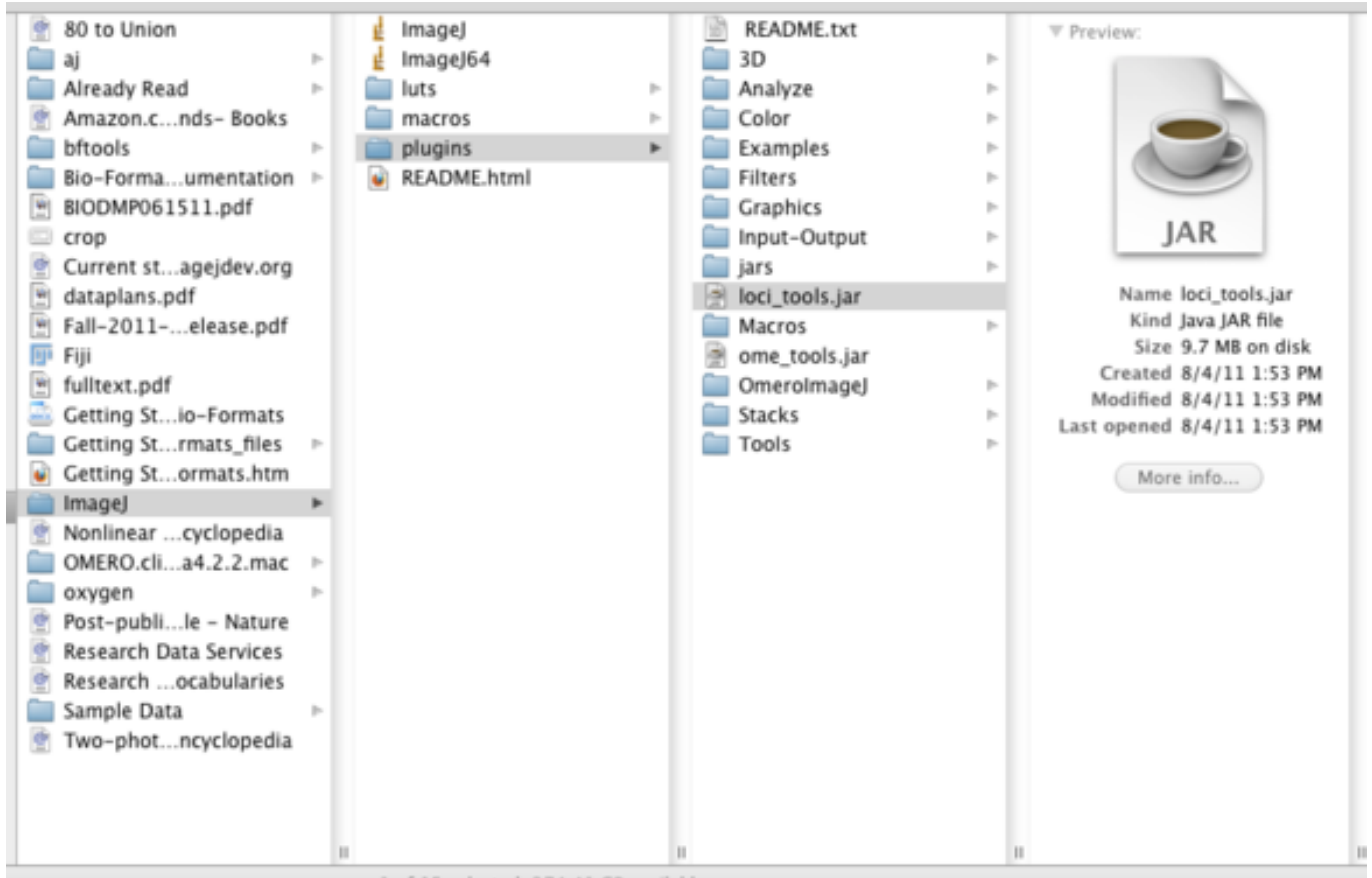
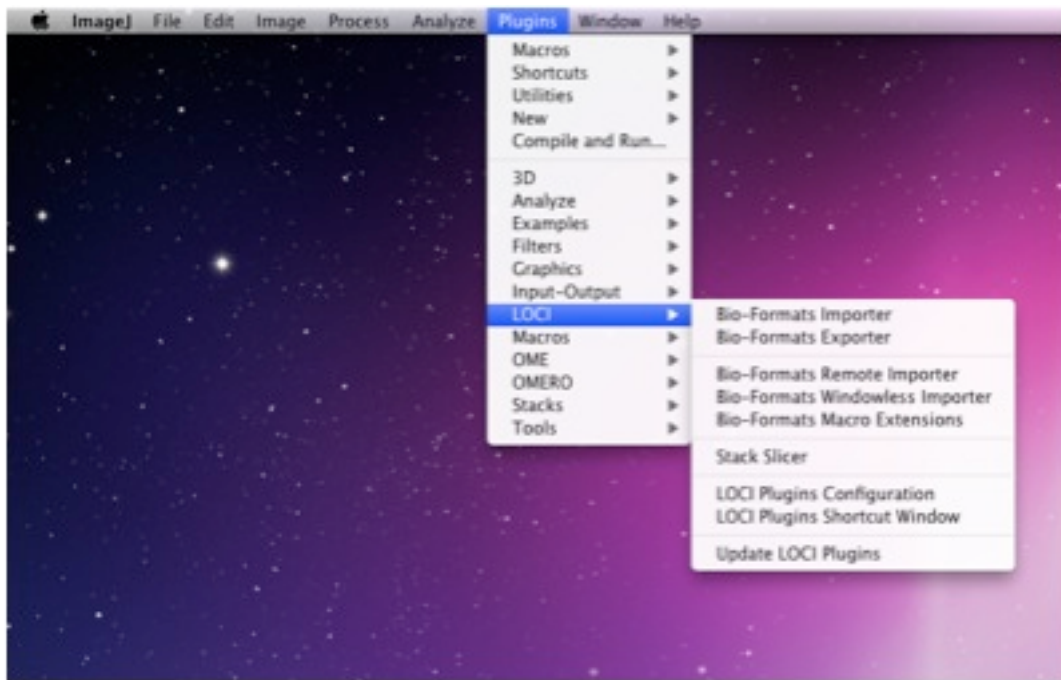


Figure 5.1: Plugin Directory for ImageJ: Where in ImageJ’s file structure you should place the file once you downloaded it.

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

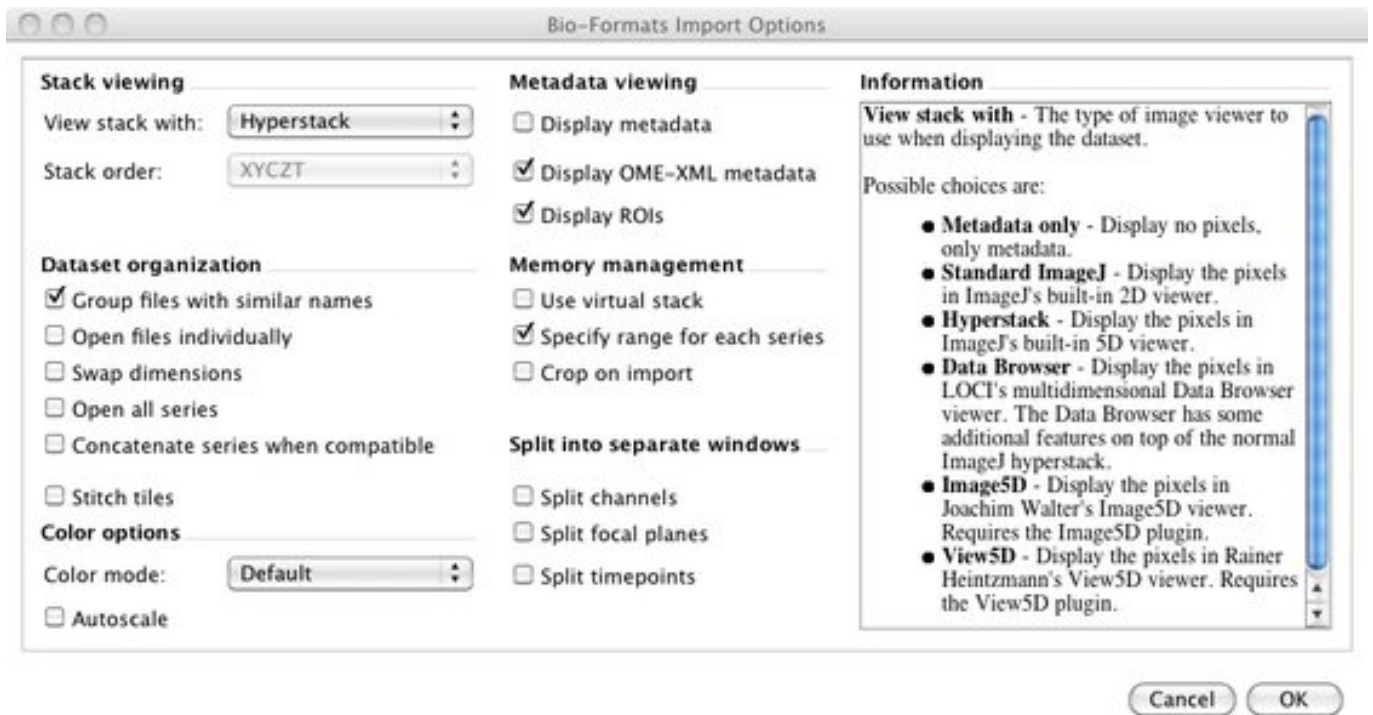
This section will explain how to use Bio-Formats to import files into ImageJ and how to use the settings on the Bio-Formats Import Options screen.

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.

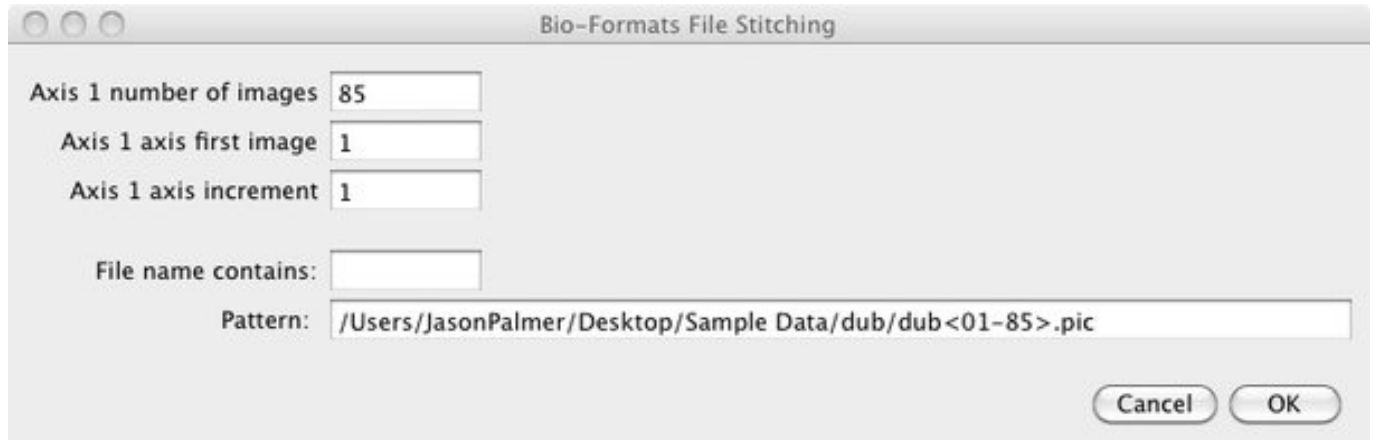
To demonstrate how to use the **Group files with similar names** feature, you can use the [dub²⁶](http://www.loci.wisc.edu/sample-data/dub) data set available under LOCI's [Sample Data²⁷](http://www.loci.wisc.edu/sample-data) page. You will notice that it is a large dataset: each of the 85 files shows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

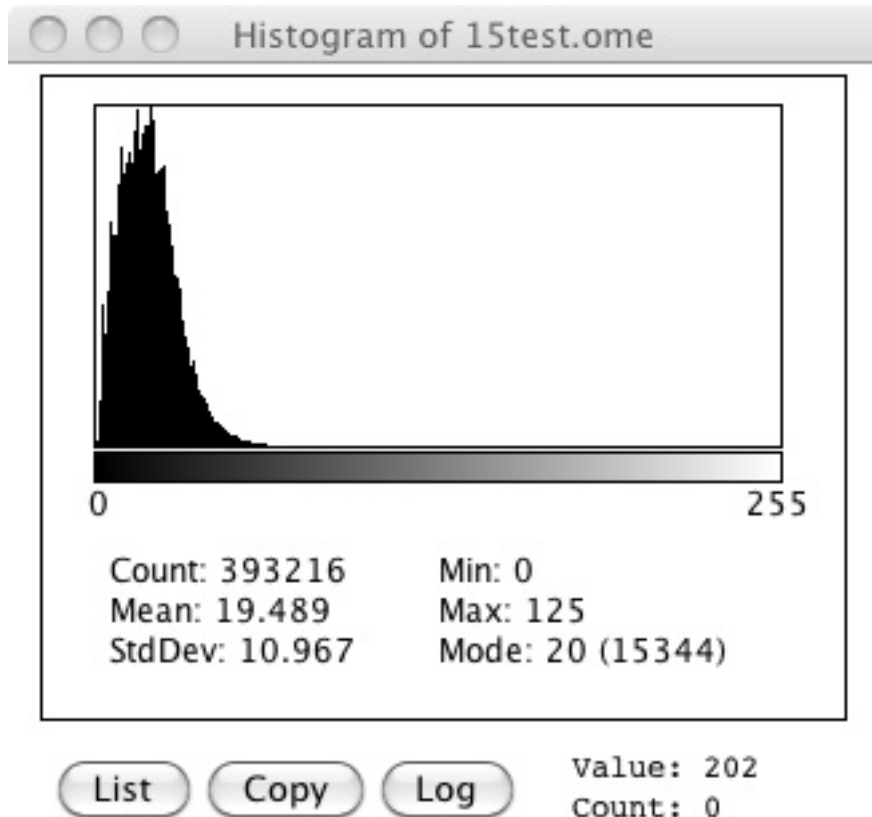
5.5.4 Autoscale

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.

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

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.

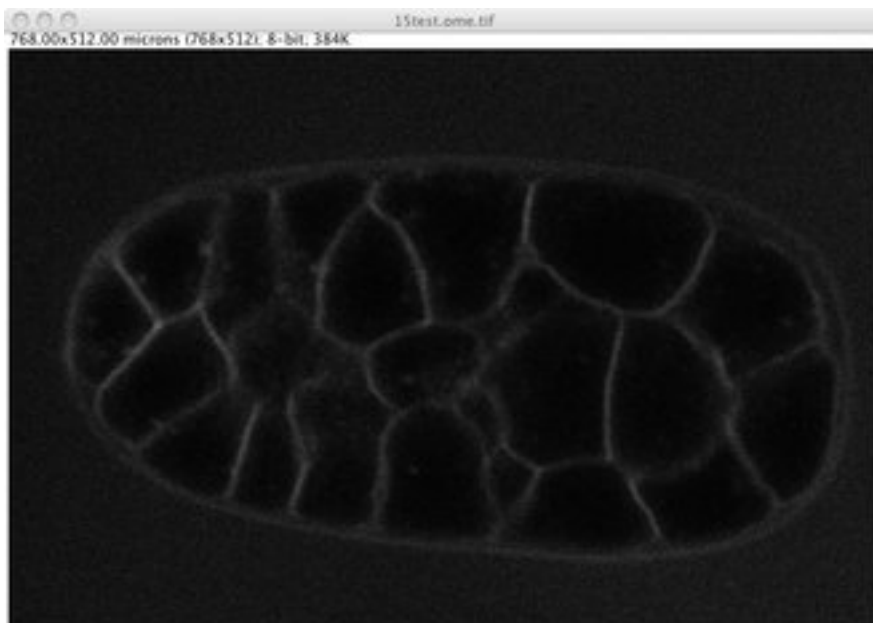
ImageJ can collect the intensity information about each pixel from an image or stack and create a histogram. (You can see it by selecting Histogram under the Analyze menu.) Here is the histogram of a one particular image:

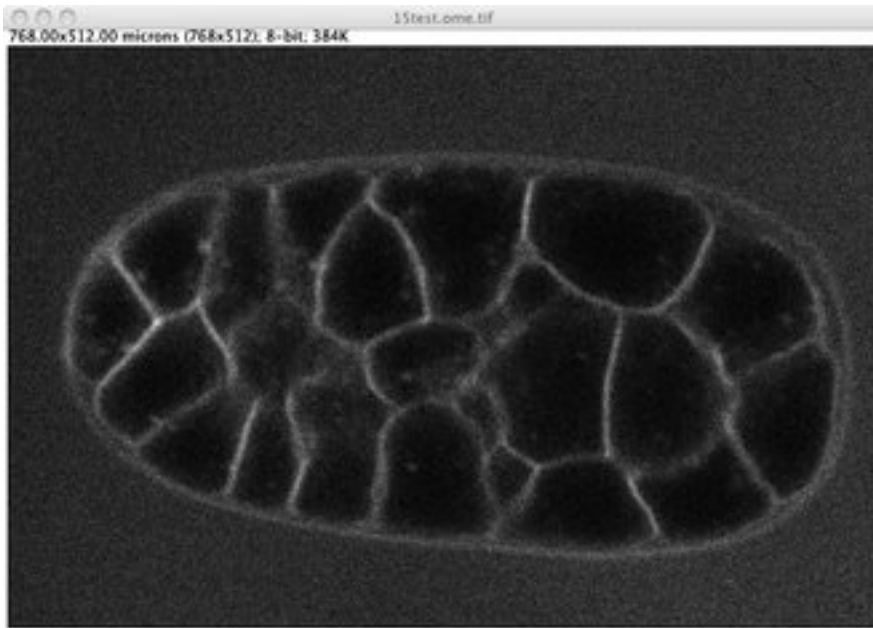


Notice that the histogram heavily skews right. Even though there are 256 possible values, only 0 through 125 are being used.

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:



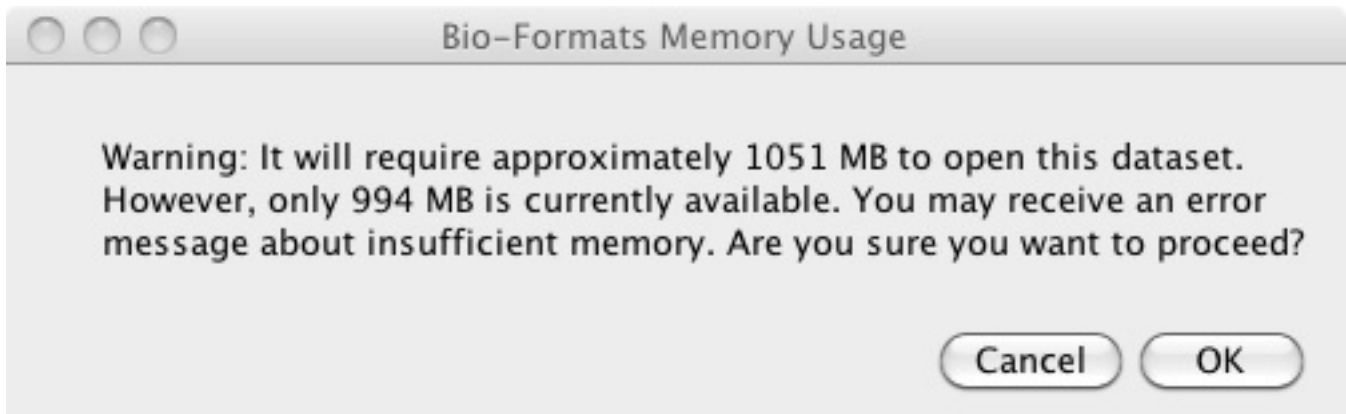


Autoscale readjusts the image based on the highest value in the entire data set. This means if the highest value in your dataset is close to maximum display value, Autoscale's adjusting may be undetectable to the eye.

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:

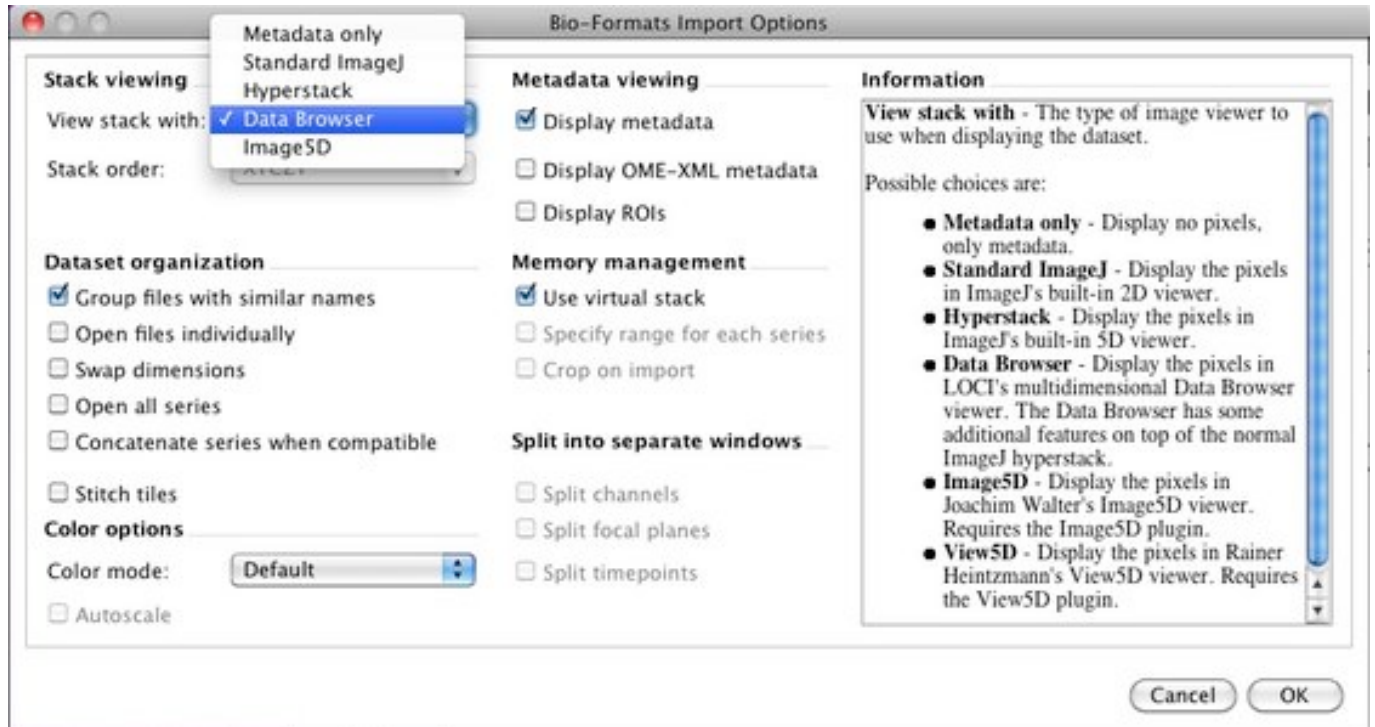
- View your stack with Data Browser
- Crop the view area
- Open only a subset of images
- Use Virtual Stack
- Increase ImageJ/Fiji's memory.

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](http://www.loci.wisc.edu/software/data-browser)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.

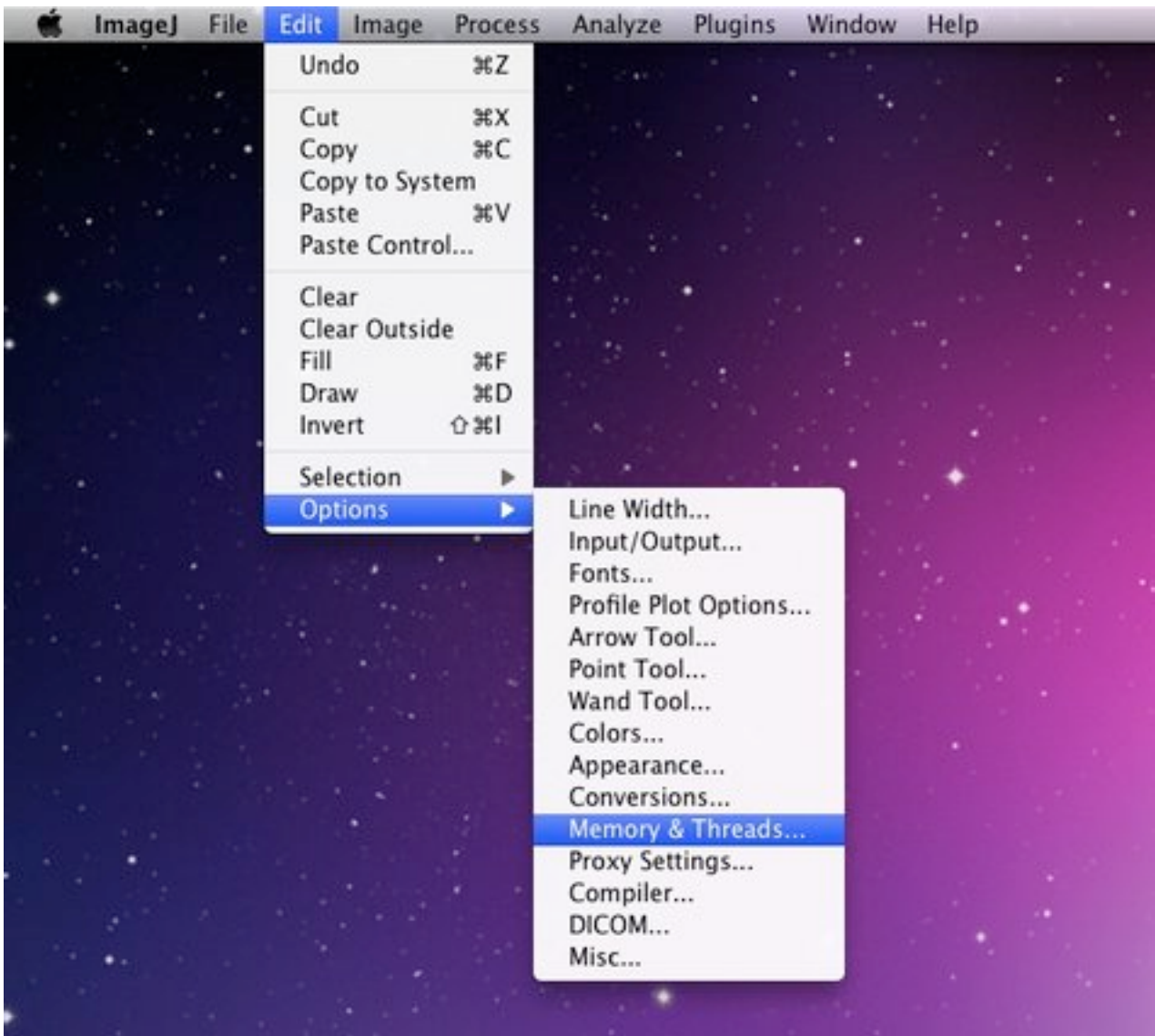
5.6.4 Use Virtual Stack

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.

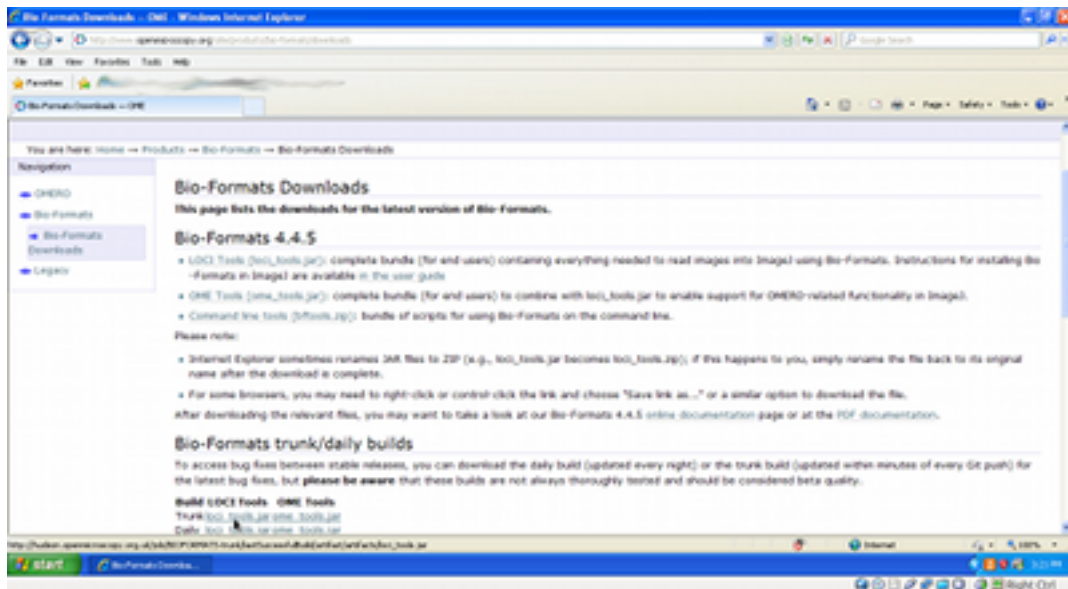
Please note that unlike the other three features, ImageJ/Fiji itself provides this feature and not Bio-Formats. You can find out more about this feature by looking at ImageJ's [documentation](#)³⁰.

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

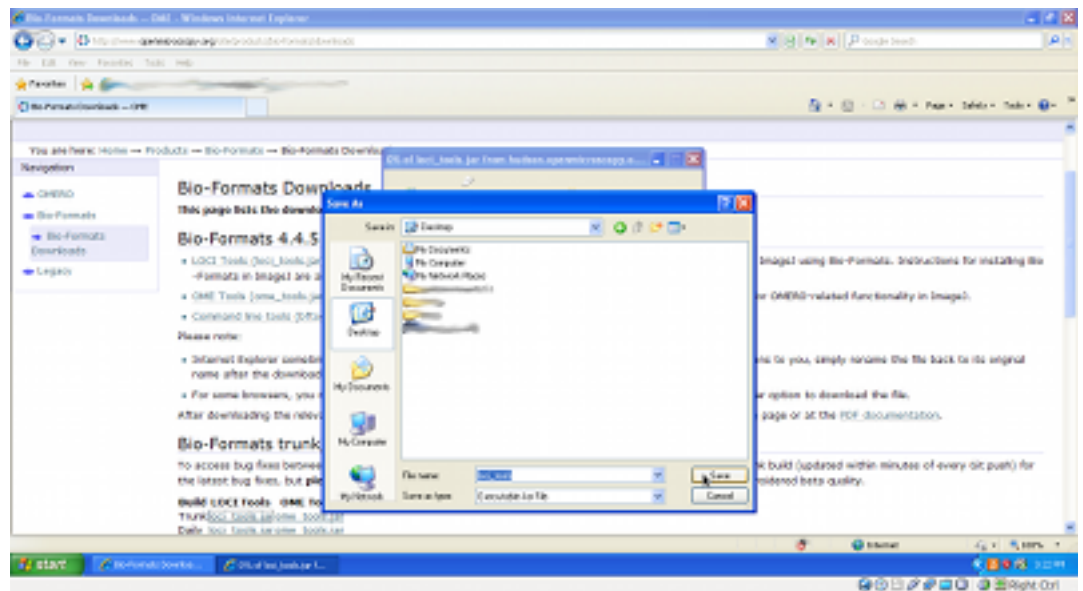
1) Download the latest trunk build of **loci_tools.jar** from 4.4 version [Bio-Formats downloads](#)³¹

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

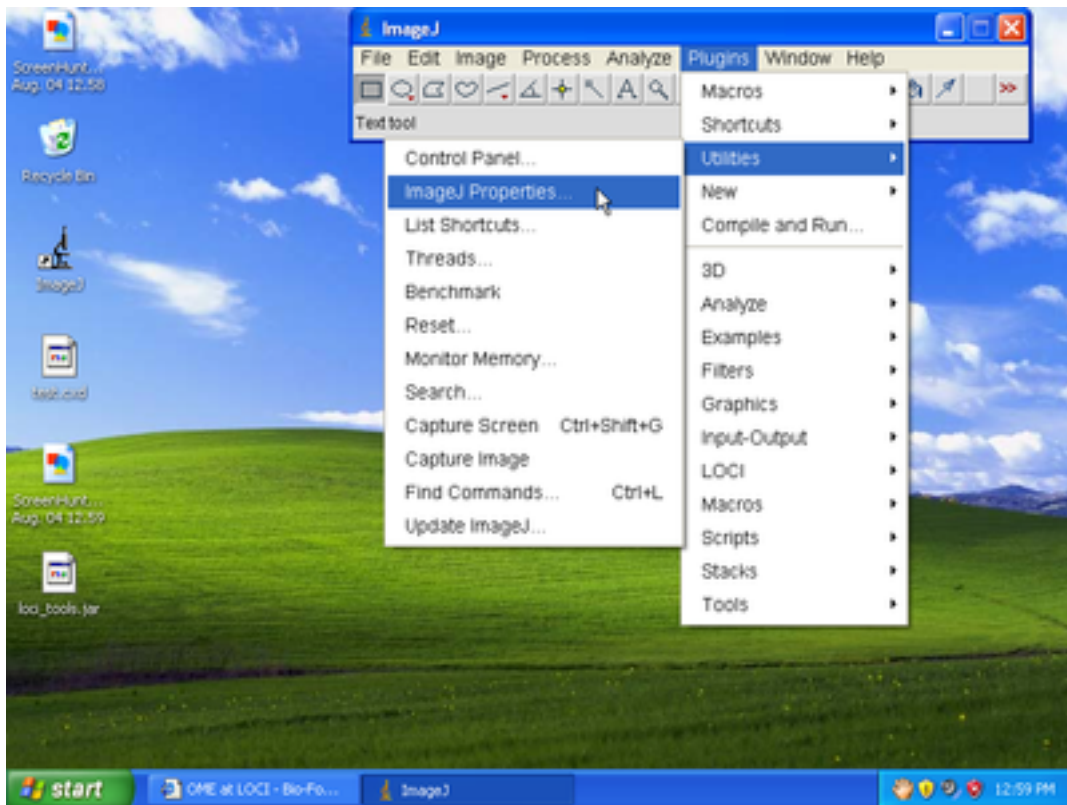
³¹<http://downloads.openmicroscopy.org/bio-formats/>



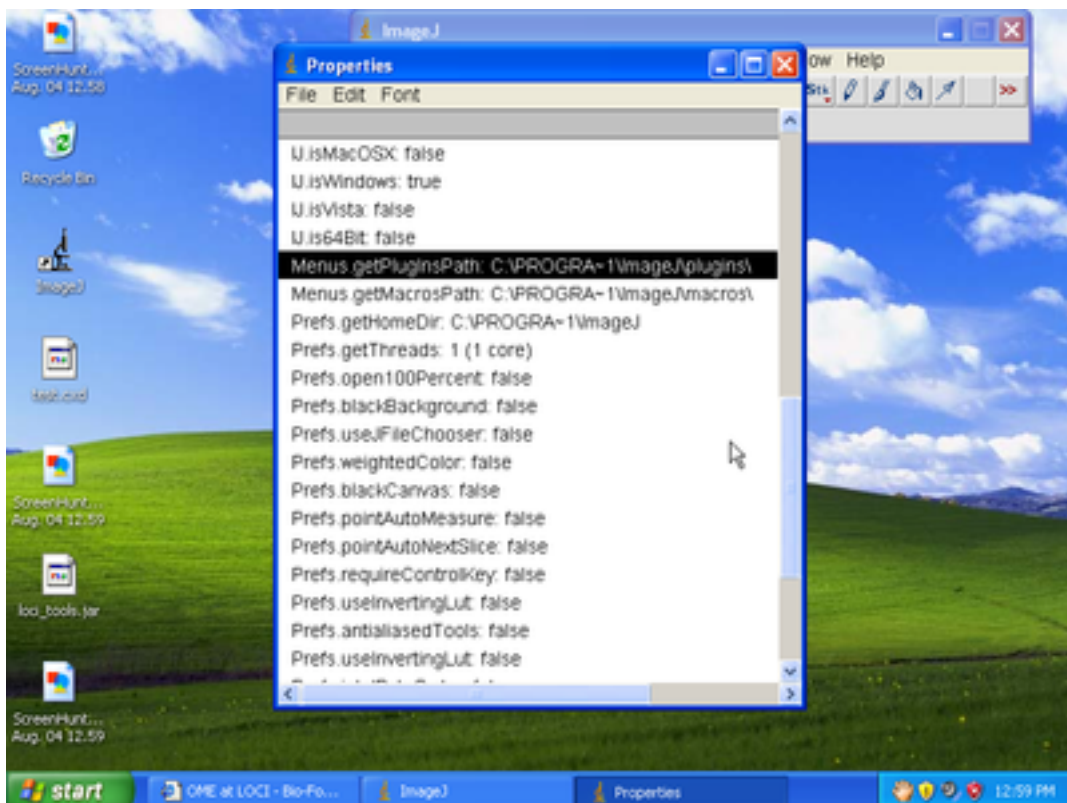
2) Internet Explorer will ask you where it should save **loci_tools.jar**. Select 'Desktop'.



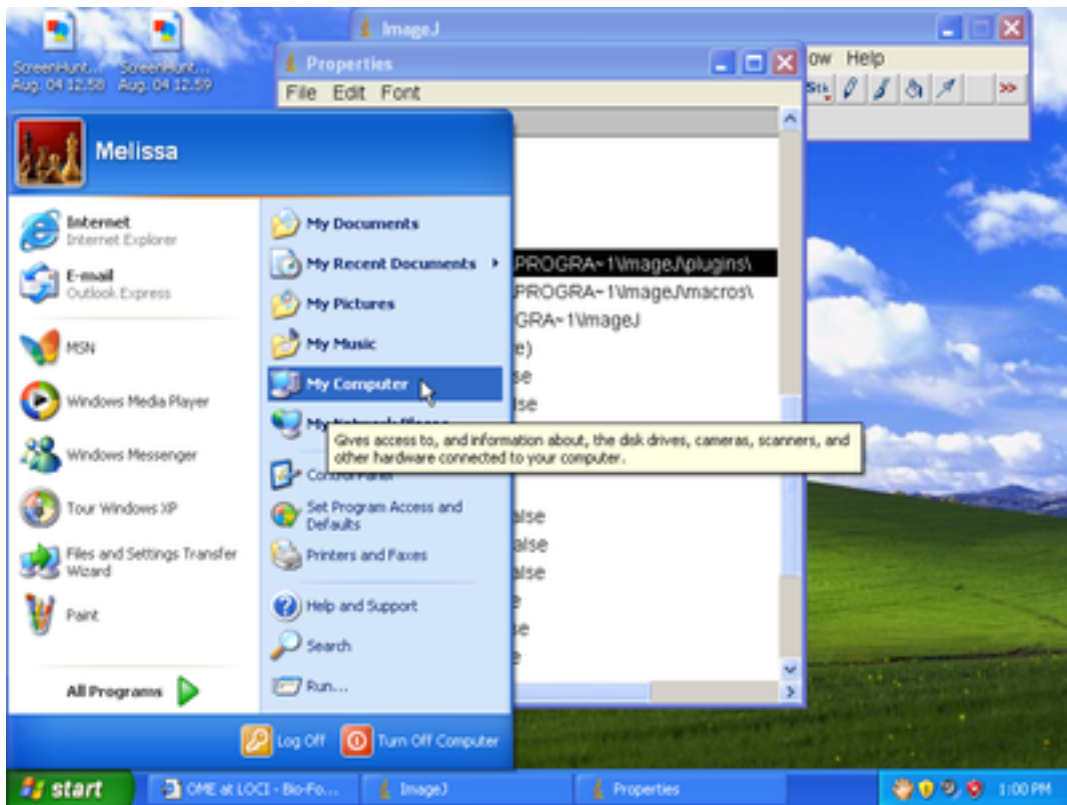
3. Start ImageJ.
4. Select "Plugins > Utilities > ImageJ Properties..."



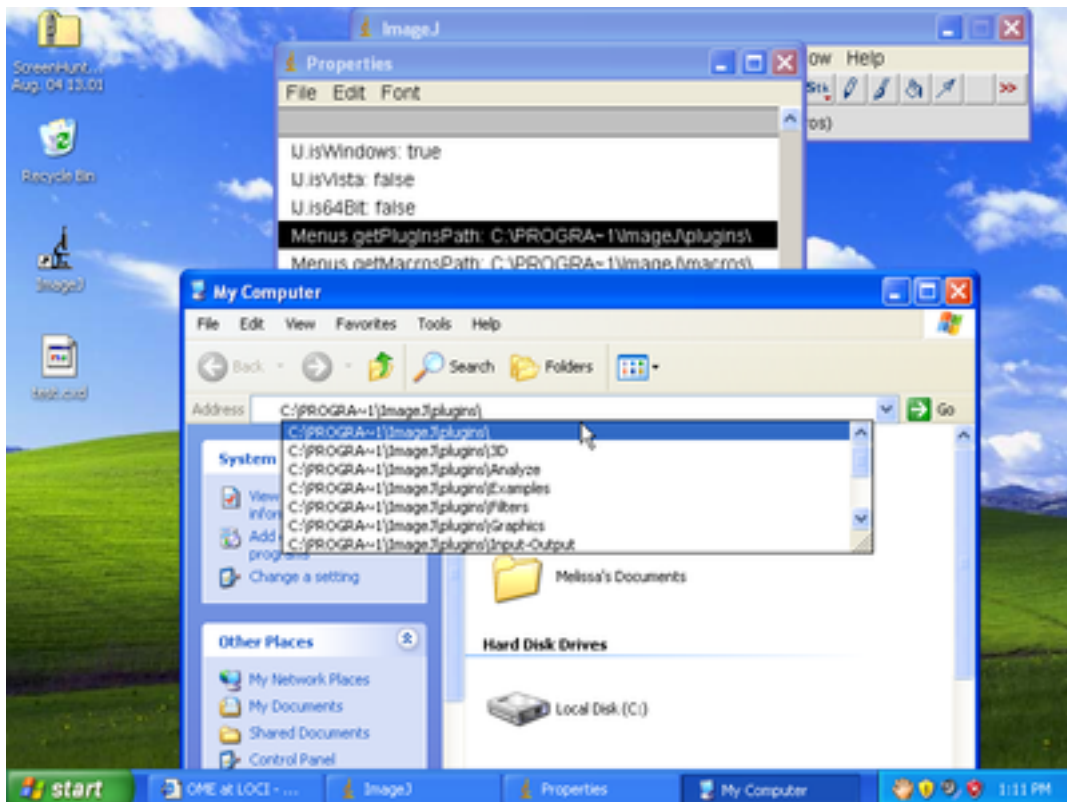
5) Scroll through the **Properties** window until you find a line that starts with “`Menus.getPluginsPath`” (highlighted).



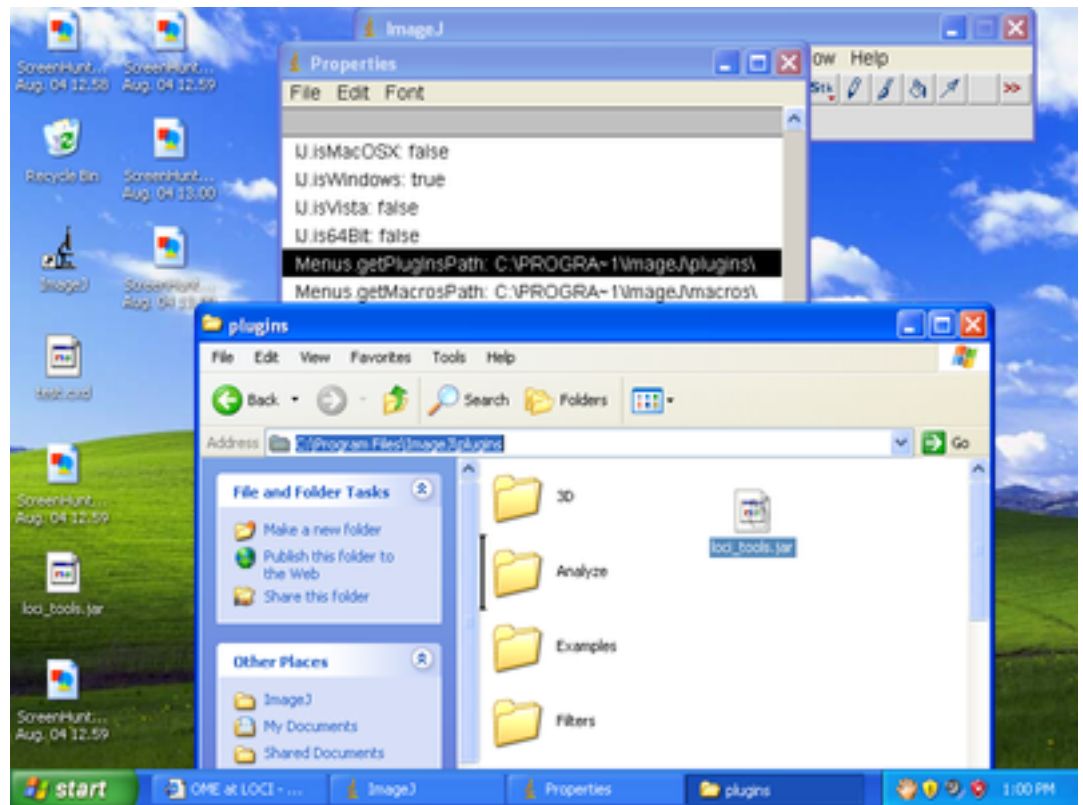
6) Leaving ImageJ and the Properties window open, click the **Start** button, then **My Computer**.



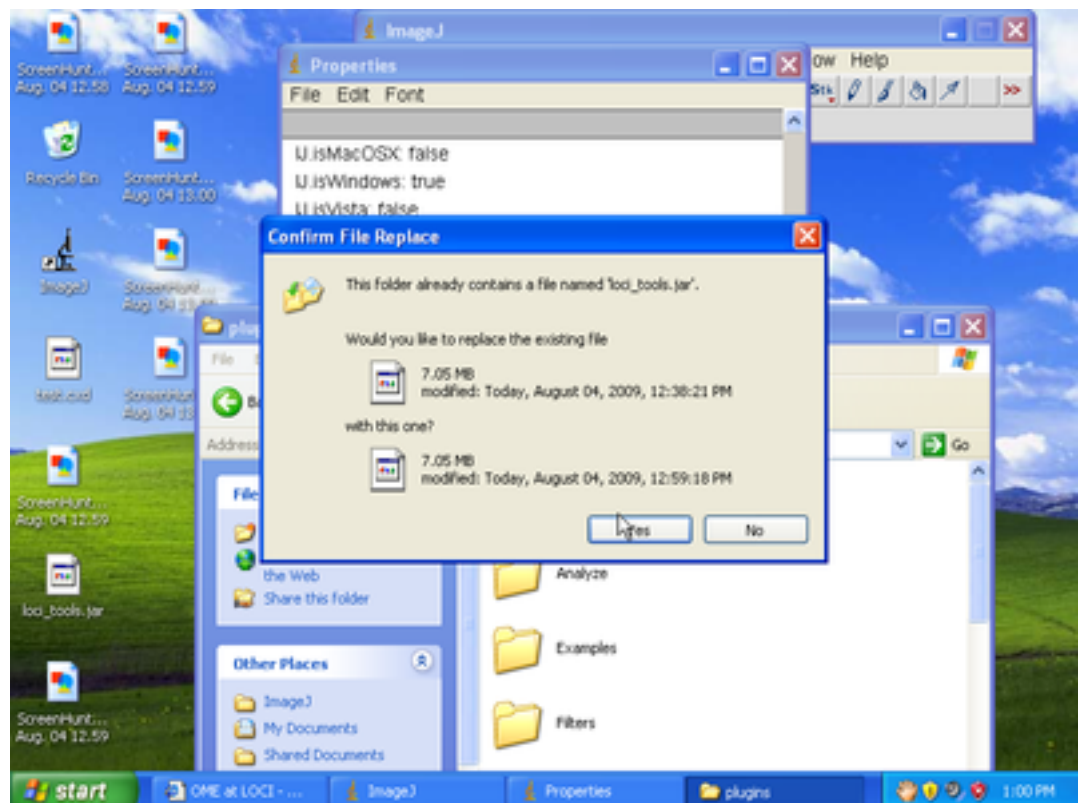
7) Type the path from step 5 into the address bar in the **My Computer** window, then hit the **Enter** key. The path should look something like this `C:\PROGRA~1\ImageJ\plugins\`



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”.



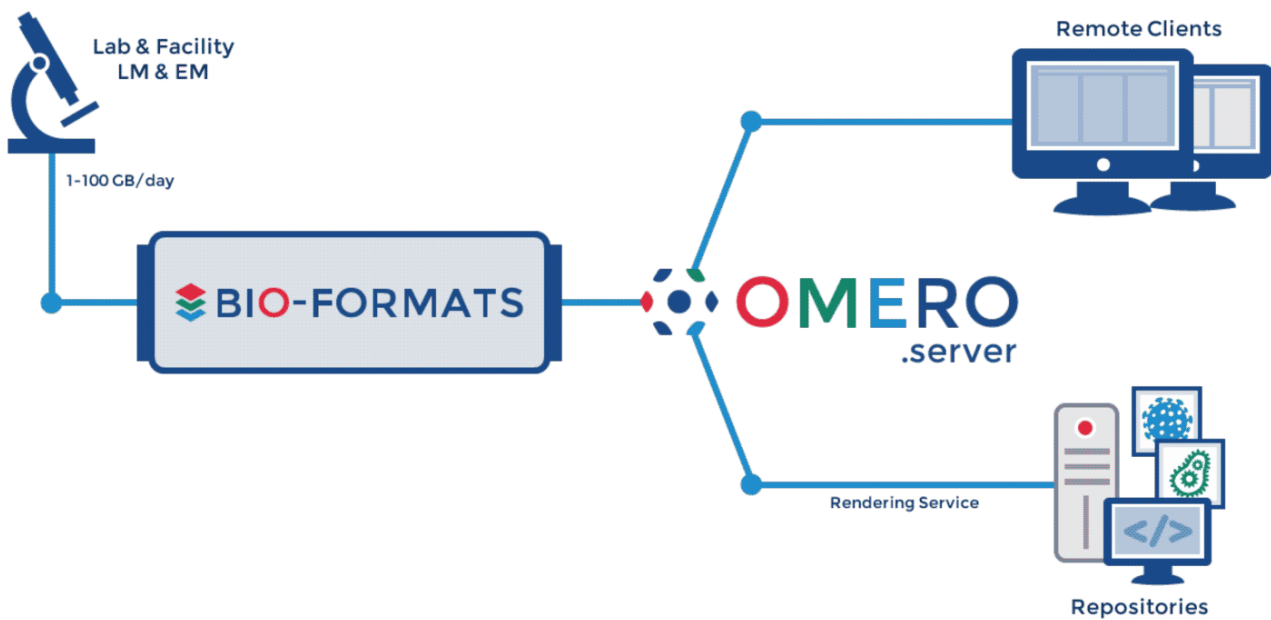
10. Close ImageJ.

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/omero4/>

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

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

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

³<http://www.openmicroscopy.org/site/support/omero4/>

⁴<http://cvs.openmicroscopy.org.uk/>

- BMP
- 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.

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

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

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:

- `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.

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

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

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

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

8.2 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

8.4 ImgLib

ImgLib¹⁶ 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.

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>

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>

8.5 ITK

The [Insight Toolkit](http://itk.org/)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](https://github.com/scifio/scifio-imageio)²¹ plugin provides an for ITK imageIO base that uses [Bio-Formats](http://farsight-toolkit.org/wiki/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](http://www.cmake.org/)²³ installed, to allow the configuration of ITK builds. If you want the latest ITK development build, you will need [Git](http://www.git-scm.com/)²⁴ as well.

8.5.2 Installation

Simply download ITK from the [Kitware software page](http://www.kitware.com/)²⁵. Using CMake, set the following configuration flag:

(NOTE: this flag is only visible in “advanced” mode within CMake)

- `Fetch_SCIFIO = ON`

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. 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.

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 [RGB](http://www.itk.org/Doxygen/html/classitk_1_1RGBPixel.html)²⁶ types
- `itkVectorImageSCIFIOImageIOTest` - Same as `itkSCIFIOImageIOTest` but for [VectorImage](http://www.itk.org/Doxygen/html/classitk_1_1VectorImage.html)²⁷ type

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>

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

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

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

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

8.5.3 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.

²⁸<http://www.itk.org/ITK/help/mailing.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 the `M` files⁹ and `loci_tools.jar`¹⁰ and place them in your MATLAB work directory.

9.3.2 Usage

Please see the *Bio-Formats MATLAB Guide* 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*¹¹ 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/>
- <http://www.mathworks.com/matlabcentral/fileexchange/32920-imread-for-multiple-life-science-image-file-formats>

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

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

¹¹<http://downloads.openmicroscopy.org/bio-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 7.2², 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

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/>

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 Vorregaard⁸.

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 4.4. version of the **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-Formats*¹⁷ 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.

⁸<http://www.comstat.dk/>

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/>

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.

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 download²⁵

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

¹⁸<http://www.lemkesoft.com>

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/>

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.

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 one³². 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.

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

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

³¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/utills/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/>

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.

10.14 XuvTools

[XuvTools](#)³⁹ is automated 3D stitching software for biomedical image data. As of release 1.8.0, XuvTools uses Bio-Formats to read image data.

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

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.tif
```

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.jar](#)¹ 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 **SLF4J**² 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.jar ⁴	Apache	For OLE-based formats (zvi, oib, ipw, cxd)
MDB Tools project ⁵ Java port, LOCI fork	mdbtools-java.jar ⁶	LGPL	For Olympus CellR and Zeiss LSM metadata (mdb)
JAI Image I/O Tools ⁷ pure Java implementation, LOCI fork	jai_imageio.jar ⁸	BSD	For JPEG2000-based formats (nd2, jp2)
NetCDF Java library ⁹	netcdf-4.0.jar ¹⁰	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 file](#)¹² for a complete and up-to-date list of all optional libraries, which can all be found in our [Git repository](#)¹³.

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-4.0.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/utis/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
reader.setMetadataStore(MetadataTools.createOMEXMLMetadata());
// initialize the dataset
reader.setId("/path/to/file");
```

Now, we set up our writer:

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

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

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

²⁰https://github.com/openmicroscopy/bioformats/blob/develop/components/loci-plugins/utis/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/>

```
// 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:

```

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 *

```

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

export&component=Bio-

```

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 we 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).

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.

Accessing planes

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

```
data = bfopen('/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:

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

```

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 `b fopen`.
- **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 `b fopen`, and contains common metadata values such as physical pixel sizes, instrument settings, and much more. See the [OME Model and Formats²⁶](#) documentation for full details.

Original metadata To retrieve the metadata value for specific keys:

```

data = b fopen('/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 = b fopen('/path/to/data/file');
metadata = data{1, 2};
metadataKeys = metadata.keySet().iterator();
for i=1:metadata.size()

```

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

```

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 = bfoopen('/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 [MetadataRetrieve²⁷](#) 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 `bfoopen.m28` 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.m29` function:

```
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.m30` 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.m31` function.

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

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/bfoopen.m>

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

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>

```
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 [MetadataStore³²](#) Javadoc page.

12.2.5 Source code

If you are interested in the latest Bio-Formats source code from our [Git³³](#) repository, you can access it using the repository path:

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

You can also browse the [Bio-Formats source on GitHub³⁴](#)

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 online³⁵](#), or generate them yourself using the “docs” Ant target.

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<http://mxcl.github.com/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

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/common/src/loci/common/RandomAccessInputStream.java>

¹⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/common/src/loci/common/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

- `loci.common.RandomAccessInputStream`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.
- `loci.formats.Location`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`²¹ for additional information.
- `loci.common.DataTools`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`²³ provides several methods for manipulating primitive type arrays that represent images. Consult the source or `Javadocs` 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/common/src/loci/common/RandomAccessInputStream.java>

²⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/common/src/loci/common/Location.java>

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

²²<https://github.com/openmicroscopy/bioformats/blob/develop/components/common/src/loci/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`¹ folder, with some components further classified into `components/forks`², `components/legacy`³, `components/native`⁴ or `components/stubs`⁵, 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/legacy/>

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

⁵<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 usage⁶](#) 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:

init-version:

init-manifest-cp:
```

⁶<http://www.openmicroscopy.org/site/support/omero4/developers/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 [#4086⁷](#)).

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

⁷<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 ([Download⁸](#)) (*)

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

⁸http://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](#)⁹, [dependency inversion](#)¹⁰ or [component based design](#)¹¹.

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](#)¹² 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 #463¹³ and #464¹⁴.

16.4.2 Writing a service

- **Interface** – The basic form of a service is an interface which inherits from `loci.common.services.Service`¹⁵. Here is the very basic `OMENotesService`¹⁶ from the initial implementation in r5894:

⁹http://en.wikipedia.org/wiki/Dependency_injection

¹⁰http://en.wikipedia.org/wiki/Dependency_inversion_principle

¹¹http://en.wikipedia.org/wiki/Component-based_software_engineering

¹²http://en.wikipedia.org/wiki/Dependency_injection

¹³<http://trac.openmicroscopy.org.uk/ome/ticket/463>

¹⁴<http://trac.openmicroscopy.org.uk/ome/ticket/464>

¹⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/common/src/loci/common/services/Service.java>

¹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/common/src/loci/common/services/OMENotesService.java>

```
public interface OMENotesService extends Service {

    /**
     * Creates a new OME Notes instance.
     * @param filename Path to the file to create a Notes instance for.
     */
    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`, the implementation is this time in the legacy ome-notes component as `OMENotesServiceImpl`¹⁷:

```
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`¹⁸ via the `services.properties`¹⁹ 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
...
```

¹⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/legacy/ome-notes/src/loci/ome/notes/services/OMENotesServiceImpl.java>

¹⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/common/src/loci/common/services/ServiceFactory.java>

¹⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/common/src/loci/common/services/Service.java>

16.4.3 Using a service

```
OMENotesService service = null;
try {
    ServiceFactory factory = new ServiceFactory();
    service = factory.getInstance(OMENotesService.class);
}
catch (DependencyException de) {
    LOGGER.info("", de);
}
...
```

See open [Trac tickets for Bio-Formats²⁰](#) for information on work currently planned or in progress.

²⁰<https://trac.openmicroscopy.org.uk/ome/report/44>

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](#)²¹. If you have any questions, or would prefer not to use QA, please email the [ome-users mailing list](#)²². 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.

²¹<http://qa.openmicroscopy.org.uk/qa/upload/>

²²<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 NDPIIS	.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

Continued on next page

Table 17.1 – continued from previous page

Format name	File to choose	Structure of files
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
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

Continued on next page

Table 17.1 – continued from previous page

Format name	File to choose	Structure of files
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
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 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>Bitplane Imaris</i>	.ims	▲	▲	■	▼	▼	✖	✖
<i>Bruker MRI</i>	.ims	■	▲	▼	■	▼	✖	✖
<i>Burleigh</i>	.img	■	▼	▼	▼	▼	✖	✖
<i>Canon DNG</i>	.cr2, .crw	■	■	▼	▼	▼	✖	✖
<i>Cellomics</i>	.c01	▲	▼	▼	▼	▼	✖	✖
<i>cellSens VSI</i>	.vsi	▼	■	▼	▼	▼	✖	✖

Continued on next page

Table 18.1 – continued from previous page

Format	Extensions	Pixels	Metadata	Openness	Presence	Utility	Export	SCIFIO
<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>	.tiff	▲	■	■	▼	▼	✖	✖
<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>InCell 1000</i>	.xdce, .tif	▲	▲	■	▼	■	✖	✖
<i>InCell 3000</i>	.frm	■	▼	▼	▼	▼	✖	✖
<i>INR</i>	.inr	▲	■	▼	▼	▼	✖	✖
<i>IPLab</i>	.ipl	▲	▲	▲	▼	▼	✖	✖
<i>IPLab-Mac</i>	.ipm	▲	■	▲	▼	▼	✖	✖

Continued on next page

Table 18.1 – continued from previous page

Format	Extensions	Pixels	Metadata	Openness	Presence	Utility	Export	SCIFIO
<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>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>	.tif	▲	▲	▲	▼	▲	✖	✖
<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>	.tif	▲	▲	▼	▼	▼	✖	✖
<i>Nikon EZ-C1 TIFF</i>	.tif	▲	▲	▲	▼	▼	✖	✖
<i>Nikon NIS-Elements ND2</i>	.nd2	▲	▲	▼	▲	▲	✖	✖

Continued on next page

Table 18.1 – continued from previous page

Format	Extensions	Pixels	Metadata	Openness	Presence	Utility	Export	SCIFIO
<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.tif	▲	▲	▲	▼	▲	✓	✓
<i>OME-XML</i>	.ome	▲	▲	▲	▼	▲	✓	✓
<i>Oxford Instruments</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</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>	.xcd	▲	■	▲	▼	▼	✘	✘
<i>SimplePCI & HCIImage TIFF</i>	.tif	▲	■	▲	▼	■	✘	✘
<i>SM Camera</i>	.tif	■	▼	▼	▼	▼	✘	✘

Continued on next page

Table 18.1 – continued from previous page

Format	Extensions	Pixels	Metadata	Openness	Presence	Utility	Export	SCIFIO
<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>Velocity</i>	.mvd2	■	■	▼	▼	▼	✖	✖
<i>Velocity Library Clipping</i>	.acff	■	■	▼	▼	▼	✖	✖
<i>WA-TOP</i>	.wat	■	▼	▼	▼	▼	✖	✖
<i>Windows Bitmap</i>	.bmp	▲	▲	▼	▲	▼	✖	✓
<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 **127** 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:

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:

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>

Slidebook software overview⁵

18.2 Andor Bio-Imaging Division (ABD) TIFF

Extensions: .tif

Developer: Andor Bioimaging Department

Owner: Andor Technology⁶

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 AG⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *AIM*

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>


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 document¹¹ (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: 

Utility: 

Additional Information

Source Code: [AliconaReader.java](#)¹²

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>

¹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/AliconaReader.java>

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 Sciences¹³

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

18.6 Amira Mesh

Extensions: .am, .amiramesh, .grey, .hx, .labels

Developer: [Visage Imaging](#)¹⁶

Support

¹³<http://www.gelifesciences.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>

¹⁶<http://www.amiravis.com/>

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

We would like to have:

Ratings

Pixels: ▲

Metadata: ◻

Openness: ▲

Presence: ◻

Utility: ▼

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

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
- [KSquirrel](#)²⁴

We currently have:

- [a specification document](#)²⁵
- several APNG files


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [APNGReader.java](#)²⁶

Notes:

18.9 Aperio SVS TIFF

Extensions: .svs

Owner: [Aperio](#)²⁷

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

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

²⁷<http://www.aperio.com/>

SupportSCIFIO: Export: 






Officially Supported Versions: 8.0, 8.2, 9.0

Supported Metadata Fields: *Aperio SVS TIFF*

We currently have:

- many SVS datasets
- an SVS specification document
- the ability to generate additional SVS datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: *SVSReader.java*²⁸

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*²⁹

18.10 Applied Precision CellWorX

Extensions: .htd, .pnl

Developer: *Applied Precision*³⁰**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

²⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SVSReader.java>²⁹<http://www.aperio.com/#imagescope-request>³⁰<http://www.api.com>

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [CellWorxReader.java](#)³¹

Notes:

18.11 AVI (Audio Video Interleave)

Extensions: .avi

Developer: [Microsoft](#)³²**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *AVI (Audio Video Interleave)*

Freely Available Software:




- [AVI Reader plugin for ImageJ](#)³³
- [AVI Writer plugin for ImageJ](#)³⁴

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

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**³¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/CellWorxReader.java>³²<http://www.microsoft.com/>³³<http://rsb.info.nih.gov/ij/plugins/avi-reader.html>³⁴<http://rsb.info.nih.gov/ij/plugins/avi.html>

Source Code: [AVIReader.java](#)³⁵

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)
 - JPEG

See Also:

[AVI RIFF File Reference](#)³⁶ [AVI on Wikipedia](#)³⁷

18.12 Axon Raw Format

Extensions: .arf

Owner: [INDEC BioSystems](#)³⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Axon Raw Format*


We currently have:

- one ARF dataset
- a [specification document](#)³⁹

We would like to have:

- more ARF datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ARFReader.java](#)⁴⁰

Notes:

³⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/AVIReader.java>

³⁶<http://msdn2.microsoft.com/en-us/library/ms779636.aspx>

³⁷http://en.wikipedia.org/wiki/Audio_Video_Interleave

³⁸<http://www.indecbiosystems.com/>

³⁹http://www.indecbiosystems.com/imagingworkbench/ApplicationNotes/IWAppNote11-ARF_File_Format.pdf

⁴⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ARFReader.java>

18.13 BD Pathway

Extensions: .exp, .tif

Owner: [BD Biosciences](#)⁴¹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

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](#)⁴²

Notes:

18.14 Becker & Hickl SPCImage

Extensions: .sdt

Owner: [Becker-Hickl](#)⁴³

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*⁴⁴ software
- a large number of SDT datasets

⁴¹<http://www.bdbiosciences.com>

⁴²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BDReader.java>


⁴³<http://www.becker-hickl.de/>

⁴⁴<http://www.becker-hickl.de/software/tcspc/softwaretcspcspecial.htm>


- the ability to produce new datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [SDTReader.java](#)⁴⁵

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

18.15 Bio-Rad Gel

Extensions: .lsc

Owner: [Bio-Rad](#)⁴⁶

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](#)⁴⁷

Notes:

⁴⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SDTReader.java>

⁴⁶<http://www.bio-rad.com>

⁴⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BioRadGelReader.java>

18.16 Bio-Rad PIC

Extensions: .pic, .raw, .xml

Developer: Bio-Rad

Owner: Carl Zeiss, Inc.⁴⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Bio-Rad PIC*

Freely Available Software:


- Bio-Rad PIC reader plugin for ImageJ⁴⁹

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](#)⁵⁰

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 Imaris⁵¹
 - SVI Huygens⁵²

18.17 Bitplane Imaris

Extensions: .ims

Owner: Bitplane⁵³

Support

⁴⁸<http://www.zeiss.com/>

⁴⁹<http://rsb.info.nih.gov/ij/plugins/biorad.html>

⁵⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BioRadReader.java>

⁵¹<http://www.bitplane.com/>

⁵²<http://svi.nl/>

⁵³<http://www.bitplane.com/>

SCIFIO: Export: 

Officially Supported Versions: 2.7, 3.0, 5.5




Supported Metadata Fields: *Bitplane Imaris*

We currently have:

- an *Imaris (RAW) specification document*⁵⁴ (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*

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: *ImarisHDFReader.java*⁵⁵, *ImarisTiffReader.java*⁵⁶, *ImarisReader.java*⁵⁷

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)

18.18 Bruker MRI

Developer: *Bruker*⁵⁸**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *Bruker MRI*

Freely Available Software:

⁵⁴<http://flash.bitplane.com/support/faqs/faqsview.cfm?inCat=6&inQuestionID=104>⁵⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImarisHDFReader.java>⁵⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImarisTiffReader.java>⁵⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImarisReader.java>⁵⁸<http://www.bruker.com/>

- Bruker plugin for ImageJ⁵⁹


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](#)⁶⁰

Notes:


18.19 Burleigh

Extensions: .img

Owner: Burleigh Instruments

Support

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

⁵⁹<http://rsbweb.nih.gov/ij/plugins/bruker.html>

⁶⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BrukerReader.java>

Source Code: [BurleighReader.java](#)⁶¹

Notes:


18.20 Canon DNG

Extensions: .cr2, .crw

Developer: [Canon](#)⁶²

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Canon DNG*

Freely Available Software:

- [IrfanView](#)⁶³


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: [DNGReader.java](#)⁶⁴

Notes:

18.21 Cellomics

Extensions: .c01

Developer: [Thermo Fisher Scientific](#)⁶⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Cellomics*

⁶¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/BurleighReader.java>

⁶²<http://canon.com>

⁶³<http://www.irfanview.com/>

⁶⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/DNGReader.java>

⁶⁵<http://www.thermofisher.com/>


We currently have:


- a few Cellomics .c01 datasets


We would like to have:


- a Cellomics .c01 specification document
- more Cellomics .c01 datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [CellomicsReader.java](#)⁶⁶

Notes:

18.22 cellSens VSI

Extensions: .vsi

Developer: [Olympus](#)⁶⁷

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](#)⁶⁸

Notes:

⁶⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/CellomicsReader.java>

⁶⁷<http://www.olympus.com/>

⁶⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/CellSensReader.java>

18.23 DeltaVision

Extensions: .dv, .r3d

Owner: Applied Precision⁶⁹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *DeltaVision*

Freely Available Software:

- [DeltaVision Opener plugin for ImageJ](#)⁷⁰

Sample Datasets:


- [Applied Precision Datasets](#)⁷¹

We currently have:

- a DV specification document (v2.10 or newer, in HTML)
- numerous DV datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [DeltavisionReader.java](#)⁷²

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 DeltaVision include:
 - [Bitplane Imaris](#)⁷³
 - [SVI Huygens](#)⁷⁴
 - [Image-Pro Plus](#)⁷⁵

See Also:

[DeltaVision system description](#)⁷⁶

⁶⁹<http://www.api.com/>

⁷⁰<http://rsb.info.nih.gov/ij/plugins/track/delta.html>

⁷¹<http://www.api.com/downloads/software/softworxexplorer2.0/SampleImages.zip>

⁷²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/DeltavisionReader.java>

⁷³<http://www.bitplane.com/>

⁷⁴<http://svi.nl/>

⁷⁵<http://www.mediacy.com/>

⁷⁶<http://api.com/deltavision.asp>

18.24 DICOM

Extensions: .dcm, .dicom

Developer: National Electrical Manufacturers Association⁷⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *DICOM*

Freely Available Software:

- OsiriX Medical Imaging Software⁷⁸
- ezDICOM⁷⁹
- Wikipedia's list of freeware health software⁸⁰

Sample Datasets:


- MRI Chest from FreeVol-3D web site⁸¹
- Medical Image Samples from Sebastien Barre's Medical Imaging page⁸²
- DICOM sample image sets from OsiriX web site⁸³

We currently have:

- DICOM specification documents⁸⁴ (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: 

Additional Information

Source Code: [DicomReader.java](#)⁸⁵

Notes:

- DICOM stands for “Digital Imaging and Communication in Medicine”.
- Bio-Formats supports both compressed and uncompressed DICOM files.

See Also:

[DICOM homepage](#)⁸⁶

⁷⁷<http://www.nema.org/>

⁷⁸<http://www.osirix-viewer.com/>

⁷⁹<http://www.sph.sc.edu/comd/rorden/ezdicom.html>

⁸⁰http://en.wikipedia.org/wiki/List_of_freeware_health_software#Imaging.2FVisualization

⁸¹http://members.tripod.com/%7Eclunis_immensus/free3d/hk-40.zip

⁸²<http://www.barre.nom.fr/medical/samples/>

⁸³<http://osirix-viewer.com/datasets/>

⁸⁴<http://medical.nema.org/dicom/2007/>

⁸⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/DicomReader.java>

⁸⁶<http://medical.nema.org/>

18.25 ECAT7

Extensions: .v

Developer: Siemens⁸⁷

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*⁸⁸

Notes:

18.26 EPS (Encapsulated PostScript)

Extensions: .eps, .epsi, .ps

Developer: Adobe⁸⁹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *EPS (Encapsulated PostScript)*

Freely Available Software:

- *EPS Writer plugin for ImageJ*⁹⁰

We currently have:

- a few EPS datasets

⁸⁷<http://www.siemens.com>

⁸⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/Ecat7Reader.java>


⁸⁹<http://www.adobe.com/>

⁹⁰<http://rsb.info.nih.gov/ij/plugins/eps-writer.html>


- the ability to produce new datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [EPSReader.java](#)⁹¹ Source Code: [EPSWriter.java](#)⁹²

Notes:

- Bio-Formats can save individual planes as EPS.
- Certain types of compressed EPS files are not supported.

18.27 Evotec/PerkinElmer Opera Flex

Extensions: .flex, .mea, .res

Developer: [Evotec Technologies](#), now [PerkinElmer](#)⁹³

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


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [FlexReader.java](#)⁹⁴

Notes:

The LuraWave LWF decoder library (i.e. lwf_jsdk2.6.jar) with license code is required to decode wavelet-compressed Flex files.

⁹¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/EPSReader.java>

⁹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/EPSWriter.java>

⁹³<http://www.perkinelmer.com/>

⁹⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FlexReader.java>

See Also:

LuraTech (developers of the proprietary LuraWave LWF compression used for Flex image planes)⁹⁵

18.28 FEI

Extensions: .img

Developer: FEI⁹⁶

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


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [FEIReader.java](#)⁹⁷

Notes:


18.29 FEI TIFF

Extensions: .tiff

Developer: FEI⁹⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *FEI TIFF*

We currently have:

⁹⁵<http://www.luratech.com/>

⁹⁶<http://www.fei.com/>


⁹⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FEIReader.java>

⁹⁸<http://www.fei.com>


- a few FEI TIFF datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [FEITiffReader.java](#)⁹⁹

Notes:

18.30 FITS (Flexible Image Transport System)

Extensions: .fits

Developer: [National Radio Astronomy Observatory](#)¹⁰⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *FITS (Flexible Image Transport System)*

We currently have:

- a [FITS specification document](#)¹⁰¹ (NOST 100-2.0, from 1999 March 29, in HTML)
- several FITS datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [FitsReader.java](#)¹⁰²

Notes:

See Also:

[MAST:FITS homepage](#)¹⁰³ [FITS Support Office](#)¹⁰⁴

⁹⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FEITiffReader.java>

¹⁰⁰<http://www.nrao.edu/>

¹⁰¹http://archive.stsci.edu/fits/fits_standard/

¹⁰²<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/FitsReader.java>

¹⁰³<http://archive.stsci.edu/fits/>

¹⁰⁴<http://fits.gsfc.nasa.gov/>

18.31 Gatan Digital Micrograph

Extensions: .dm3

Owner: [Gatan](#)¹⁰⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions: 3

Supported Metadata Fields: *Gatan Digital Micrograph*

Freely Available Software:

- [DM3 Reader plugin for ImageJ](#)¹⁰⁶
- [EMAN](#)¹⁰⁷


We currently have:

- Gatan's ImageReader2003 code (from 2003, in C++)
- numerous DM3 datasets


We would like to have:


- a DM3 specification document


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [GatanReader.java](#)¹⁰⁸

Notes:

Commercial applications that support .dm3 files include [Datasqueeze](#)¹⁰⁹.

18.32 Gatan Digital Micrograph 2

Extensions: .dm2

Developer: [Gatan](#)¹¹⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions: 2

¹⁰⁵<http://www.gatan.com/>

¹⁰⁶http://rsb.info.nih.gov/ij/plugins/DM3_Reader.html

¹⁰⁷<http://blake.bcm.edu/EMAN/>

¹⁰⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/GatanReader.java>

¹⁰⁹<http://www.datasqueezesoftware.com/>

¹¹⁰<http://www.gatan.com>

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](#)¹¹¹

Notes:

18.33 GIF (Graphics Interchange Format)

Extensions: .gif

Developer: [CompuServe](#)¹¹²

Owner: [Unisys](#)¹¹³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *GIF (Graphics Interchange Format)*

Freely Available Software:

- [Animated GIF Reader plugin for ImageJ](#)¹¹⁴
- [GIF Stack Writer plugin for ImageJ](#)¹¹⁵

We currently have:

- a [GIF specification document](#)¹¹⁶ (Version 89a, from 1990, in HTML)
- numerous GIF datasets
- the ability to produce new datasets

¹¹¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/GatanDM2Reader.java>

¹¹²<http://www.compuserve.com/>

¹¹³<http://www.unisys.com/>


¹¹⁴<http://rsb.info.nih.gov/ij/plugins/agr.html>


¹¹⁵<http://rsb.info.nih.gov/ij/plugins/gif-stack-writer.html>


¹¹⁶<http://tronche.com/computer-graphics/gif/>

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [GIFReader.java](#)¹¹⁷

Notes:

18.34 Hamamatsu Aquacosmos NAF

Extensions: .naf

Developer: [Hamamatsu](#)¹¹⁸

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: 

Presence: 

Utility: 

Additional Information

Source Code: [NAFReader.java](#)¹¹⁹

Notes:

¹¹⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/GIFReader.java>

¹¹⁸<http://www.hamamatsu.com/>

¹¹⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NAFReader.java>

18.35 Hamamatsu HIS

Extensions: .his

Owner: [Hamamatsu](#)¹²⁰

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


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [HISReader.java](#)¹²¹

Notes:

18.36 Hamamatsu ndpi

Extensions: .ndpi

Developer: [Hamamatsu](#)¹²²

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Hamamatsu ndpi*

Freely Available Software:

- [NDP.view](#)¹²³

Sample Datasets:

¹²⁰<http://www.hamamatsu.com>

¹²¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/HISReader.java>

¹²²<http://www.hamamatsu.com>

¹²³http://www.olympusamerica.com/seg_section/seg_vm_downloads.asp

- [OpenSlide](#)¹²⁴


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](#)¹²⁵

Notes:

18.37 Hamamatsu VMS

Extensions: .vms

Developer: [Hamamatsu](#)¹²⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Hamamatsu VMS*

Sample Datasets:

- [OpenSlide](#)¹²⁷

We currently have:

- a few example datasets
- [developer documentation from the OpenSlide project](#)¹²⁸

We would like to have:

- an official specification document
- more example datasets

Ratings

Pixels: 

Metadata: 

Openness: 


¹²⁴<http://openslide.cs.cmu.edu/download/openslide-testdata/Hamamatsu/>


¹²⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NDPIReader.java>

¹²⁶<http://www.hamamatsu.com>

¹²⁷<http://openslide.cs.cmu.edu/download/openslide-testdata/Hamamatsu-vms/>

¹²⁸<http://openslide.org/Hamamatsu%20format/>

Presence: 

Utility: 

Additional Information

Source Code: [HamamatsuVMSReader.java](#)¹²⁹

Notes:

18.38 Hitachi S-4800

Extensions: .txt, .tif, .bmp, .jpg

Developer: [Hitachi](#)¹³⁰

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](#)¹³¹

Notes:

18.39 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:

¹²⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/HamamatsuVMSReader.java>

¹³⁰http://www.hitachi-hita.com/sites/default/files/technotes/Hitachi_4800_STEM.pdf

¹³¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/HitachiReader.java>


- Libics (ICS reference library)¹³²
- ICS Opener plugin for ImageJ¹³³
- IrfanView¹³⁴


We currently have:


- numerous ICS datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ICSReader.java](#)¹³⁵ Source Code: [ICSWriter.java](#)¹³⁶

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 Imaris¹³⁷
- SVI Huygens¹³⁸

18.40 Imacon

Extensions: .fff

Owner: [Hasselblad](#)¹³⁹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Imacon*

We currently have:

- one Imacon file

We would like to have:

- more Imacon files

¹³²<http://libics.sourceforge.net/>

¹³³http://valelab.ucsf.edu/%7Enstuurman/IJplugins/Ics_Opener.html

¹³⁴<http://www.irfanview.com/>






¹³⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/ICSReader.java>

¹³⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/ICSWriter.java>

¹³⁷<http://www.bitplane.com/>

¹³⁸<http://svi.nl/>

¹³⁹<http://www.hasselbladusa.com/>

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [ImaconReader.java](#)¹⁴⁰

Notes:

18.41 ImagePro Sequence

Extensions: .seq

Owner: [Media Cybernetics](#)¹⁴¹**Support**SCIFIO: Export: 

Officially Supported Versions:



Supported Metadata Fields: *ImagePro Sequence*

We currently have:

- the [Image-Pro Plus](#)¹⁴² software
- a few SEQ datasets
- the ability to produce more datasets

We would like to have:

- an official SEQ specification document

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [SEQReader.java](#)¹⁴³

Notes:

¹⁴⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImaconReader.java>¹⁴¹<http://www.mediacy.com/>¹⁴²<http://www.mediacy.com/index.aspx?page=IPP>¹⁴³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SEQReader.java>

18.42 ImagePro Workspace

Extensions: .ipw

Owner: Media Cybernetics¹⁴⁴

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

Supported Metadata Fields: *ImagePro Workspace*

We currently have:

- the *Image-Pro Plus*¹⁴⁵ 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

Ratings

Pixels: ▲

Metadata: ▲

Openness: ▼

Presence: ▼

Utility: ▼

Additional Information

Source Code: *IPWReader.java*¹⁴⁶

Notes:

Bio-Formats uses a modified version of the *Apache Jakarta POI*¹⁴⁷ library to read IPW files.

18.43 IMAGIC

Extensions: .hed, .img

Developer: Image Science¹⁴⁸

Support

SCIFIO: ❌

Export: ❌

Officially Supported Versions:

¹⁴⁴<http://www.mediacy.com/>

¹⁴⁵<http://www.mediacy.com/index.aspx?page=IPP>

¹⁴⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/IPWReader.java>

¹⁴⁷<http://jakarta.apache.org/poi/>

¹⁴⁸<http://www.imagescience.de>

Supported Metadata Fields: *IMAGIC*

Freely Available Software:

- [em2em](#)¹⁴⁹


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](#)¹⁵⁰

Notes:

See Also:

[IMAGIC specification](#)¹⁵¹

18.44 IMOD

Extensions: `.mod`

Developer: [Boulder Laboratory for 3-Dimensional Electron Microscopy of Cells](#)¹⁵²

Owner: [Boulder Laboratory for 3-Dimensional Electron Microscopy of Cells](#)¹⁵³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *IMOD*

Freely Available Software:

- [IMOD](#)¹⁵⁴

We currently have:

- a few sample datasets
- [official documentation](#)¹⁵⁵

¹⁴⁹<http://www.imagescience.de/em2em.html>

¹⁵⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImagicReader.java>

¹⁵¹<http://www.imagescience.de/em2em.html>

¹⁵²<http://bio3d.colorado.edu>


¹⁵³<http://bio3d.colorado.edu>

¹⁵⁴<http://bio3d.colorado.edu/imod/>


¹⁵⁵<http://bio3d.colorado.edu/imod/doc/binspec.html>


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [IMODReader.java](#)¹⁵⁶

Notes:

18.45 Improvission Openlab LIFF

Extensions: .liff

Developer: [Improvission](#)¹⁵⁷

Owner: [PerkinElmer](#)¹⁵⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions: 2.0, 5.0

Supported Metadata Fields: *Improvission Openlab LIFF*


We currently have:

- an Openlab specification document (from 2000 February 8, in DOC)
- Improvission'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: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [OpenlabReader.java](#)¹⁵⁹

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

¹⁵⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/IMODReader.java>

¹⁵⁷<http://www.improvission.com/>

¹⁵⁸<http://www.perkinelmer.com/>

¹⁵⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/OpenlabReader.java>

See Also:

[Openlab software review](#)¹⁶⁰

18.46 Improvition Openlab Raw

Extensions: .raw

Developer: [Improvition](#)¹⁶¹

Owner: [PerkinElmer](#)¹⁶²

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Improvition Openlab Raw*

We currently have:


- an [Openlab Raw specification document](#)¹⁶³ (from 2004 November 09, in HTML)
- a few Openlab Raw datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [OpenlabRawReader.java](#)¹⁶⁴

Notes:

See Also:

[Openlab software review](#)¹⁶⁵

18.47 Improvition TIFF

Extensions: .tif

Developer: [Improvition](#)¹⁶⁶

Owner: [PerkinElmer](#)¹⁶⁷

Support

¹⁶⁰<http://www.improvition.com/products/openlab/>

¹⁶¹<http://www.improvition.com/>

¹⁶²<http://www.perkinelmer.com/>

¹⁶³http://cellularimaging.perkinelmer.com/support/technical_notes/detail.php?id=344

¹⁶⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/OpenlabRawReader.java>

¹⁶⁵<http://www.improvition.com/products/openlab/>

¹⁶⁶<http://www.improvition.com/>

¹⁶⁷<http://www.perkinelmer.com/>

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *Improvision TIFF*

We currently have:


- an Improvision TIFF specification document
- a few Improvision TIFF datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ImprovisionTiffReader.java](#)¹⁶⁸

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](#)¹⁶⁹

18.48 InCell 1000

Extensions: .xdce, .tif

Developer: [GE](#)¹⁷⁰

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

¹⁶⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ImprovisionTiffReader.java>

¹⁶⁹<http://www.improvision.com/products/openlab/>

¹⁷⁰<http://gelifesciences.com/>

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [InCellReader.java](#)¹⁷¹

Notes:

18.49 InCell 3000

Extensions: .frm

Developer: [GE](#)¹⁷²**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *InCell 3000*

Sample Datasets:




- [Broad Bioimage Benchmark Collection](#)¹⁷³

We currently have:

- a few example datasets

We would like to have:

- an official specification document

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [InCell3000Reader.java](#)¹⁷⁴

Notes:

¹⁷¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/InCellReader.java>¹⁷²<http://gelifesciences.com/>¹⁷³<http://www.broadinstitute.org/bbbc/BBBC013/>¹⁷⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/InCell3000Reader.java>

18.50 INR

Extensions: .inr

Support

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *INR*

We currently have:


- several sample .inr datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [INRReader.java](#)¹⁷⁵

Notes:

18.51 IPLab

Extensions: .ipl

Developer: Scanalytics

Owner: was [BD Biosystems](#)¹⁷⁶, now [BioVision Technologies](#)¹⁷⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *IPLab*

Freely Available Software:

- [IPLab Reader plugin for ImageJ](#)¹⁷⁸

We currently have:

- an IPLab specification document (v3.6.5, from 2004 December 1, in PDF)
- several IPLab datasets

We would like to have:

¹⁷⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/INRReader.java>


¹⁷⁶<http://www.bdbiosciences.com/>


¹⁷⁷<http://www.biovis.com/iplab.htm>


¹⁷⁸<http://rsb.info.nih.gov/ij/plugins/iplab-reader.html>


- more IPLab datasets (preferably with 32-bit integer or floating point data)


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [IPLabReader.java](#)¹⁷⁹

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](#)¹⁸⁰
- [SVI Huygens](#)¹⁸¹

See Also:

[IPLab software review](#)¹⁸²

18.52 IPLab-Mac

Extensions: .ipm

Owner: [BioVision Technologies](#)¹⁸³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

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: 


¹⁷⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/IPLabReader.java>

¹⁸⁰<http://www.bitplane.com/>

¹⁸¹<http://svi.nl/>

¹⁸²<http://www.biovis.com/iplab.htm>

¹⁸³<http://biovis.com/>

Utility: **Additional Information**Source Code: [IvisionReader.java](#)¹⁸⁴

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

18.53 JEOL

Extensions: .dat, .img, .par

Owner: [JEOL](#)¹⁸⁵**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

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [JEOLReader.java](#)¹⁸⁶

Notes:

18.54 JPEG

Extensions: .jpg

Developer: [Independent JPEG Group](#)¹⁸⁷**Support**SCIFIO: ¹⁸⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/IvisionReader.java>¹⁸⁵<http://www.jeol.com>¹⁸⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/JEOLReader.java>¹⁸⁷<http://www.ijg.org/>

Export: 

Officially Supported Versions:


Supported Metadata Fields: *JPEG*

We currently have:

- a [JPEG specification document](#)¹⁸⁸ (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](#)¹⁸⁹ Source Code: [JPEGWriter.java](#)¹⁹⁰

Notes:

Bio-Formats can save individual planes as JPEG. Bio-Formats uses the [Java Image I/O](#)¹⁹¹ API to read and write JPEG files. JPEG stands for “Joint Photographic Experts Group”.

See Also:

[JPEG homepage](#)¹⁹²

18.55 JPEG 2000

Extensions: .jp2

Developer: [Independent JPEG Group](#)¹⁹³

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *JPEG 2000*

Freely Available Software:

- [JJ2000 \(JPEG 2000 library for Java\)](#)¹⁹⁴

We currently have:

- a [JPEG 2000 specification document](#)¹⁹⁵ (final draft, from 2000, in PDF)

¹⁸⁸<http://www.w3.org/Graphics/JPEG/jfif3.pdf>

¹⁸⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/JPEGReader.java>

¹⁹⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/JPEGWriter.java>

¹⁹¹<http://java.sun.com/j2se/1.4.2/docs/guide/imageio/index.html>

¹⁹²<http://www.jpeg.org/jpeg/index.html>

¹⁹³<http://www.ijg.org/>


¹⁹⁴<http://code.google.com/p/jj2000/>


¹⁹⁵<http://www.jpeg.org/jpeg2000/CDs15444.html>


- a few .jp2 files


We would like to have:

Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [JPEG2000Reader.java](#)¹⁹⁶ Source Code: [JPEG2000Writer.java](#)¹⁹⁷

Notes:

Bio-Formats uses the [JAI Image I/O Tools](#)¹⁹⁸ library to read JP2 files. JPEG stands for “Joint Photographic Experts Group”.

18.56 JPK

Extensions: .jpk

Developer: [JPK Instruments](#)¹⁹⁹

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
- more JPK files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [JPKReader.java](#)²⁰⁰

¹⁹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/JPEG2000Reader.java>

¹⁹⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/JPEG2000Writer.java>

¹⁹⁸<https://java.net/projects/jai-imageio>

¹⁹⁹<http://www.jpk.com>

²⁰⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/JPKReader.java>

Notes:

18.57 JPX

Extensions: .jpx

Developer: JPEG Committee²⁰¹

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.java²⁰²

Notes:

18.58 Khoros VIFF (Visualization Image File Format) Bitmap

Extensions: .xv

Developer: Khoral²⁰³

Owner: AccuSoft²⁰⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Khoros VIFF (Visualization Image File Format) Bitmap*

Sample Datasets:

- VIFF Images²⁰⁵

We currently have:

²⁰¹<http://www.jpeg.org/jpeg2000/>

²⁰²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/JPXReader.java>

²⁰³<http://www.khoral.com/company/>

²⁰⁴<http://www.accusoft.com/company/>


²⁰⁵<http://netghost.narod.ru/gff/sample/images/viff/index.htm>


- several VIFF datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [KhorosReader.java](#)²⁰⁶

Notes:

See Also:

[VisiQuest software overview \(formerly known as KhorosPro\)](#)²⁰⁷

18.59 Kodak BIP

Extensions: .bip

Developer: [Kodak/Carestream](#)²⁰⁸

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


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [KodakReader.java](#)²⁰⁹

Notes:

See Also:

²⁰⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/KhorosReader.java>

²⁰⁷<http://www.accusoft.com/products/visiquest/>

²⁰⁸<http://carestream.com>

²⁰⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/KodakReader.java>

Information on Image Station systems²¹⁰

18.60 Lambert Instruments FLIM

Extensions: .fli

Developer: Lambert Instruments²¹¹

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:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: *LiFlimReader.java*²¹²

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

18.61 Leica LCS LEI

Extensions: .lei, .tif

Developer: Leica Microsystems CMS GmbH²¹³

Owner: Leica²¹⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Leica LCS LEI*

Freely Available Software:

²¹⁰<http://carestream.com/PublicContent.aspx?langType=1033&id=448953>

²¹¹<http://www.lambert-instruments.com>

²¹²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LiFlimReader.java>

²¹³<http://www.leica-microsystems.com/>

²¹⁴<http://www.leica.com/>


- [Leica LCS Lite](#)²¹⁵

We currently have:


- an LEI specification document (beta 2.000, from no later than 2004 February 17, in PDF)
- many LEI datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [LeicaReader.java](#)²¹⁶

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](#)²¹⁷
- [SVI Huygens](#)²¹⁸
- [Image-Pro Plus](#)²¹⁹

18.62 Leica LAS AF LIF (Leica Image File Format)

Extensions: .lif

Developer: [Leica Microsystems CMS GmbH](#)²²⁰

Owner: [Leica](#)²²¹

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](#)²²² (links at bottom of page)

We currently have:

- a LIF specification document (version 2, from no later than 2007 July 26, in PDF)

²¹⁵<ftp://ftp.llt.de/softlib/LCSLite/LCSLite2611537.exe>

²¹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LeicaReader.java>

²¹⁷<http://www.bitplane.com/>

²¹⁸<http://svi.nl/>

²¹⁹<http://www.mediacy.com/>

²²⁰<http://www.leica-microsystems.com/>


²²¹<http://www.leica.com/>

²²²<http://www.leica-microsystems.com/products/microscope-imaging-software/life-sciences/las-af-advanced-fluorescence/>


- 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: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [LIFReader.java](#)²²³

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 Imaris](#)²²⁴
- [SVI Huygens](#)²²⁵
- [Amira](#)²²⁶

18.63 Leica SCN

Extensions: .scn

Developer: [Leica Microsystems](#)²²⁷

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

Ratings

Pixels: 

Metadata: 

Openness: 



²²³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LIFReader.java>

²²⁴<http://www.bitplane.com/>

²²⁵<http://svi.nl/>

²²⁶<http://www.amira.com/>

²²⁷<http://www.leica-microsystems.com/>

Presence: Utility: **Additional Information**Source Code: [LeicaSCNReader.java](#)²²⁸

Notes:

18.64 LEO

Extensions: .sxm

Owner: [Zeiss](#)²²⁹**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

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [LEOReader.java](#)²³⁰

Notes:

18.65 Li-Cor L2D

Extensions: .l2d, .tif, .scn

Owner: [LiCor Biosciences](#)²³¹**Support**SCIFIO: ²²⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LeicaSCNReader.java>²²⁹<http://www.zeiss.de>²³⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LEOReader.java>²³¹<http://www.licor.com/>

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Li-Cor L2D*


We currently have:

- a few L2D datasets

We would like to have:


- an official specification document
- more L2D datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [L2DReader.java](#)²³²

Notes:

L2D datasets cannot be imported into OME using server-side import. They can, however, be imported from ImageJ, or using the omeul utility.

18.66 LIM (Laboratory Imaging/Nikon)

Extensions: .lim

Owner: [Laboratory Imaging](#)²³³

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: 

²³²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/L2DReader.java>

²³³<http://www.lim.cz/>

Presence: 

Utility: 

Additional Information

Source Code: [LIMReader.java](#)²³⁴

Notes:

Bio-Formats only supports uncompressed LIM files.

Commercial applications that support LIM include:

- NIS Elements²³⁵

18.67 MetaMorph 7.5 TIFF

Extensions: .tiff

Owner: [Molecular Devices](#)²³⁶

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](#)²³⁷

Notes:

18.68 MetaMorph Stack (STK)

Extensions: .stk, .nd

Owner: [Molecular Devices](#)²³⁸

Support

SCIFIO: 

²³⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/LIMReader.java>

²³⁵<http://www.nis-elements.com/>

²³⁶<http://www.moleculardevices.com/>

²³⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MetamorphTiffReader.java>

²³⁸<http://www.moleculardevices.com/>

Export: 

Officially Supported Versions:


Supported Metadata Fields: *MetaMorph Stack (STK)*

We currently have:


- an STK specification document (from 2006 November 21, in DOC)
- 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](#)²³⁹

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 Imaris²⁴⁰
- SVI Huygens²⁴¹
- DIMIN²⁴²

See Also:

[Metamorph imaging system overview](#)²⁴³

18.69 MIAS (Maia Scientific)

Extensions: .tif

Developer: [Maia Scientific](#)²⁴⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *MIAS (Maia Scientific)*

We currently have:

²³⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MetamorphReader.java>

²⁴⁰<http://www.bitplane.com/>

²⁴¹<http://svi.nl/>

²⁴²<http://dimin.net/>


²⁴³<http://www.metamorph.com/>


²⁴⁴<http://www.maia-scientific.com/>


- several MIAS datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [MIASReader.java](#)²⁴⁵

Notes:

18.70 Micro-Manager

Extensions: .tif, .txt, .xml

Developer: [Vale Lab](#)²⁴⁶

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Micro-Manager*

Freely Available Software:


- [Micro-Manager](#)²⁴⁷

We currently have:

- many Micro-manager datasets

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [MicromanagerReader.java](#)²⁴⁸

Notes:

²⁴⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MIASReader.java>

²⁴⁶<http://valelab.ucsf.edu/>

²⁴⁷<http://micro-manager.org/>

²⁴⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/MicromanagerReader.java>


18.71 MINC MRI

Extensions: .mnc

Developer: McGill University²⁴⁹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *MINC MRI*

Freely Available Software:


- [MINC](#)²⁵⁰

We currently have:

- a few MINC files

We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [MINCReader.java](#)²⁵¹

Notes:

18.72 Minolta MRW

Extensions: .mrw

Developer: Minolta²⁵²

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Minolta MRW*

Freely Available Software:

- [dcraw](#)²⁵³

We currently have:

- several .mrw files

²⁴⁹<http://www.bic.mni.mcgill.ca/ServicesSoftware/MINC>

²⁵⁰<http://www.bic.mni.mcgill.ca/ServicesSoftware/MINC>

²⁵¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MINCReader.java>

²⁵²<http://www.konicaminolta.com/>

²⁵³<http://www.cybercom.net/%7Edcoffin/dcraw/>

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

Source Code: [MRWReader.java](#)²⁵⁴

Notes:

See Also:

[Description of MRW format](#)²⁵⁵

18.73 MNG (Multiple-image Network Graphics)

Extensions: .mng

Developer: [MNG Development Group](#)²⁵⁶

Support

SCIFIO:

Export:

Officially Supported Versions:

Supported Metadata Fields: *MNG (Multiple-image Network Graphics)*

Freely Available Software:

- [libmng \(MNG reference library\)](#)²⁵⁷

Sample Datasets:

- [MNG sample files](#)²⁵⁸

We currently have:

- the [libmng-testsuites](#)²⁵⁹ package (from 2003 March 05, in C)
- a large number of MNG datasets

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

²⁵⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MRWReader.java>

²⁵⁵<http://www.dalibor.cz/files/MRW%20File%20Format.txt>

²⁵⁶<http://www.libpng.org/pub/mng/mngnews.html>

²⁵⁷<http://sourceforge.net/projects/libmng/>

²⁵⁸<http://sourceforge.net/projects/libmng/files/libmng-testsuites/MNGsuite-1.0/MNGsuite.zip/download>

²⁵⁹<http://downloads.sourceforge.net/libmng/MNGsuite-20030305.zip>

Additional Information

Source Code: [MNGReader.java](#)²⁶⁰

Notes:

See Also:

[MNG homepage](#)²⁶¹ [MNG specification](#)²⁶²


18.74 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](#)²⁶³

Notes:

18.75 MRC (Medical Research Council)

Extensions: .mrc

Developer: [MRC Laboratory of Molecular Biology](#)²⁶⁴

Support

SCIFIO: 

²⁶⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/MNGReader.java>

²⁶¹<http://www.libpng.org/pub/mng/>

²⁶²<http://www.libpng.org/pub/mng/spec>

²⁶³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MolecularImagingReader.java>

²⁶⁴<http://www2.mrc-lmb.cam.ac.uk/>

Export: 

Officially Supported Versions:

Supported Metadata Fields: *MRC (Medical Research Council)*

Sample Datasets:


- [golgi.mrc](#)²⁶⁵

We currently have:


- an [MRC specification document](#)²⁶⁶ (in HTML)
- another [MRC specification document](#)²⁶⁷ (in TXT)
- a few MRC datasets


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [MRCReader.java](#)²⁶⁸

Notes:

Commercial applications that support MRC include:

- [Bitplane Imaris](#)²⁶⁹

See Also:

[MRC on Wikipedia](#)²⁷⁰

18.76 NEF (Nikon Electronic Format)

Extensions: .nef, .tif

Developer: [Nikon](#)²⁷¹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *NEF (Nikon Electronic Format)*

Sample Datasets:

- [neffile1.zip](#)²⁷²

²⁶⁵http://bio3d.colorado.edu/imod/files/imod_data.tar.gz

²⁶⁶http://ami.scripps.edu/software/mrc_tools/mrc_specification.php

²⁶⁷http://bio3d.colorado.edu/imod/doc/mrc_format.txt

²⁶⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/MRCReader.java>

²⁶⁹<http://www.bitplane.com/>

²⁷⁰http://en.wikipedia.org/wiki/MRC_%28file_format%29

²⁷¹<http://www.nikon.com/>

²⁷²http://www.outbackphoto.com/workshop/NEF_conversion/neffile1.zip

- [Sample NEF images](#)²⁷³

We currently have:

- a NEF specification document (v0.1, from 2003, in PDF)
- several NEF datasets

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

Source Code: [NikonReader.java](#)²⁷⁴

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](#)²⁷⁵

18.77 NifTI

Extensions: .img, .hdr

Developer: [National Institutes of Health](#)²⁷⁶

Support

SCIFIO:

Export:

Officially Supported Versions:

Supported Metadata Fields: *NifTI*

Sample Datasets:

- [Official test data](#)²⁷⁷

We currently have:

- [NifTI specification documents](#)²⁷⁸
- several NifTI datasets

We would like to have:

Ratings

Pixels:

Metadata:

²⁷³http://www.nikondigital.org/articles/library/nikon_d2x_first_impressions.htm




²⁷⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NikonReader.java>

²⁷⁵http://www.outbackphoto.com/workshop/NEF_conversion/nefconversion.html

²⁷⁶<http://www.nih.gov/>

²⁷⁷<http://nifti.nimh.nih.gov/nifti-1/data>


²⁷⁸<http://nifti.nimh.nih.gov/nifti-1/>

Openness: Presence: Utility: **Additional Information**Source Code: [NiftiReader.java](#)²⁷⁹

Notes:

18.78 Nikon Elements TIFF

Extensions: .tiff

Developer: [Nikon](#)²⁸⁰**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

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [NikonElementsTiffReader.java](#)²⁸¹

Notes:

18.79 Nikon EZ-C1 TIFF

Extensions: .tiff

Developer: [Nikon](#)²⁸²**Support**SCIFIO: Export: ²⁷⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NiftiReader.java>²⁸⁰<http://www.nikon.com>²⁸¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NikonElementsTiffReader.java>²⁸²<http://www.nikon.com/>

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:

Openness:

Presence:

Utility:

Additional Information

Source Code: [NikonTiffReader.java](#)²⁸³

Notes:

18.80 Nikon NIS-Elements ND2

Extensions: .nd2

Developer: [Nikon USA](#)²⁸⁴

Support

SCIFIO:

Export:

Officially Supported Versions:

Supported Metadata Fields: *Nikon NIS-Elements ND2*

Freely Available Software:

- [NIS-Elements Viewer from Nikon](#)²⁸⁵

We currently have:

- many ND2 datasets

We would like to have:

- an official specification document

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

²⁸³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NikonTiffReader.java>

²⁸⁴<http://www.nikonusa.com/>

²⁸⁵<http://www.nis-elements.com/resources-downloads.html>

Source Code: [NativeND2Reader.java](#)²⁸⁶

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](#)²⁸⁷ 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](#)²⁸⁸ installed. Additionally, you will need to download [LegacyND2Reader.dll](#)²⁸⁹ and place it in your ImageJ plugin folder.

18.81 NRRD (Nearly Raw Raster Data)

Extensions: .nrrd, .nhdr, .raw, .txt

Developer: [Teem developers](#)²⁹⁰

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *NRRD (Nearly Raw Raster Data)*

Freely Available Software:

- [nrrd \(NRRD reference library\)](#)²⁹¹

Sample Datasets:


- [Diffusion tensor MRI datasets](#)²⁹²

We currently have:

- [an nrrd specification document](#)²⁹³ (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](#)²⁹⁴

Notes:

²⁸⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/NativeND2Reader.java>

²⁸⁷<http://java.net/projects/jai-imageio>

²⁸⁸<http://rsb.info.nih.gov/ij/plugins/nd2-reader.html>

²⁸⁹<https://github.com/openmicroscopy/bioformats/blob/develop/lib/LegacyND2Reader.dll?raw=true>

²⁹⁰<http://teem.sourceforge.net/>

²⁹¹<http://teem.sourceforge.net/nrrd/>

²⁹²<http://www.sci.utah.edu/%7Egk/DTI-data/>

²⁹³<http://teem.sourceforge.net/nrrd/format.html>

²⁹⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/NRRDReader.java>

18.82 Olympus CellR/APL

Extensions: .apl, .mtb, .tnb, .tif, .obsep

Owner: [Olympus](#)²⁹⁵

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Olympus CellR/APL*


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](#)²⁹⁶

Notes:

18.83 Olympus FluoView FV1000

Extensions: .oib, .oif

Owner: [Olympus](#)²⁹⁷

Support

SCIFIO: 

Export: 

Officially Supported Versions: 1.0, 2.0

Supported Metadata Fields: *Olympus FluoView FV1000*

Freely Available Software:

- [FV-Viewer](#) from [Olympus](#)²⁹⁸

We currently have:

- an OIF specification document (v2.0.0.0, from 2008, in PDF)

²⁹⁵<http://www.olympus.com/>

²⁹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/APLReader.java>

²⁹⁷<http://www.olympus.com/>


²⁹⁸http://www.olympus.co.uk/microscopy/22_FluoView_FV1000__Confocal_Microscope.htm


- 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: 

Presence: 

Utility: 

Additional Information

Source Code: [FV1000Reader.java](#)²⁹⁹

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](#)³⁰⁰ 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](#)³⁰¹
- [SVI Huygens](#)³⁰²

See Also:

[Olympus FluoView Resource Center](#)³⁰³

18.84 Olympus FluoView TIFF

Extensions: .tif

Owner: [Olympus](#)³⁰⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Olympus FluoView TIFF*

Freely Available Software:

- [DIMIN](#)³⁰⁵

²⁹⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FV1000Reader.java>

³⁰⁰<http://jakarta.apache.org/poi/>

³⁰¹<http://www.bitplane.com/>

³⁰²<http://svi.nl/>

³⁰³<http://www.olympusfluoview.com>

³⁰⁴<http://www.olympus.com/>


³⁰⁵<http://www.dimin.net/>


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:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [FluoviewReader.java](#)³⁰⁶

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](#)³⁰⁷
- [SVI Huygens](#)³⁰⁸

18.85 Olympus ScanR


Extensions: .xml, .dat, .tif

Developer: [Olympus](#)³⁰⁹

Owner: [Olympus](#)³¹⁰

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: 


³⁰⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/FluoviewReader.java>


³⁰⁷<http://www.bitplane.com/>

³⁰⁸<http://svi.nl/>

³⁰⁹<http://www.olympus.com/>

³¹⁰<http://www.olympus.com/>

Presence: 

Utility: 

Additional Information

Source Code: [ScanrReader.java](#)³¹¹

Notes:

18.86 Olympus SIS TIFF

Extensions: .tiff

Developer: [Olympus](#)³¹²

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 Information

Source Code: [SISReader.java](#)³¹³

Notes:

18.87 OME-TIFF

Extensions: .ome.tiff

Developer: [Open Microscopy Environment](#)³¹⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions: 2003FC, 2007-06, 2008-02, 2008-09, 2009-09, 2010-04, 2010-06, 2011-06, 2012-06

Supported Metadata Fields: *OME-TIFF*

³¹¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ScanrReader.java>

³¹²<http://www.olympus-sis.com/>

³¹³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SISReader.java>


³¹⁴<http://www.openmicroscopy.org/>

We currently have:


- an OME-TIFF specification document³¹⁵ (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: 

Utility: 

Additional Information

Source Code: [OMETiffReader.java](#)³¹⁶ Source Code: [OMETiffWriter.java](#)³¹⁷

Notes:

Bio-Formats can save image stacks as OME-TIFF.

Commercial applications that support OME-TIFF include:

- [Bitplane Imaris](#)³¹⁸
- [SVI Huygens](#)³¹⁹

See Also:

[OME-TIFF technical overview](#)³²⁰

18.88 OME-XML

Extensions: .ome

Developer: [Open Microscopy Environment](#)³²¹

Support

SCIFIO: 

Export: 

Officially Supported Versions: 2003FC, 2007-06, 2008-02, 2008-09, 2009-09, 2010-04, 2010-06, 2011-06, 2012-06

Supported Metadata Fields: *OME-XML*

We currently have:

- [OME-XML specification documents](#)³²²
- many OME-XML datasets
- the ability to produce more datasets

³¹⁵<http://www.openmicroscopy.org/site/support/ome-model/ome-tiff/specification.html>

³¹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/OMETiffReader.java>

³¹⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/OMETiffWriter.java>

³¹⁸<http://www.bitplane.com/>

³¹⁹<http://svi.nl/>


³²⁰<http://www.openmicroscopy.org/site/support/ome-model/ome-tiff/index.html>

³²¹<http://www.openmicroscopy.org/>


³²²<http://www.openmicroscopy.org/Schemas/>


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [OMEXMLReader.java](#)³²³ Source Code: [OMEXMLWriter.java](#)³²⁴

Notes:

Bio-Formats uses the [OME-XML Java library](#)³²⁵ to read OME-XML files.

Commercial applications that support OME-XML include:

- [Bitplane Imaris](#)³²⁶
- [SVI Huygens](#)³²⁷

18.89 Oxford Instruments

Extensions: .top

Owner: [Oxford Instruments](#)³²⁸

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: 

³²³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/OMEXMLReader.java>

³²⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/OMEXMLWriter.java>

³²⁵<http://www.openmicroscopy.org/site/support/ome-model/ome-xml/java-library.html>

³²⁶<http://www.bitplane.com/>

³²⁷<http://svi.nl/>

³²⁸<http://www.oxinst.com>

Additional Information

Source Code: [OxfordInstrumentsReader.java](#)³²⁹

Notes:

18.90 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](#)³³⁰

Notes:

Commercial applications that support PCX include [Zeiss LSM Image Browser](#)³³¹.

18.91 Perkin Elmer Densitometer

Extensions: .pds

Developer: [Perkin Elmer](#)³³²

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Perkin Elmer Densitometer*

³²⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/OxfordInstrumentsReader.java>

³³⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/PCXReader.java>

³³¹[http://www.zeiss.de/C12567BE00472A5C/EmbedTitelIntern/LSMImageBrowser/\\$File/INST_IB.EXE](http://www.zeiss.de/C12567BE00472A5C/EmbedTitelIntern/LSMImageBrowser/$File/INST_IB.EXE)

³³²<http://www.perkinelmer.com>


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](#)³³³

Notes:

18.92 PerkinElmer Operetta

Extensions: .tiff, .xml

Developer: [PerkinElmer](#)³³⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *PerkinElmer Operetta*


We currently have:

- a few sample datasets


We would like to have:


- an official specification document
- more sample datasets


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [OperettaReader.java](#)³³⁵

³³³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PDSReader.java>

³³⁴<http://www.perkinelmer.com/>

³³⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/OperettaReader.java>

Notes:

18.93 PerkinElmer UltraView

Extensions: .tif, .2, .3, .4 , etc.

Owner: [PerkinElmer](#)³³⁶

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](#)³³⁷

Notes:

Other associated extensions include: .tim, .zpo, .csv, .htm, .cfg, .ano, .rec

Commercial applications that support this format include:

- [Bitplane Imaris](#)³³⁸
- [Image-Pro Plus](#)³³⁹

See Also:

[PerkinElmer UltraView system overview](#)³⁴⁰

18.94 PGM (Portable Gray Map)

Extensions: .pgm

Developer: Netpbm developers

Support

SCIFIO: 

Export: 

³³⁶<http://www.perkinelmer.com/>

³³⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PerkinElmerReader.java>

³³⁸<http://www.bitplane.com/>

³³⁹<http://www.mediacy.com/>

³⁴⁰<http://www.perkinelmer.com/pages/020/cellularimaging/products/ultraviewvoxsysteoverview.xhtml>

Officially Supported Versions:

Supported Metadata Fields: *PGM (Portable Gray Map)*

Freely Available Software:


- Netpbm graphics filter³⁴¹

We currently have:

- a PGM specification document³⁴² (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.java*³⁴³

Notes:

18.95 Adobe Photoshop PSD

Extensions: .psd

Developer: *Adobe*³⁴⁴

Support

SCIFIO: 

Export: 

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: 

³⁴¹<http://netpbm.sourceforge.net/>

³⁴²<http://netpbm.sourceforge.net/doc/pgm.html>

³⁴³<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/PGMReader.java>

³⁴⁴<http://www.adobe.com/>

Utility: 

Additional Information

Source Code: [PSDReader.java](#)³⁴⁵

Notes:

18.96 Photoshop TIFF

Extensions: .tif, .tiff

Developer: [Adobe](#)³⁴⁶

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

Source Code: [PhotoshopTiffReader.java](#)³⁴⁷

Notes:

18.97 PICT (Macintosh Picture)

Extensions: .pict

Developer: [Apple Computer](#)³⁴⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *PICT (Macintosh Picture)*

³⁴⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PSDReader.java>

³⁴⁶<http://www.adobe.com>

³⁴⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PhotoshopTiffReader.java>

³⁴⁸<http://www.apple.com>

We currently have:

- many PICT datasets

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

Source Code: [PictReader.java](#)³⁴⁹

Notes:

[QuickTime for Java](#)³⁵⁰ is required for reading vector files and some compressed files.

See Also:

[PICT technical overview](#)³⁵¹ [Another PICT technical overview](#)³⁵²

18.98 PNG (Portable Network Graphics)

Extensions: .png

Developer: [PNG Development Group](#)³⁵³

Support

SCIFIO:

Export:

Officially Supported Versions:

Supported Metadata Fields: *PNG (Portable Network Graphics)*

Freely Available Software:

- [PNG Writer plugin for ImageJ](#)³⁵⁴

We currently have:

- a [PNG specification document](#)³⁵⁵ (W3C/ISO/IEC version, from 2003 November 10, in HTML)
- several PNG datasets

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

³⁴⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/PictReader.java>

³⁵⁰<http://www.apple.com/quicktime/download/standalone.html>


³⁵¹<http://www.faqs.org/faqs/graphics/fileformats-faq/part3/section-107.html>


³⁵²<http://www.prepressure.com/formats/pict/fileformat.htm>

³⁵³<http://www.libpng.org/pub/png/pngnews.html>

³⁵⁴<http://rsb.info.nih.gov/ij/plugins/png-writer.html>

³⁵⁵<http://www.libpng.org/pub/png/spec/iso/>

Presence: 

Utility: 

Additional Information

Source Code: [APNGReader.java](#)³⁵⁶

Notes:

Bio-Formats uses the [Java Image I/O](#)³⁵⁷ API to read and write PNG files.

See Also:

[PNG technical overview](#)³⁵⁸

18.99 Prairie Technologies TIFF

Extensions: .tif, .xml, .cfg

Developer: [Prairie Technologies](#)³⁵⁹

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: 

Presence: 

Utility: 

Additional Information

Source Code: [PrairieReader.java](#)³⁶⁰

Notes:

18.100 Quesant

Extensions: .afm

Developer: Quesant Instrument Corporation

Owner: [KLA-Tencor Corporation](#)³⁶¹

³⁵⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/APNGReader.java>

³⁵⁷<http://java.sun.com/j2se/1.4.2/docs/guide/imageio/index.html>

³⁵⁸<http://www.libpng.org/pub/png/>

³⁵⁹<http://www.prairie-technologies.com/>

³⁶⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PrairieReader.java>

³⁶¹<http://www.kla-tencor.com/surface-profilometry-and-metrology.html>

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

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [QuesantReader.java](#)³⁶²

Notes:

18.101 QuickTime Movie

Extensions: .mov

Owner: [Apple Computer](#)³⁶³**Support**SCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *QuickTime Movie*

Freely Available Software:

- [QuickTime Player](#)³⁶⁴

We currently have:


- a [QuickTime specification document](#)³⁶⁵ (from 2001 March 1, in HTML)
- several QuickTime datasets
- the ability to produce more datasets


We would like to have:


³⁶²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/QuesantReader.java>³⁶³<http://www.apple.com/>³⁶⁴<http://www.apple.com/quicktime/download/>³⁶⁵<http://developer.apple.com/documentation/Quicktime/QTFF/>


- 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](#)³⁶⁶ Source Code: [QTWriter.java](#)³⁶⁷

Notes:

Bio-Formats has two modes of operation for QuickTime:

- QTJava mode requires [QuickTime](#)³⁶⁸ 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:

Codec	Description	Native	QTJava
raw	Full Frames (Uncompressed)	read & write	read & write
iraw	Intel YUV Uncompressed	read only	read & write
rle	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](#)³⁶⁹

18.102 RHK

Extensions: .sm2, .sm3

Owner: [RHK Technologies](#)³⁷⁰

³⁶⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/NativeQTReader.java>

³⁶⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/QTWriter.java>

³⁶⁸<http://www.apple.com/quicktime/download/>

³⁶⁹<http://www.apple.com/quicktime/>

³⁷⁰<http://www.rhk-tech.com>

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

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [RHKReader.java](#)³⁷¹

Notes:

18.103 SBIG

Owner: [Santa Barbara Instrument Group \(SBIG\)](#)³⁷²**Support**

SCIFIO: ❌

Export: ❌

Officially Supported Versions:


Supported Metadata Fields: *SBIG*




We currently have:

- an official SBIG specification document³⁷³
- a few SBIG files

We would like to have:

- more SBIG files


RatingsPixels: Metadata: ³⁷¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/RHKReader.java>³⁷²<http://www.sbig.com>³⁷³<http://sbig.impulse.net/pdffiles/file.format.pdf>

Openness: Presence: Utility: **Additional Information**Source Code: [SBIGReader.java](#)³⁷⁴

Notes:

18.104 Seiko

Extensions: .xqd, .xqf

Owner: [Seiko](#)³⁷⁵**Support**SCIFIO: Export: 

Officially Supported Versions:




Supported Metadata Fields: *Seiko*

We currently have:

- 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

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [SeikoReader.java](#)³⁷⁶

Notes:

18.105 SimplePCI & HcImage

Extensions: .cxd

Developer: [Compix](#)³⁷⁷**Support**³⁷⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SBIGReader.java>³⁷⁵<http://www.seiko.co.jp/en/index.php>³⁷⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SeikoReader.java>³⁷⁷<http://hcimage.com>

SCIFIO: 

Export: 

Officially Supported Versions:


Supported Metadata Fields: *SimplePCI & HCImage*

We currently have:

- several SimplePCI files


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [PCIRReader.java](#)³⁷⁸

Notes:

Bio-Formats uses a modified version of the [Apache Jakarta POI library](#)³⁷⁹ to read CXD files.

See Also:

[SimplePCI software overview](#)³⁸⁰

18.106 SimplePCI & HCImage TIFF

Extensions: .tiff

Developer: [Hamamatsu](#)³⁸¹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *SimplePCI & HCImage TIFF*

We currently have:

- a few SimplePCI TIFF datasets

We would like to have:

- more SimplePCI TIFF datasets

Ratings

Pixels: 

Metadata: 


Openness: 


³⁷⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/PCIRReader.java>

³⁷⁹<http://jakarta.apache.org/poi/>

³⁸⁰<http://hcimage.com/simple-pci-legacy/>

³⁸¹<http://hcimage.com/simple-pci-legacy/>

Presence: 

Utility: 

Additional Information

Source Code: [SimplePCITiffReader.java](#)³⁸²

Notes:

18.107 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
- more SM-Camera files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [SMCameraReader.java](#)³⁸³

Notes:

18.108 SPIDER

Extensions: .spi, .stk

Developer: [Wadsworth Center](#)³⁸⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *SPIDER*

³⁸²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SimplePCITiffReader.java>

³⁸³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SMCameraReader.java>

³⁸⁴http://www.wadsworth.org/spider_doc/spider/docs/spider.html

Freely Available Software:

- [SPIDER](#)³⁸⁵

We currently have:

- a few example datasets
- [official file format documentation](#)³⁸⁶

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

Source Code: [SpiderReader.java](#)³⁸⁷

Notes:

18.109 Targa

Extensions: .tga

Developer: [Truevision](#)³⁸⁸

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

³⁸⁵http://www.wadsworth.org/spider_doc/spider/docs/spider.html

³⁸⁶http://www.wadsworth.org/spider_doc/spider/docs/image_doc.html

³⁸⁷<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/SpiderReader.java>

³⁸⁸<http://www.truevision.com>

Source Code: [TargaReader.java](#)³⁸⁹

Notes:

18.110 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: 

Utility: 

Additional Information

Source Code: [TextReader.java](#)³⁹⁰

Notes:

Reads tabular pixel data produced by a variety of software.

18.111 TIFF (Tagged Image File Format)

Extensions: .tif

Developer: Aldus and Microsoft

Owner: [Adobe](#)³⁹¹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *TIFF (Tagged Image File Format)*

Sample Datasets:

- [LZW TIFF data gallery](#)³⁹²
- [Big TIFF](#)³⁹³

³⁸⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/TargaReader.java>

³⁹⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/TextReader.java>

³⁹¹<http://www.adobe.com>

³⁹²http://marlin.life.utsa.edu/Data_Gallery.html

³⁹³<http://tiffcentral.com/>

We currently have:

- a TIFF specification document³⁹⁴ (v6.0, from 1992 June 3, in PDF)
- many TIFF datasets
- a few BigTIFF datasets

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

Source Code: [TiffReader.java](#)³⁹⁵ Source Code: [TiffWriter.java](#)³⁹⁶

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:

[TIFF technical overview](#)³⁹⁷ [BigTIFF technical overview](#)³⁹⁸

18.112 TillPhotonics TillVision

Extensions: .vws

Developer: [TILL Photonics](#)³⁹⁹

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:

³⁹⁴<http://partners.adobe.com/asn/developer/PDFS/TN/TIFF6.pdf>


³⁹⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/TiffReader.java>

³⁹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/out/TiffWriter.java>

³⁹⁷<http://www.awaresystems.be/imaging/tiff/faq.html#q3>

³⁹⁸<http://www.awaresystems.be/imaging/tiff/bigtiff.html>

³⁹⁹<http://www.till-photonics.com/>

Utility: **Additional Information**Source Code: [TillVisionReader.java](#)⁴⁰⁰

Notes:

18.113 Topometrix

Extensions: .tfr, .ffr, .zfr, .zfp, .2fl

Owner: [TopoMetrix \(now Veeco\)](#)⁴⁰¹**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

We would like to have:


- an official specification document
- more Topometrix files

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [TopometrixReader.java](#)⁴⁰²

Notes:

18.114 Trestle

Extensions: .tif, .sld, .jpg

SupportSCIFIO: Export: 

Officially Supported Versions:

Supported Metadata Fields: *Trestle*⁴⁰⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/TillVisionReader.java>⁴⁰¹<http://www.veeco.com/>⁴⁰²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/TopometrixReader.java>

Sample Datasets:


- [OpenSlide](#)⁴⁰³


We currently have:


- a few example datasets
- [developer documentation from the OpenSlide project](#)⁴⁰⁴


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [TrestleReader.java](#)⁴⁰⁵

Notes:

18.115 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

⁴⁰³<http://openslide.cs.cmu.edu/download/openslide-testdata/Trestle/>

⁴⁰⁴<http://openslide.org/Trestle%20format/>

⁴⁰⁵<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/TrestleReader.java>

Source Code: [UBMReader.java](#)⁴⁰⁶

Notes:

18.116 Unisoku

Extensions: .dat, .hdr

Owner: [Unisoku](#)⁴⁰⁷

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
- more Unisoku files


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [UnisokuReader.java](#)⁴⁰⁸

Notes:


18.117 Varian FDF

Extensions: .fdf

Developer: [Varian, Inc.](#)⁴⁰⁹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Varian FDF*

⁴⁰⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/UBMReader.java>

⁴⁰⁷<http://www.unisoku.com>

⁴⁰⁸<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/UnisokuReader.java>

⁴⁰⁹<http://www.varianinc.com>


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](#)⁴¹⁰

Notes:

18.118 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](#)⁴¹¹

Notes:

⁴¹⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VarianFDFReader.java>

⁴¹¹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VGSAMReader.java>

18.119 VisiTech XYS

Extensions: .xys, .html

Developer: [VisiTech International](#)⁴¹²

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


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [VisitechReader.java](#)⁴¹³

Notes:

18.120 Volocity

Extensions: .mvd2

Developer: [PerkinElmer](#)⁴¹⁴

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Volocity*

Sample Datasets:

- [Volocity Demo](#)⁴¹⁵

We currently have:

- many example Volocity datasets

We would like to have:

⁴¹²<http://www.visitech.co.uk/>

⁴¹³<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VisitechReader.java>


⁴¹⁴<http://www.perkinelmer.com/pages/020/cellularimaging/products/volocity.xhtml>


⁴¹⁵<http://www.perkinelmer.com/pages/020/cellularimaging/products/volocitydemo.xhtml>


- an official specification document
- any Volocity datasets that do not open correctly


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [VolocityReader.java](#)⁴¹⁶

Notes:

.mvd2 files are [Metakit database files](#)⁴¹⁷.

18.121 Volocity Library Clipping

Extensions: .acff

Developer: [PerkinElmer](#)⁴¹⁸

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](#)⁴¹⁹

Notes:

⁴¹⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VolocityReader.java>

⁴¹⁷<http://equi4.com/metakit/>

⁴¹⁸<http://www.perkinelmer.com/pages/020/cellularimaging/products/volocity.xhtml>

⁴¹⁹<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/VolocityClippingReader.java>

RGB .acff files are not yet supported. See [#6413](#)⁴²⁰.

18.122 WA-TOP

Extensions: .wat

Developer: WA Technology

Owner: [Oxford Instruments](#)⁴²¹

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *WA-TOP*


We currently have:

- Pascal code that can read WA-TOP files (from ImageSXM)
- 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](#)⁴²²

Notes:

18.123 Windows Bitmap

Extensions: .bmp

Developer: Microsoft and IBM

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Windows Bitmap*

Freely Available Software:

⁴²⁰<http://trac.openmicroscopy.org.uk/ome/ticket/6413>

⁴²¹<http://www.oxinst.com>

⁴²²<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/WATOPReader.java>

- [BMP Writer plugin for ImageJ](#)⁴²³

We currently have:

- many BMP datasets

We would like to have:

Ratings

Pixels:

Metadata:

Openness:

Presence:

Utility:

Additional Information

Source Code: [BMPReader.java](#)⁴²⁴

Notes:

Compressed BMP files are currently not supported.

See Also:

[Technical Overview](#)⁴²⁵ [General Resources](#)⁴²⁶

18.124 Zeiss AxioVision TIFF

Extensions: .xml, .tiff

Developer: [Carl Zeiss MicroImaging GmbH](#)⁴²⁷

Owner: [Carl Zeiss MicroImaging GmbH](#)⁴²⁸

Support

SCIFIO:

Export:

Officially Supported Versions:

Supported Metadata Fields: *Zeiss AxioVision TIFF*

Freely Available Software:

- [Zeiss ZEN Lite](#)⁴²⁹

We currently have:

- many example datasets

We would like to have:

- an official specification document

Ratings

Pixels:

Metadata:

⁴²³<http://rsb.info.nih.gov/ij/plugins/bmp-writer.html>

⁴²⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/scifio/src/loci/formats/in/BMPReader.java>




⁴²⁵<http://www.faqs.org/faqs/graphics/fileformats-faq/part3/section-18.html>

⁴²⁶<http://people.sc.fsu.edu/~burkardt/data/bmp/bmp.html>

⁴²⁷<http://www.zeiss.com/micro>

⁴²⁸<http://www.zeiss.com/micro>

⁴²⁹http://microscopy.zeiss.com/microscopy/en_de/downloads/zen.html

Openness: Presence: Utility: **Additional Information**Source Code: [ZeissTIFFReader.java](#)⁴³⁰

Notes:

18.125 Zeiss AxioVision ZVI (Zeiss Vision Image)

Extensions: .zvi

Developer: Carl Zeiss MicroImaging GmbH (AxioVision)⁴³¹Owner: Carl Zeiss MicroImaging GmbH⁴³²**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](#)⁴³³

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++)
- many ZVI datasets

We would like to have:

RatingsPixels: Metadata: Openness: Presence: Utility: **Additional Information**Source Code: [ZeissZVIReader.java](#)⁴³⁴

Notes:

⁴³⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ZeissTIFFReader.java>⁴³¹<http://www.zeiss.com/axiovision>⁴³²<http://www.zeiss.com/micro>⁴³³<http://www.zeiss.de/c12567be0045acf1/Contents-Frame/cbe917247da02a1cc1256e0000491172>⁴³⁴<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ZeissZVIReader.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 a modified version of the [Apache Jakarta POI library](http://jakarta.apache.org/poi/)⁴³⁵ to read ZVI files.

Commercial applications that support ZVI include [Bitplane Imaris](http://www.bitplane.com/)⁴³⁶.

See Also:

[Axiovision software overview](#)⁴³⁷

18.126 Zeiss CZI

Extensions: .czi

Developer: [Carl Zeiss MicroImaging GmbH](#)⁴³⁸

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Zeiss CZI*

Freely Available Software:


- [Zeiss ZEN 2011](#)⁴³⁹

We currently have:

- many example datasets
- official specification documents


We would like to have:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ZeissCZIReader.java](#)⁴⁴⁰

Notes:

Please note that while we have specification documents for this format, we are not able to distribute them to third parties.

18.127 Zeiss LSM (Laser Scanning Microscope) 510/710

Extensions: .lsm, .mdb

Owner: [Carl Zeiss MicroImaging GmbH](#)⁴⁴¹

⁴³⁵<http://jakarta.apache.org/poi/>

⁴³⁶<http://www.bitplane.com/>

⁴³⁷<http://www.zeiss.com/C12567BE0045ACF1/ContentsWWWIntern/668C9FDCBB18C6E2412568C10045A72E>

⁴³⁸<http://www.zeiss.com/micro>

⁴³⁹<http://www.zeiss.de/C12567BE0045ACF1/Contents-Frame/A57B6AE510CE8FF1C12578FE002A725D>

⁴⁴⁰<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ZeissCZIReader.java>

⁴⁴¹<http://www.zeiss.com/micro>

Support

SCIFIO: 

Export: 

Officially Supported Versions:

Supported Metadata Fields: *Zeiss LSM (Laser Scanning Microscope) 510/710*

Freely Available Software:


- [Zeiss LSM Image Browser](#)⁴⁴²
- [LSM Toolbox plugin for ImageJ](#)⁴⁴³
- [LSM Reader plugin for ImageJ](#)⁴⁴⁴
- [DIMIN](#)⁴⁴⁵

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:


Ratings

Pixels: 

Metadata: 

Openness: 

Presence: 

Utility: 

Additional Information

Source Code: [ZeissLSMReader.java](#)⁴⁴⁶

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 the [MDB Tools Java port](#)⁴⁴⁷

Commercial applications that support this format include:

- [SVI Huygens](#)⁴⁴⁸
- [Bitplane Imaris](#)⁴⁴⁹
- [Amira](#)⁴⁵⁰
- [Image-Pro Plus](#)⁴⁵¹

⁴⁴²[http://www.zeiss.de/C12567BE00472A5C/EmbedTitelIntern/LSMImageBrowser/\\$File/INST_IB.EXE](http://www.zeiss.de/C12567BE00472A5C/EmbedTitelIntern/LSMImageBrowser/$File/INST_IB.EXE)

⁴⁴³<http://imagejdocu.tudor.lu/Members/ppirrotte/lsmttoolbox>

⁴⁴⁴<http://rsb.info.nih.gov/ij/plugins/lsm-reader.html>

⁴⁴⁵<http://www.dimin.net/>

⁴⁴⁶<https://github.com/openmicroscopy/bioformats/blob/develop/components/bio-formats/src/loci/formats/in/ZeissLSMReader.java>

⁴⁴⁷<http://mdbtools.sourceforge.net/>

⁴⁴⁸<http://www2.svi.nl/>

⁴⁴⁹<http://www.bitplane.com/>

⁴⁵⁰<http://www.amira.com/>

⁴⁵¹<http://www.mediacy.com/>

SUMMARY OF SUPPORTED METADATA FIELDS

19.1 Format readers

Format	Supported	Unsupported	Partial	Unknown/Missing
<i>AIMReader</i>	20	0	0	453
<i>APLReader</i>	19	0	0	454
<i>APNGReader</i>	17	0	0	456
<i>ARFReader</i>	17	0	0	456
<i>AVIReader</i>	17	0	0	456
<i>AliconaReader</i>	31	0	0	442
<i>AmiraReader</i>	20	0	0	453
<i>AnalyzeReader</i>	22	0	0	451
<i>BDReader</i>	55	0	0	418
<i>BIFormatReader</i>	17	0	0	456
<i>BMPReader</i>	19	0	0	454
<i>BaseTiffReader</i>	26	0	0	447
<i>BaseZeissReader</i>	81	0	0	392
<i>BioRadGelReader</i>	19	0	0	454
<i>BioRadReader</i>	38	0	0	435
<i>BrukerReader</i>	21	0	0	452
<i>BurleighReader</i>	20	0	0	453
<i>CanonRawReader</i>	17	0	0	456
<i>CellSensReader</i>	17	0	0	456
<i>CellWorxReader</i>	43	0	0	430
<i>CellomicsReader</i>	29	0	0	444
<i>DNGReader</i>	17	0	0	456
<i>DeltavisionReader</i>	50	0	0	423
<i>DicomReader</i>	21	0	0	452
<i>EPSReader</i>	17	0	0	456
<i>Ecat7Reader</i>	21	0	0	452
<i>FEIReader</i>	17	0	0	456
<i>FEITiffReader</i>	37	0	0	436
<i>FV1000Reader</i>	107	0	0	366
<i>FakeReader</i>	17	0	0	456
<i>FitsReader</i>	17	0	0	456
<i>FlexReader</i>	67	0	0	406
<i>FluoviewReader</i>	47	0	0	426
<i>FujiReader</i>	21	0	0	452
<i>GIFReader</i>	17	0	0	456
<i>GatanDM2Reader</i>	28	0	0	445
<i>GatanReader</i>	34	0	0	439

Continued on next page

Table 19.1 – continued from previous page

Format	Supported	Unsupported	Partial	Unknown/Missing
<i>GelReader</i>	19	0	0	454
<i>HISReader</i>	25	0	0	448
<i>HRDGDFReader</i>	19	0	0	454
<i>HamamatsuVMSReader</i>	24	0	0	449
<i>HitachiReader</i>	29	0	0	444
<i>ICSReader</i>	70	0	0	403
<i>IMODReader</i>	42	0	0	431
<i>INRReader</i>	20	0	0	453
<i>IPLabReader</i>	29	0	0	444
<i>IPWReader</i>	18	0	0	455
<i>ImaconReader</i>	21	0	0	452
<i>ImageIOReader</i>	17	0	0	456
<i>ImagicReader</i>	20	0	0	453
<i>ImarisHDFReader</i>	22	0	0	451
<i>ImarisReader</i>	30	0	0	443
<i>ImarisTiffReader</i>	21	0	0	452
<i>ImprovisationTiffReader</i>	23	0	0	450
<i>InCell3000Reader</i>	17	0	0	456
<i>InCellReader</i>	65	0	0	408
<i>IvisionReader</i>	32	0	0	441
<i>JEOLReader</i>	17	0	0	456
<i>JPEG2000Reader</i>	17	0	0	456
<i>JPEGReader</i>	17	0	0	456
<i>JKPReader</i>	17	0	0	456
<i>JPXReader</i>	17	0	0	456
<i>KhorosReader</i>	17	0	0	456
<i>KodakReader</i>	24	0	0	449
<i>L2DReader</i>	27	0	0	446
<i>LEOReader</i>	25	0	0	448
<i>LIFReader</i>	83	0	0	390
<i>LIMReader</i>	17	0	0	456
<i>LegacyND2Reader</i>	17	0	0	456
<i>LegacyQTReader</i>	17	0	0	456
<i>LeicaReader</i>	54	0	0	419
<i>LeicaSCNReader</i>	31	0	0	442
<i>LiFlimReader</i>	23	0	0	450
<i>MIASReader</i>	62	0	0	411
<i>MINCReader</i>	21	0	0	452
<i>MNGReader</i>	17	0	0	456
<i>MRCReader</i>	20	0	0	453
<i>MRWReader</i>	17	0	0	456
<i>MetamorphReader</i>	41	0	0	432
<i>MetamorphTiffReader</i>	36	0	0	437
<i>MicromanagerReader</i>	36	0	0	437
<i>MinimalTiffReader</i>	17	0	0	456
<i>MolecularImagingReader</i>	19	0	0	454
<i>NAFReader</i>	17	0	0	456
<i>ND2Reader</i>	17	0	0	456
<i>NDPIReader</i>	19	0	0	454
<i>NDPISReader</i>	17	0	0	456
<i>NRRDReader</i>	20	0	0	453
<i>NativeND2Reader</i>	50	0	0	423
<i>NativeQTReader</i>	17	0	0	456
<i>NiftiReader</i>	22	0	0	451
<i>NikonElementsTiffReader</i>	48	0	0	425

Continued on next page

Table 19.1 – continued from previous page

Format	Supported	Unsupported	Partial	Unknown/Missing
<i>NikonReader</i>	17	0	0	456
<i>NikonTiffReader</i>	45	0	0	428
<i>OMETiffReader</i>	17	0	0	456
<i>OMEXMLReader</i>	17	0	0	456
<i>OpenlabRawReader</i>	17	0	0	456
<i>OpenlabReader</i>	30	0	0	443
<i>OperettaReader</i>	41	0	0	432
<i>OxfordInstrumentsReader</i>	20	0	0	453
<i>PCIRReader</i>	27	0	0	446
<i>PCXReader</i>	17	0	0	456
<i>PDSReader</i>	21	0	0	452
<i>PGMReader</i>	17	0	0	456
<i>PSDReader</i>	17	0	0	456
<i>PerkinElmerReader</i>	28	0	0	445
<i>PhotoshopTiffReader</i>	17	0	0	456
<i>PictReader</i>	17	0	0	456
<i>PovrayReader</i>	17	0	0	456
<i>PrairieReader</i>	43	0	0	430
<i>PyramidTiffReader</i>	17	0	0	456
<i>QTReader</i>	17	0	0	456
<i>QuesantReader</i>	20	0	0	453
<i>RHKReader</i>	20	0	0	453
<i>SBIGReader</i>	20	0	0	453
<i>SDTReader</i>	17	0	0	456
<i>SEQReader</i>	17	0	0	456
<i>SIFReader</i>	18	0	0	455
<i>SISReader</i>	31	0	0	442
<i>SMCameraReader</i>	17	0	0	456
<i>SVSReader</i>	18	0	0	455
<i>ScanrReader</i>	41	0	0	432
<i>ScreenReader</i>	32	0	0	441
<i>SeikoReader</i>	20	0	0	453
<i>SimplePCITiffReader</i>	31	0	0	442
<i>SlidebookReader</i>	32	0	0	441
<i>SlidebookTiffReader</i>	28	0	0	445
<i>SpiderReader</i>	19	0	0	454
<i>TCSReader</i>	20	0	0	453
<i>TargaReader</i>	18	0	0	455
<i>TextReader</i>	17	0	0	456
<i>TiffDelegateReader</i>	17	0	0	456
<i>TiffJAIRReader</i>	17	0	0	456
<i>TiffReader</i>	20	0	0	453
<i>TileJPEGReader</i>	17	0	0	456
<i>TillVisionReader</i>	20	0	0	453
<i>TopometrixReader</i>	20	0	0	453
<i>TrestleReader</i>	24	0	0	449
<i>UBMReader</i>	17	0	0	456
<i>UnisokuReader</i>	20	0	0	453
<i>VGSAMReader</i>	17	0	0	456
<i>VarianFDFReader</i>	23	0	0	450
<i>VisitechReader</i>	17	0	0	456
<i>VolocityClippingReader</i>	17	0	0	456
<i>VolocityReader</i>	35	0	0	438
<i>WATOPReader</i>	20	0	0	453
<i>ZeissCZIRReader</i>	149	0	0	324

Continued on next page

Table 19.1 – continued from previous page

Format	Supported	Unsupported	Partial	Unknown/Missing
<i>ZeissLSMReader</i>	99	0	0	374
<i>ZeissTIFFReader</i>	17	0	0	456
<i>ZeissZVIReader</i>	17	0	0	456
<i>ZipReader</i>	17	0	0	456

19.2 Metadata fields

Field	Supported	Unsupported	Partial	Unknown/Missing
Arc - ID ¹	0	0	0	151
Arc - LotNumber ²	1	0	0	150
Arc - Manufacturer ³	1	0	0	150
Arc - Model ⁴	1	0	0	150
Arc - Power ⁵	1	0	0	150
Arc - SerialNumber ⁶	1	0	0	150
Arc - Type ⁷	0	0	0	151
BooleanAnnotation - AnnotationRef ⁸	0	0	0	151
BooleanAnnotation - Description ⁹	0	0	0	151
BooleanAnnotation - ID ¹⁰	0	0	0	151
BooleanAnnotation - Namespace ¹¹	0	0	0	151
BooleanAnnotation - Value ¹²	0	0	0	151
Channel - AcquisitionMode ¹³	3	0	0	148
Channel - AnnotationRef ¹⁴	0	0	0	151
Channel - Color ¹⁵	7	0	0	144
Channel - Contrast-Method ¹⁶	0	0	0	151
Channel - Emission-Wavelength ¹⁷	14	0	0	137
Channel - Excitation-Wavelength ¹⁸	15	0	0	136
Channel - FilterSetRef ¹⁹	0	0	0	151

Continued on next page

¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power

⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Arc_Type

⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID

⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Description

¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID

¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace

¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#BooleanAnnotation_Value

¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_AcquisitionMode

¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID

¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Color

¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ContrastMethod

¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterSetRef_ID

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Channel - Fluor ²⁰	0	0	0	151
Channel - ID ²¹	151	0	0	0
Channel - IlluminationType ²²	2	0	0	149
Channel - LightSourceSettingsAttenuation ²³	1	0	0	150
Channel - LightSourceSettingsID ²⁴	5	0	0	146
Channel - LightSourceSettingsWavelength ²⁵	2	0	0	149
Channel - NDFilter ²⁶	2	0	0	149
Channel - Name ²⁷	29	0	0	122
Channel - PinholeSize ²⁸	9	0	0	142
Channel - PockelCellSetting ²⁹	0	0	0	151
Channel - SamplesPerPixel ³⁰	151	0	0	0
CommentAnnotation - AnnotationRef ³¹	0	0	0	151
CommentAnnotation - Description ³²	0	0	0	151
CommentAnnotation - ID ³³	0	0	0	151
CommentAnnotation - Namespace ³⁴	0	0	0	151
CommentAnnotation - Value ³⁵	0	0	0	151
Dataset - AnnotationRef ³⁶	0	0	0	151
Dataset - Description ³⁷	0	0	0	151
Dataset - ExperimenterGroupRef ³⁸	0	0	0	151
Dataset - ExperimenterRef ³⁹	0	0	0	151
Dataset - ID ⁴⁰	0	0	0	151

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²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Fluor²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_IlluminationType²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_Attenuation²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_ID²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_Wavelength²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_NDFilter²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PinholeSize²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PockelCellSetting³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Description³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#CommentAnnotation_Value³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dataset_Description³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterGroupRef_ID³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dataset_ID

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Dataset - ImageRef ⁴¹	0	0	0	151
Dataset - Name ⁴²	0	0	0	151
Detector - AmplificationGain ⁴³	2	0	0	149
Detector - Gain ⁴⁴	5	0	0	146
Detector - ID ⁴⁵	32	0	0	119
Detector - LotNumber ⁴⁶	1	0	0	150
Detector - Manufacturer ⁴⁷	4	0	0	147
Detector - Model ⁴⁸	13	0	0	138
Detector - Offset ⁴⁹	5	0	0	146
Detector - Serial-Number ⁵⁰	2	0	0	149
Detector - Type ⁵¹	27	0	0	124
Detector - Voltage ⁵²	2	0	0	149
Detector - Zoom ⁵³	4	0	0	147
DetectorSettings - Binning ⁵⁴	15	0	0	136
DetectorSettings - Gain ⁵⁵	18	0	0	133
DetectorSettings - ID ⁵⁶	30	0	0	121
DetectorSettings - Offset ⁵⁷	8	0	0	143
DetectorSettings - ReadOutRate ⁵⁸	5	0	0	146
DetectorSettings - Voltage ⁵⁹	6	0	0	145
Dichroic - ID ⁶⁰	6	0	0	145
Dichroic - LotNumber ⁶¹	1	0	0	150
Dichroic - Manufacturer ⁶²	1	0	0	150
Dichroic - Model ⁶³	6	0	0	145

Continued on next page

⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dataset_Name⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_AmplificationGain⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Gain⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Offset⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Voltage⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Zoom⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Offset⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ReadOutRate⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Voltage⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dichroic_ID⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Dichroic - Serial-Number ⁶⁴	1	0	0	150
DoubleAnnotation - AnnotationRef ⁶⁵	0	0	0	151
DoubleAnnotation - Description ⁶⁶	0	0	0	151
DoubleAnnotation - ID ⁶⁷	0	0	0	151
DoubleAnnotation - Namespace ⁶⁸	0	0	0	151
DoubleAnnotation - Value ⁶⁹	0	0	0	151
Ellipse - FillColor ⁷⁰	0	0	0	151
Ellipse - FillRule ⁷¹	0	0	0	151
Ellipse - FontFamily ⁷²	0	0	0	151
Ellipse - FontSize ⁷³	2	0	0	149
Ellipse - FontStyle ⁷⁴	0	0	0	151
Ellipse - ID ⁷⁵	5	0	0	146
Ellipse - LineCap ⁷⁶	0	0	0	151
Ellipse - Locked ⁷⁷	0	0	0	151
Ellipse - RadiusX ⁷⁸	5	0	0	146
Ellipse - RadiusY ⁷⁹	5	0	0	146
Ellipse - StrokeColor ⁸⁰	0	0	0	151
Ellipse - StrokeDashArray ⁸¹	0	0	0	151
Ellipse - StrokeWidth ⁸²	2	0	0	149
Ellipse - Text ⁸³	3	0	0	148
Ellipse - TheC ⁸⁴	0	0	0	151
Ellipse - TheT ⁸⁵	2	0	0	149
Ellipse - TheZ ⁸⁶	2	0	0	149
Ellipse - Transform ⁸⁷	2	0	0	149
Ellipse - Visible ⁸⁸	0	0	0	151

Continued on next page

⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Description⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#DoubleAnnotation_Value⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillColor⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillRule⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontFamily⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontStyle⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_LineCap⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Locked⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusX⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusY⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheC⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Visible

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Ellipse - X ⁸⁹	5	0	0	146
Ellipse - Y ⁹⁰	5	0	0	146
Experiment - Description ⁹¹	1	0	0	150
Experiment - ExperimenterRef ⁹²	0	0	0	151
Experiment - ID ⁹³	5	0	0	146
Experiment - Type ⁹⁴	5	0	0	146
Experimenter - AnnotationRef ⁹⁵	0	0	0	151
Experimenter - Email ⁹⁶	2	0	0	149
Experimenter - First-Name ⁹⁷	5	0	0	146
Experimenter - ID ⁹⁸	10	0	0	141
Experimenter - Institution ⁹⁹	3	0	0	148
Experimenter - Last-Name ¹⁰⁰	9	0	0	142
Experimenter - MiddleName ¹⁰¹	1	0	0	150
Experimenter - User-Name ¹⁰²	2	0	0	149
ExperimenterGroup - AnnotationRef ¹⁰³	0	0	0	151
ExperimenterGroup - Description ¹⁰⁴	0	0	0	151
ExperimenterGroup - ExperimenterRef ¹⁰⁵	0	0	0	151
ExperimenterGroup - ID ¹⁰⁶	0	0	0	151
ExperimenterGroup - Leader ¹⁰⁷	0	0	0	151
ExperimenterGroup - Name ¹⁰⁸	0	0	0	151
Filament - ID ¹⁰⁹	0	0	0	151
Filament - LotNumber ¹¹⁰	1	0	0	150

Continued on next page

⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_X

⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_Y

⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_Description

⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID

⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_ID

⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_Type

⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID

⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_Email

⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_FirstName

⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_ID

⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_Institution

¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_LastName

¹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_MiddleName

¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_UserName

¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID

¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterGroup_Description

¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID

¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterGroup_ID

¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Leader_ID

¹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterGroup_Name

¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Filament - Manufacturer ¹¹¹	1	0	0	150
Filament - Model ¹¹²	1	0	0	150
Filament - Power ¹¹³	1	0	0	150
Filament - Serial-Number ¹¹⁴	1	0	0	150
Filament - Type ¹¹⁵	0	0	0	151
FileAnnotation - AnnotationRef ¹¹⁶	0	0	0	151
FileAnnotation - Description ¹¹⁷	0	0	0	151
FileAnnotation - ID ¹¹⁸	0	0	0	151
FileAnnotation - Namespace ¹¹⁹	0	0	0	151
Filter - Filter-Wheel ¹²⁰	2	0	0	149
Filter - ID ¹²¹	8	0	0	143
Filter - LotNumber ¹²²	1	0	0	150
Filter - Manufacturer ¹²³	1	0	0	150
Filter - Model ¹²⁴	8	0	0	143
Filter - SerialNumber ¹²⁵	1	0	0	150
Filter - Type ¹²⁶	2	0	0	149
FilterSet - DichroicRef ¹²⁷	2	0	0	149
FilterSet - Emission-FilterRef ¹²⁸	2	0	0	149
FilterSet - ExcitationFilterRef ¹²⁹	2	0	0	149
FilterSet - ID ¹³⁰	2	0	0	149
FilterSet - LotNumber ¹³¹	1	0	0	150
FilterSet - Manufacturer ¹³²	1	0	0	150

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¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer¹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filament_Type¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Description¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace¹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_FilterWheel¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_ID¹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber¹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer¹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model¹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber¹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_Type¹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DichroicRef_ID¹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID¹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID¹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterSet_ID¹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber¹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
FilterSet - Model ¹³³	2	0	0	149
FilterSet - Serial-Number ¹³⁴	1	0	0	150
Image - Acquisition-Date ¹³⁵	151	0	0	0
Image - Annotation-Ref ¹³⁶	0	0	0	151
Image - Description ¹³⁷	40	0	0	111
Image - ExperimentRef ¹³⁸	2	0	0	149
Image - ExperimenterGroupRef ¹³⁹	0	0	0	151
Image - ExperimenterRef ¹⁴⁰	5	0	0	146
Image - ID ¹⁴¹	151	0	0	0
Image - InstrumentRef ¹⁴²	39	0	0	112
Image - Microbeam-ManipulationRef ¹⁴³	0	0	0	151
Image - Name ¹⁴⁴	151	0	0	0
Image - ROIRef ¹⁴⁵	11	0	0	140
ImagingEnvironment - AirPressure ¹⁴⁶	1	0	0	150
ImagingEnvironment - CO2Percent ¹⁴⁷	1	0	0	150
ImagingEnvironment - Humidity ¹⁴⁸	1	0	0	150
ImagingEnvironment - Temperature ¹⁴⁹	10	0	0	141
Instrument - ID ¹⁵⁰	43	0	0	108
Label - FillColor ¹⁵¹	0	0	0	151
Label - FillRule ¹⁵²	0	0	0	151
Label - FontFamily ¹⁵³	0	0	0	151
Label - FontSize ¹⁵⁴	2	0	0	149
Label - FontStyle ¹⁵⁵	0	0	0	151

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¹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model¹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber¹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate¹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID¹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description¹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimentRef_ID¹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterGroupRef_ID¹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID¹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID¹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID¹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#MicrobeamManipulationRef_ID¹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name¹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID¹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_AirPressure¹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_CO2Percent¹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Humidity¹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature¹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID¹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillColor¹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillRule¹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontFamily¹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize¹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontStyle

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Label - ID ¹⁵⁶	3	0	0	148
Label - LineCap ¹⁵⁷	0	0	0	151
Label - Locked ¹⁵⁸	0	0	0	151
Label - Stroke-Color ¹⁵⁹	0	0	0	151
Label - StrokeDashArray ¹⁶⁰	0	0	0	151
Label - StrokeWidth ¹⁶¹	2	0	0	149
Label - Text ¹⁶²	3	0	0	148
Label - TheC ¹⁶³	0	0	0	151
Label - TheT ¹⁶⁴	0	0	0	151
Label - TheZ ¹⁶⁵	0	0	0	151
Label - Transform ¹⁶⁶	0	0	0	151
Label - Visible ¹⁶⁷	0	0	0	151
Label - X ¹⁶⁸	3	0	0	148
Label - Y ¹⁶⁹	3	0	0	148
Laser - Frequency-Multiplication ¹⁷⁰	0	0	0	151
Laser - ID ¹⁷¹	9	0	0	142
Laser - Laser-Medium ¹⁷²	8	0	0	143
Laser - LotNumber ¹⁷³	1	0	0	150
Laser - Manufacturer ¹⁷⁴	2	0	0	149
Laser - Model ¹⁷⁵	4	0	0	147
Laser - PockelCell ¹⁷⁶	0	0	0	151
Laser - Power ¹⁷⁷	3	0	0	148
Laser - Pulse ¹⁷⁸	0	0	0	151
Laser - Pump ¹⁷⁹	0	0	0	151
Laser - Repetition-Rate ¹⁸⁰	1	0	0	150
Laser - SerialNumber ¹⁸¹	1	0	0	150

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¹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID¹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_LineCap¹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Locked¹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor¹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray¹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth¹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text¹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheC¹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT¹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ¹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform¹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Visible¹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Label_X¹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Label_Y¹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_FrequencyMultiplication¹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID¹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_LaserMedium¹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber¹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer¹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model¹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_PockelCell¹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power¹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Pulse¹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pump_ID¹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_RepetitionRate¹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Laser - Tuneable ¹⁸²	0	0	0	151
Laser - Type ¹⁸³	8	0	0	143
Laser - Wave-length ¹⁸⁴	7	0	0	144
LightEmittingDiode - ID ¹⁸⁵	0	0	0	151
LightEmittingDiode - LotNumber ¹⁸⁶	1	0	0	150
LightEmittingDiode - Manufacturer ¹⁸⁷	1	0	0	150
LightEmittingDiode - Model ¹⁸⁸	1	0	0	150
LightEmittingDiode - Power ¹⁸⁹	1	0	0	150
LightEmittingDiode - SerialNumber ¹⁹⁰	1	0	0	150
LightPath - DichroicRef ¹⁹¹	3	0	0	148
LightPath - EmissionFilterRef ¹⁹²	5	0	0	146
LightPath - ExcitationFilterRef ¹⁹³	1	0	0	150
Line - FillColor ¹⁹⁴	0	0	0	151
Line - FillRule ¹⁹⁵	0	0	0	151
Line - FontFamily ¹⁹⁶	0	0	0	151
Line - FontSize ¹⁹⁷	2	0	0	149
Line - FontStyle ¹⁹⁸	0	0	0	151
Line - ID ¹⁹⁹	5	0	0	146
Line - LineCap ²⁰⁰	0	0	0	151
Line - Locked ²⁰¹	0	0	0	151
Line - MarkerEnd ²⁰²	0	0	0	151
Line - MarkerStart ²⁰³	0	0	0	151
Line - StrokeColor ²⁰⁴	0	0	0	151
Line - StrokeDashArray ²⁰⁵	0	0	0	151

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¹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Tuneable¹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Type¹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Wavelength¹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID¹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber¹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer¹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model¹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power¹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber¹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DichroicRef_ID¹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID¹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID¹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillColor¹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillRule¹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontFamily¹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize¹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontStyle¹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID²⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_LineCap²⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Locked²⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_MarkerEnd²⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_MarkerStart²⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor²⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Line - StrokeWidth ²⁰⁶	2	0	0	149
Line - Text ²⁰⁷	2	0	0	149
Line - TheC ²⁰⁸	0	0	0	151
Line - TheT ²⁰⁹	1	0	0	150
Line - TheZ ²¹⁰	1	0	0	150
Line - Transform ²¹¹	1	0	0	150
Line - Visible ²¹²	0	0	0	151
Line - X1 ²¹³	5	0	0	146
Line - X2 ²¹⁴	5	0	0	146
Line - Y1 ²¹⁵	5	0	0	146
Line - Y2 ²¹⁶	5	0	0	146
ListAnnotation - AnnotationRef ²¹⁷	0	0	0	151
ListAnnotation - Description ²¹⁸	0	0	0	151
ListAnnotation - ID ²¹⁹	0	0	0	151
ListAnnotation - Namespace ²²⁰	0	0	0	151
LongAnnotation - AnnotationRef ²²¹	0	0	0	151
LongAnnotation - Description ²²²	0	0	0	151
LongAnnotation - ID ²²³	0	0	0	151
LongAnnotation - Namespace ²²⁴	0	0	0	151
LongAnnotation - Value ²²⁵	0	0	0	151
Mask - FillColor ²²⁶	1	0	0	150
Mask - FillRule ²²⁷	0	0	0	151
Mask - FontFamily ²²⁸	0	0	0	151
Mask - FontSize ²²⁹	0	0	0	151
Mask - Height ²³⁰	2	0	0	149

Continued on next page

²⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

²⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

²⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheC

²⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

²¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

²¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform

²¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Visible

²¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X1

²¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X2

²¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y1

²¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y2

²¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID

²¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Description

²¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID

²²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace

²²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID

²²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Description

²²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID

²²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace

²²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#LongAnnotation_Value

²²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillColor

²²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillRule

²²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontFamily

²²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

²³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_Height

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Mask - ID ²³¹	2	0	0	149
Mask - LineCap ²³²	0	0	0	151
Mask - Locked ²³³	0	0	0	151
Mask - Stroke-Color ²³⁴	1	0	0	150
Mask - StrokeDashArray ²³⁵	0	0	0	151
Mask - StrokeWidth ²³⁶	0	0	0	151
Mask - Text ²³⁷	0	0	0	151
Mask - TheC ²³⁸	0	0	0	151
Mask - TheT ²³⁹	0	0	0	151
Mask - TheZ ²⁴⁰	0	0	0	151
Mask - Transform ²⁴¹	0	0	0	151
Mask - Visible ²⁴²	0	0	0	151
Mask - Width ²⁴³	2	0	0	149
Mask - X ²⁴⁴	2	0	0	149
Mask - Y ²⁴⁵	2	0	0	149
MicrobeamManipulation - ExperimenterRef ²⁴⁶	0	0	0	151
MicrobeamManipulation - ID ²⁴⁷	0	0	0	151
MicrobeamManipulation - ROIRef ²⁴⁸	0	0	0	151
MicrobeamManipulation - Type ²⁴⁹	0	0	0	151
MicrobeamManipulationLightSourceSettings - Attenuation ²⁵⁰	0	0	0	151
MicrobeamManipulationLightSourceSettings - ID ²⁵¹	0	0	0	151
MicrobeamManipulationLightSourceSettings - Wavelength ²⁵²	0	0	0	151
Microscope - Lot-Number ²⁵³	1	0	0	150
Microscope - Manufacturer ²⁵⁴	2	0	0	149

Continued on next page

²³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_LineCap

²³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Locked

²³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor

²³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray

²³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

²³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

²³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheC

²³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

²⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

²⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform

²⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Visible

²⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_Width

²⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_X

²⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_Y

²⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID

²⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#MicrobeamManipulation_ID

²⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

²⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#MicrobeamManipulation_Type

²⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_Attenuation

²⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_ID

²⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_Wavelength

²⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

²⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Microscope Model ²⁵⁵	9	0	0	142
Microscope - Serial-Number ²⁵⁶	3	0	0	148
Microscope - Type ²⁵⁷	3	0	0	148
Objective - CalibratedMagnification ²⁵⁸	9	0	0	142
Objective - Correction ²⁵⁹	25	0	0	126
Objective - ID ²⁶⁰	31	0	0	120
Objective - Immersion ²⁶¹	26	0	0	125
Objective - Iris ²⁶²	2	0	0	149
Objective - LensNA ²⁶³	19	0	0	132
Objective - LotNumber ²⁶⁴	1	0	0	150
Objective - Manufacturer ²⁶⁵	5	0	0	146
Objective - Model ²⁶⁶	12	0	0	139
Objective - Nominal-Magnification ²⁶⁷	23	0	0	128
Objective - Serial-Number ²⁶⁸	3	0	0	148
Objective - WorkingDistance ²⁶⁹	9	0	0	142
ObjectiveSettings - CorrectionCollar ²⁷⁰	1	0	0	150
ObjectiveSettings - ID ²⁷¹	26	0	0	125
ObjectiveSettings - Medium ²⁷²	1	0	0	150
ObjectiveSettings - RefractiveIndex ²⁷³	7	0	0	144
Pixels - Annotation-Ref ²⁷⁴	0	0	0	151
Pixels - BinDataBigEndian ²⁷⁵	151	0	0	0

Continued on next page

²⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model²⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber²⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Microscope_Type²⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification²⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction²⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID²⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion²⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Iris²⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA²⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber²⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer²⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model²⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification²⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber²⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_WorkingDistance²⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_CorrectionCollar²⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID²⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_Medium²⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex²⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID²⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Pixels - DimensionOrder ²⁷⁶	151	0	0	0
Pixels - ID ²⁷⁷	151	0	0	0
Pixels - Physical-SizeX ²⁷⁸	79	0	0	72
Pixels - Physical-SizeY ²⁷⁹	79	0	0	72
Pixels - Physical-SizeZ ²⁸⁰	40	0	0	111
Pixels - SizeC ²⁸¹	151	0	0	0
Pixels - SizeT ²⁸²	151	0	0	0
Pixels - SizeX ²⁸³	151	0	0	0
Pixels - SizeY ²⁸⁴	151	0	0	0
Pixels - SizeZ ²⁸⁵	151	0	0	0
Pixels - TimeIncrement ²⁸⁶	16	0	0	135
Pixels - Type ²⁸⁷	151	0	0	0
Plane - Annotation-Ref ²⁸⁸	0	0	0	151
Plane - DeltaT ²⁸⁹	22	0	0	129
Plane - Exposure-Time ²⁹⁰	26	0	0	125
Plane - HashSHA1 ²⁹¹	0	0	0	151
Plane - PositionX ²⁹²	26	0	0	125
Plane - PositionY ²⁹³	26	0	0	125
Plane - PositionZ ²⁹⁴	20	0	0	131
Plane - TheC ²⁹⁵	151	0	0	0
Plane - TheT ²⁹⁶	151	0	0	0
Plane - TheZ ²⁹⁷	151	0	0	0
Plate - Annotation-Ref ²⁹⁸	0	0	0	151
Plate - ColumnNamingConvention ²⁹⁹	8	0	0	143
Plate - Columns ³⁰⁰	3	0	0	148

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²⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder²⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID²⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX²⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY²⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ²⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC²⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT²⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX²⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY²⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ²⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement²⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type²⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID²⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT²⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime²⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_HashSHA1²⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX²⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY²⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ²⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC²⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT²⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ²⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID²⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ColumnNamingConvention³⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Columns

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Plate - Description ³⁰¹	2	0	0	149
Plate - ExternalIdentifier ³⁰²	3	0	0	148
Plate - ID ³⁰³	10	0	0	141
Plate - Name ³⁰⁴	9	0	0	142
Plate - RowNamingConvention ³⁰⁵	8	0	0	143
Plate - Rows ³⁰⁶	3	0	0	148
Plate - Status ³⁰⁷	0	0	0	151
Plate - WellOriginX ³⁰⁸	1	0	0	150
Plate - WellOriginY ³⁰⁹	1	0	0	150
PlateAcquisition - AnnotationRef ³¹⁰	0	0	0	151
PlateAcquisition - Description ³¹¹	0	0	0	151
PlateAcquisition - EndTime ³¹²	1	0	0	150
PlateAcquisition - ID ³¹³	7	0	0	144
PlateAcquisition - MaximumFieldCount ³¹⁴	7	0	0	144
PlateAcquisition - Name ³¹⁵	0	0	0	151
PlateAcquisition - StartTime ³¹⁶	2	0	0	149
PlateAcquisition - WellSampleRef ³¹⁷	7	0	0	144
Point - FillColor ³¹⁸	0	0	0	151
Point - FillRule ³¹⁹	0	0	0	151
Point - FontFamily ³²⁰	0	0	0	151
Point - FontSize ³²¹	1	0	0	150
Point - FontStyle ³²²	0	0	0	151
Point - ID ³²³	3	0	0	148

Continued on next page

³⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Description³⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ExternalIdentifier³⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID³⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Name³⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_RowNamingConvention³⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Rows³⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Status³⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_WellOriginX³⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_WellOriginY³¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID³¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_Description³¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_EndTime³¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_ID³¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount³¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_Name³¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_StartTime³¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSampleRef_ID³¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillColor³¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillRule³²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontFamily³²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize³²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontStyle³²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Point - LineCap ³²⁴	0	0	0	151
Point - Locked ³²⁵	0	0	0	151
Point - Stroke-Color ³²⁶	1	0	0	150
Point - StrokeDashArray ³²⁷	1	0	0	150
Point - StrokeWidth ³²⁸	2	0	0	149
Point - Text ³²⁹	1	0	0	150
Point - TheC ³³⁰	0	0	0	151
Point - TheT ³³¹	1	0	0	150
Point - TheZ ³³²	2	0	0	149
Point - Transform ³³³	0	0	0	151
Point - Visible ³³⁴	0	0	0	151
Point - X ³³⁵	3	0	0	148
Point - Y ³³⁶	3	0	0	148
Polygon - Fill-Color ³³⁷	0	0	0	151
Polygon - FillRule ³³⁸	0	0	0	151
Polygon - FontFamily ³³⁹	0	0	0	151
Polygon - Font-Size ³⁴⁰	2	0	0	149
Polygon - FontStyle ³⁴¹	0	0	0	151
Polygon - ID ³⁴²	7	0	0	144
Polygon - LineCap ³⁴³	0	0	0	151
Polygon - Locked ³⁴⁴	0	0	0	151
Polygon - Points ³⁴⁵	7	0	0	144
Polygon - Stroke-Color ³⁴⁶	1	0	0	150
Polygon - StrokeDashArray ³⁴⁷	1	0	0	150
Polygon - StrokeWidth ³⁴⁸	3	0	0	148

Continued on next page

³²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_LineCap

³²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Locked

³²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor

³²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray

³²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

³²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

³³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheC

³³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

³³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

³³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform

³³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Visible

³³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Point_X

³³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Point_Y

³³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillColor

³³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillRule

³³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontFamily

³⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

³⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontStyle

³⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

³⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_LineCap

³⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Locked

³⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polygon_Points

³⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor

³⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray

³⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Polygon - Text ³⁴⁹	2	0	0	149
Polygon - TheC ³⁵⁰	0	0	0	151
Polygon - TheT ³⁵¹	1	0	0	150
Polygon - TheZ ³⁵²	2	0	0	149
Polygon - Transform ³⁵³	1	0	0	150
Polygon - Visible ³⁵⁴	0	0	0	151
Polyline - Fill-Color ³⁵⁵	0	0	0	151
Polyline - FillRule ³⁵⁶	0	0	0	151
Polyline - FontFamily ³⁵⁷	0	0	0	151
Polyline - Font-Size ³⁵⁸	2	0	0	149
Polyline - FontStyle ³⁵⁹	0	0	0	151
Polyline - ID ³⁶⁰	5	0	0	146
Polyline - LineCap ³⁶¹	0	0	0	151
Polyline - Locked ³⁶²	0	0	0	151
Polyline - MarkerEnd ³⁶³	0	0	0	151
Polyline - MarkerStart ³⁶⁴	0	0	0	151
Polyline - Points ³⁶⁵	5	0	0	146
Polyline - Stroke-Color ³⁶⁶	1	0	0	150
Polyline - StrokeDashArray ³⁶⁷	1	0	0	150
Polyline - StrokeWidth ³⁶⁸	3	0	0	148
Polyline - Text ³⁶⁹	2	0	0	149
Polyline - TheC ³⁷⁰	0	0	0	151
Polyline - TheT ³⁷¹	1	0	0	150
Polyline - TheZ ³⁷²	2	0	0	149

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³⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text³⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheC³⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT³⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ³⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform³⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Visible³⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillColor³⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillRule³⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontFamily³⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize³⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontStyle³⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID³⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_LineCap³⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Locked³⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polyline_MarkerEnd³⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polyline_MarkerStart³⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polyline_Points³⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor³⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray³⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth³⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text³⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheC³⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT³⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Polyline - Transform ³⁷³	1	0	0	150
Polyline - Visible ³⁷⁴	0	0	0	151
Project - Annotation-Ref ³⁷⁵	0	0	0	151
Project - DatasetRef ³⁷⁶	0	0	0	151
Project - Description ³⁷⁷	0	0	0	151
Project - ExperimenterGroupRef ³⁷⁸	0	0	0	151
Project - ExperimenterRef ³⁷⁹	0	0	0	151
Project - ID ³⁸⁰	0	0	0	151
Project - Name ³⁸¹	0	0	0	151
ROI - Annotation-Ref ³⁸²	0	0	0	151
ROI - Description ³⁸³	1	0	0	150
ROI - ID ³⁸⁴	11	0	0	140
ROI - Name ³⁸⁵	3	0	0	148
ROI - Namespace ³⁸⁶	0	0	0	151
Reagent - AnnotationRef ³⁸⁷	0	0	0	151
Reagent - Description ³⁸⁸	0	0	0	151
Reagent - ID ³⁸⁹	0	0	0	151
Reagent - Name ³⁹⁰	0	0	0	151
Reagent - ReagentIdentifier ³⁹¹	0	0	0	151
Rectangle - Fill-Color ³⁹²	0	0	0	151
Rectangle - Fill-Rule ³⁹³	0	0	0	151
Rectangle - FontFamily ³⁹⁴	0	0	0	151
Rectangle - Font-Size ³⁹⁵	2	0	0	149

Continued on next page

³⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform³⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Visible³⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID³⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DatasetRef_ID³⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Project_Description³⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterGroupRef_ID³⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID³⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Project_ID³⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Project_Name³⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID³⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_Description³⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID³⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_Name³⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_Namespace³⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID³⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Reagent_Description³⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Reagent_ID³⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Reagent_Name³⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Reagent_ReagentIdentifier³⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillColor³⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillRule³⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontFamily³⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Rectangle - FontStyle ³⁹⁶	0	0	0	151
Rectangle - Height ³⁹⁷	7	0	0	144
Rectangle - ID ³⁹⁸	7	0	0	144
Rectangle - LineCap ³⁹⁹	0	0	0	151
Rectangle - Locked ⁴⁰⁰	0	0	0	151
Rectangle - Stroke-Color ⁴⁰¹	0	0	0	151
Rectangle - StrokeDashArray ⁴⁰²	0	0	0	151
Rectangle - StrokeWidth ⁴⁰³	2	0	0	149
Rectangle - Text ⁴⁰⁴	2	0	0	149
Rectangle - TheC ⁴⁰⁵	0	0	0	151
Rectangle - TheT ⁴⁰⁶	1	0	0	150
Rectangle - TheZ ⁴⁰⁷	1	0	0	150
Rectangle - Transform ⁴⁰⁸	1	0	0	150
Rectangle - Visible ⁴⁰⁹	0	0	0	151
Rectangle - Width ⁴¹⁰	7	0	0	144
Rectangle - X ⁴¹¹	7	0	0	144
Rectangle - Y ⁴¹²	7	0	0	144
Screen - Annotation-Ref ⁴¹³	0	0	0	151
Screen - Description ⁴¹⁴	0	0	0	151
Screen - ID ⁴¹⁵	1	0	0	150
Screen - Name ⁴¹⁶	1	0	0	150
Screen - PlateRef ⁴¹⁷	1	0	0	150
Screen - ProtocolDescription ⁴¹⁸	0	0	0	151
Screen - ProtocolIdentifier ⁴¹⁹	0	0	0	151

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³⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontStyle³⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Height³⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID³⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_LineCap⁴⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Locked⁴⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor⁴⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray⁴⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth⁴⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text⁴⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheC⁴⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT⁴⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ⁴⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform⁴⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Visible⁴¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Width⁴¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_X⁴¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Y⁴¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID⁴¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Screen_Description⁴¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Screen_ID⁴¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Screen_Name⁴¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Screen_Screen_PlateRef_ID⁴¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Screen_ProtocolDescription⁴¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Screen_ProtocolIdentifier

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
Screen - ReagentSet-Description ⁴²⁰	0	0	0	151
Screen - ReagentSetIdentifier ⁴²¹	0	0	0	151
Screen - Type ⁴²²	0	0	0	151
StageLabel - Name ⁴²³	2	0	0	149
StageLabel - X ⁴²⁴	1	0	0	150
StageLabel - Y ⁴²⁵	1	0	0	150
StageLabel - Z ⁴²⁶	2	0	0	149
TagAnnotation - AnnotationRef ⁴²⁷	0	0	0	151
TagAnnotation - Description ⁴²⁸	0	0	0	151
TagAnnotation - ID ⁴²⁹	0	0	0	151
TagAnnotation - Namespace ⁴³⁰	0	0	0	151
TagAnnotation - Value ⁴³¹	0	0	0	151
TermAnnotation - AnnotationRef ⁴³²	0	0	0	151
TermAnnotation - Description ⁴³³	0	0	0	151
TermAnnotation - ID ⁴³⁴	0	0	0	151
TermAnnotation - Namespace ⁴³⁵	0	0	0	151
TermAnnotation - Value ⁴³⁶	0	0	0	151
TiffData - FirstC ⁴³⁷	0	0	0	151
TiffData - FirstT ⁴³⁸	0	0	0	151
TiffData - FirstZ ⁴³⁹	0	0	0	151
TiffData - IFD ⁴⁴⁰	0	0	0	151
TiffData - PlaneCount ⁴⁴¹	0	0	0	151

Continued on next page

⁴²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Screen_ReagentSetDescription

⁴²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Screen_ReagentSetIdentifier

⁴²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Screen_Type

⁴²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_Name

⁴²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_X

⁴²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_Y

⁴²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_Z

⁴²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID

⁴²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Description

⁴²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID

⁴³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace

⁴³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#TagAnnotation_Value

⁴³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID

⁴³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Description

⁴³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID

⁴³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace

⁴³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#TermAnnotation_Value

⁴³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TiffData_FirstC

⁴³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TiffData_FirstT

⁴³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TiffData_FirstZ

⁴⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TiffData_IFD

⁴⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TiffData_PlaneCount

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
TimestampAnnotation - AnnotationRef ⁴⁴²	0	0	0	151
TimestampAnnotation - Description ⁴⁴³	0	0	0	151
TimestampAnnotation - ID ⁴⁴⁴	0	0	0	151
TimestampAnnotation - Namespace ⁴⁴⁵	0	0	0	151
TimestampAnnotation - Value ⁴⁴⁶	0	0	0	151
TransmittanceRange - CutIn ⁴⁴⁷	5	0	0	146
TransmittanceRange - CutInTolerance ⁴⁴⁸	1	0	0	150
TransmittanceRange - CutOut ⁴⁴⁹	5	0	0	146
TransmittanceRange - CutOutTolerance ⁴⁵⁰	1	0	0	150
TransmittanceRange - Transmittance ⁴⁵¹	1	0	0	150
UUID - FileName ⁴⁵²	0	0	0	151
UUID - Value ⁴⁵³	0	0	0	151
Well - Annotation-Ref ⁴⁵⁴	0	0	0	151
Well - Color ⁴⁵⁵	0	0	0	151
Well - Column ⁴⁵⁶	10	0	0	141
Well - ExternalDescription ⁴⁵⁷	0	0	0	151
Well - ExternalIdentifier ⁴⁵⁸	0	0	0	151
Well - ID ⁴⁵⁹	10	0	0	141
Well - ReagentRef ⁴⁶⁰	0	0	0	151
Well - Row ⁴⁶¹	10	0	0	141
Well - Type ⁴⁶²	0	0	0	151
WellSample - AnnotationRef ⁴⁶³	0	0	0	151
WellSample - ID ⁴⁶⁴	10	0	0	141

Continued on next page

⁴⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID⁴⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Description⁴⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID⁴⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace⁴⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#TimestampAnnotation_Value⁴⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutIn⁴⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutInTolerance⁴⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutOut⁴⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutOutTolerance⁴⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_Transmittance⁴⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TiffData_TiffData_UUID_FileName⁴⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#UniversallyUniqueIdentifier⁴⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID⁴⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Color⁴⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column⁴⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ExternalDescription⁴⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ExternalIdentifier⁴⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID⁴⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#ReagentRef_ID⁴⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row⁴⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Type⁴⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID⁴⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

Table 19.2 – continued from previous page

Field	Supported	Unsupported	Partial	Unknown/Missing
WellSample - ImageRef ⁴⁶⁵	10	0	0	141
WellSample - Index ⁴⁶⁶	10	0	0	141
WellSample - PositionX ⁴⁶⁷	4	0	0	147
WellSample - PositionY ⁴⁶⁸	4	0	0	147
WellSample - Timepoint ⁴⁶⁹	0	0	0	151
XMLAnnotation - AnnotationRef ⁴⁷⁰	0	0	0	151
XMLAnnotation - ID ⁴⁷¹	0	0	0	151
XMLAnnotation - Namespace ⁴⁷²	0	0	0	151
XMLAnnotation - Value ⁴⁷³	0	0	0	151

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 model⁴⁷⁴. 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 473 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 Olympus Slidebook format reader:

- Channel : ID⁴⁷⁵
- Channel : NDFilter⁴⁷⁶
- Channel : Name⁴⁷⁷
- Channel : SamplesPerPixel⁴⁷⁸
- Image : AcquisitionDate⁴⁷⁹
- Image : Description⁴⁸⁰

⁴⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

⁴⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

⁴⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionX

⁴⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionY

⁴⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Timepoint

⁴⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#AnnotationRef_ID

⁴⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_ID

⁴⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#Annotation_Namespace

⁴⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SA_xsd.html#XMLAnnotation_Value

⁴⁷⁴<http://www.openmicroscopy.org/site/support/ome-model/>

⁴⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁴⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_NDFilter

⁴⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

⁴⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁴⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁴⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

- Image : ID⁴⁸¹
- Image : InstrumentRef⁴⁸²
- Image : Name⁴⁸³
- Instrument : ID⁴⁸⁴
- Objective : Correction⁴⁸⁵
- Objective : ID⁴⁸⁶
- Objective : Immersion⁴⁸⁷
- Objective : Model⁴⁸⁸
- Objective : NominalMagnification⁴⁸⁹
- ObjectiveSettings : ID⁴⁹⁰
- Pixels : BinDataBigEndian⁴⁹¹
- Pixels : DimensionOrder⁴⁹²
- Pixels : ID⁴⁹³
- Pixels : PhysicalSizeX⁴⁹⁴
- Pixels : PhysicalSizeY⁴⁹⁵
- Pixels : PhysicalSizeZ⁴⁹⁶
- Pixels : SizeC⁴⁹⁷
- Pixels : SizeT⁴⁹⁸
- Pixels : SizeX⁴⁹⁹
- Pixels : SizeY⁵⁰⁰
- Pixels : SizeZ⁵⁰¹
- Pixels : Type⁵⁰²
- Plane : ExposureTime⁵⁰³
- Plane : TheC⁵⁰⁴
- Plane : TheT⁵⁰⁵
- Plane : TheZ⁵⁰⁶

⁴⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁴⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

⁴⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁴⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

⁴⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

⁴⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

⁴⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

⁴⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

⁴⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

⁴⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁴⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁴⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁴⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁴⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁴⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁴⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁵⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁵⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁵⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁵⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

⁵⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁵⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁵⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

Total supported: 32

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](#)⁵⁰⁷. 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 473 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 AIM format reader:

- Channel : ID⁵⁰⁸
- Channel : SamplesPerPixel⁵⁰⁹
- Image : AcquisitionDate⁵¹⁰
- Image : ID⁵¹¹
- Image : Name⁵¹²
- Pixels : BinDataBigEndian⁵¹³
- Pixels : DimensionOrder⁵¹⁴
- Pixels : ID⁵¹⁵
- Pixels : PhysicalSizeX⁵¹⁶
- Pixels : PhysicalSizeY⁵¹⁷
- Pixels : PhysicalSizeZ⁵¹⁸
- Pixels : SizeC⁵¹⁹
- Pixels : SizeT⁵²⁰
- Pixels : SizeX⁵²¹
- Pixels : SizeY⁵²²
- Pixels : SizeZ⁵²³
- Pixels : Type⁵²⁴

⁵⁰⁷<http://www.openmicroscopy.org/site/support/ome-model/>

⁵⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁵⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁵¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁵¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁵¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁵¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁵¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁵¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁵¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁵¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁵¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁵¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁵²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁵²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁵²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁵²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁵²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

- Plane : TheC⁵²⁵
- Plane : TheT⁵²⁶
- Plane : TheZ⁵²⁷

Total supported: 20

Total unknown or missing: 453

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](#)⁵²⁸. 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 473 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 Alicona AL3D format reader:

- Channel : ID⁵²⁹
- Channel : SamplesPerPixel⁵³⁰
- Detector : ID⁵³¹
- Detector : Type⁵³²
- DetectorSettings : ID⁵³³
- DetectorSettings : Voltage⁵³⁴
- Image : AcquisitionDate⁵³⁵
- Image : ID⁵³⁶
- Image : InstrumentRef⁵³⁷
- Image : Name⁵³⁸
- Instrument : ID⁵³⁹
- Objective : CalibratedMagnification⁵⁴⁰
- Objective : Correction⁵⁴¹
- Objective : ID⁵⁴²

⁵²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁵²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁵²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁵²⁸<http://www.openmicroscopy.org/site/support/ome-model/>

⁵²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁵³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁵³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

⁵³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

⁵³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

⁵³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Voltage

⁵³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁵³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁵³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

⁵³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁵³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

⁵⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification

⁵⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

⁵⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

- Objective : Immersion⁵⁴³
- Objective : WorkingDistance⁵⁴⁴
- ObjectiveSettings : ID⁵⁴⁵
- Pixels : BinDataBigEndian⁵⁴⁶
- Pixels : DimensionOrder⁵⁴⁷
- Pixels : ID⁵⁴⁸
- Pixels : PhysicalSizeX⁵⁴⁹
- Pixels : PhysicalSizeY⁵⁵⁰
- Pixels : SizeC⁵⁵¹
- Pixels : SizeT⁵⁵²
- Pixels : SizeX⁵⁵³
- Pixels : SizeY⁵⁵⁴
- Pixels : SizeZ⁵⁵⁵
- Pixels : Type⁵⁵⁶
- Plane : TheC⁵⁵⁷
- Plane : TheT⁵⁵⁸
- Plane : TheZ⁵⁵⁹

Total supported: 31

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](#)⁵⁶⁰. 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 473 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%).

⁵⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

⁵⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_WorkingDistance

⁵⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

⁵⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁵⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁵⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁵⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁵⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁵⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁵⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁵⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁵⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁵⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁵⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁵⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁵⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁵⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁵⁶⁰<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Amersham Biosciences GEL format reader:

- Channel : ID⁵⁶¹
- Channel : SamplesPerPixel⁵⁶²
- Image : AcquisitionDate⁵⁶³
- Image : ID⁵⁶⁴
- Image : Name⁵⁶⁵
- Pixels : BinDataBigEndian⁵⁶⁶
- Pixels : DimensionOrder⁵⁶⁷
- Pixels : ID⁵⁶⁸
- Pixels : PhysicalSizeX⁵⁶⁹
- Pixels : PhysicalSizeY⁵⁷⁰
- Pixels : SizeC⁵⁷¹
- Pixels : SizeT⁵⁷²
- Pixels : SizeX⁵⁷³
- Pixels : SizeY⁵⁷⁴
- Pixels : SizeZ⁵⁷⁵
- Pixels : Type⁵⁷⁶
- Plane : TheC⁵⁷⁷
- Plane : TheT⁵⁷⁸
- Plane : TheZ⁵⁷⁹

Total supported: 19

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](#)⁵⁸⁰. 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.

⁵⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁵⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁵⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁵⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁵⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁵⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁵⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁵⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁵⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁵⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁵⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁵⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁵⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁵⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁵⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁵⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁵⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁵⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁵⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁵⁸⁰<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 473 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 Amira format reader:**

- Channel : ID⁵⁸¹
- Channel : SamplesPerPixel⁵⁸²
- Image : AcquisitionDate⁵⁸³
- Image : ID⁵⁸⁴
- Image : Name⁵⁸⁵
- Pixels : BinDataBigEndian⁵⁸⁶
- Pixels : DimensionOrder⁵⁸⁷
- Pixels : ID⁵⁸⁸
- Pixels : PhysicalSizeX⁵⁸⁹
- Pixels : PhysicalSizeY⁵⁹⁰
- Pixels : PhysicalSizeZ⁵⁹¹
- Pixels : SizeC⁵⁹²
- Pixels : SizeT⁵⁹³
- Pixels : SizeX⁵⁹⁴
- Pixels : SizeY⁵⁹⁵
- Pixels : SizeZ⁵⁹⁶
- Pixels : Type⁵⁹⁷
- Plane : TheC⁵⁹⁸
- Plane : TheT⁵⁹⁹
- Plane : TheZ⁶⁰⁰

Total supported: 20**Total unknown or missing: 453**⁵⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID⁵⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel⁵⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate⁵⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID⁵⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name⁵⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian⁵⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder⁵⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID⁵⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX⁵⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY⁵⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ⁵⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC⁵⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT⁵⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX⁵⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY⁵⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ⁵⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type⁵⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC⁵⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT⁶⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/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](#)⁶⁰¹. 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 473 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 Analyze 7.5 format reader:

- Channel : ID⁶⁰²
- Channel : SamplesPerPixel⁶⁰³
- Image : AcquisitionDate⁶⁰⁴
- Image : Description⁶⁰⁵
- Image : ID⁶⁰⁶
- Image : Name⁶⁰⁷
- Pixels : BinDataBigEndian⁶⁰⁸
- Pixels : DimensionOrder⁶⁰⁹
- Pixels : ID⁶¹⁰
- Pixels : PhysicalSizeX⁶¹¹
- Pixels : PhysicalSizeY⁶¹²
- Pixels : PhysicalSizeZ⁶¹³
- Pixels : SizeC⁶¹⁴
- Pixels : SizeT⁶¹⁵
- Pixels : SizeX⁶¹⁶
- Pixels : SizeY⁶¹⁷
- Pixels : SizeZ⁶¹⁸
- Pixels : TimeIncrement⁶¹⁹
- Pixels : Type⁶²⁰

⁶⁰¹<http://www.openmicroscopy.org/site/support/ome-model/>

⁶⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁶⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁶⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁶⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

⁶⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁶⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁶⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁶⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁶¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁶¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁶¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁶¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁶¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁶¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁶¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁶¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁶¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁶¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

⁶²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

- Plane : TheC⁶²¹
- Plane : TheT⁶²²
- Plane : TheZ⁶²³

Total supported: 22

Total unknown or missing: 451

19.2.7 SVSReader

This page lists supported metadata fields for the Bio-Formats Aperio SVS format reader.

These fields are from the [OME data model](#)⁶²⁴. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 18 of them (3%).
- Of those, Bio-Formats fully or partially converts 18 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Aperio SVS format reader:

- Channel : ID⁶²⁵
- Channel : SamplesPerPixel⁶²⁶
- Image : AcquisitionDate⁶²⁷
- Image : Description⁶²⁸
- Image : ID⁶²⁹
- Image : Name⁶³⁰
- Pixels : BinDataBigEndian⁶³¹
- Pixels : DimensionOrder⁶³²
- Pixels : ID⁶³³
- Pixels : SizeC⁶³⁴
- Pixels : SizeT⁶³⁵
- Pixels : SizeX⁶³⁶
- Pixels : SizeY⁶³⁷
- Pixels : SizeZ⁶³⁸

⁶²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁶²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁶²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁶²⁴<http://www.openmicroscopy.org/site/support/ome-model/>

⁶²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁶²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁶²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁶²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

⁶²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁶³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁶³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁶³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁶³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁶³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁶³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁶³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁶³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁶³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

- Pixels : Type⁶³⁹
- Plane : TheC⁶⁴⁰
- Plane : TheT⁶⁴¹
- Plane : TheZ⁶⁴²

Total supported: 18

Total unknown or missing: 455

19.2.8 CellWorxReader

This page lists supported metadata fields for the Bio-Formats CellWorx format reader.

These fields are from the [OME data model](#)⁶⁴³. 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 473 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 CellWorx format reader:

- Channel : EmissionWavelength⁶⁴⁴
- Channel : ExcitationWavelength⁶⁴⁵
- Channel : ID⁶⁴⁶
- Channel : Name⁶⁴⁷
- Channel : SamplesPerPixel⁶⁴⁸
- Detector : ID⁶⁴⁹
- DetectorSettings : Gain⁶⁵⁰
- DetectorSettings : ID⁶⁵¹
- Image : AcquisitionDate⁶⁵²
- Image : ID⁶⁵³
- Image : InstrumentRef⁶⁵⁴
- Image : Name⁶⁵⁵
- Instrument : ID⁶⁵⁶

⁶³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁶⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁶⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁶⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁶⁴³<http://www.openmicroscopy.org/site/support/ome-model/>

⁶⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

⁶⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

⁶⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁶⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

⁶⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁶⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

⁶⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

⁶⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

⁶⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁶⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁶⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

⁶⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁶⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

- Microscope : SerialNumber⁶⁵⁷
- Pixels : BinDataBigEndian⁶⁵⁸
- Pixels : DimensionOrder⁶⁵⁹
- Pixels : ID⁶⁶⁰
- Pixels : PhysicalSizeX⁶⁶¹
- Pixels : PhysicalSizeY⁶⁶²
- Pixels : SizeC⁶⁶³
- Pixels : SizeT⁶⁶⁴
- Pixels : SizeX⁶⁶⁵
- Pixels : SizeY⁶⁶⁶
- Pixels : SizeZ⁶⁶⁷
- Pixels : Type⁶⁶⁸
- Plane : TheC⁶⁶⁹
- Plane : TheT⁶⁷⁰
- Plane : TheZ⁶⁷¹
- Plate : ID⁶⁷²
- Plate : Name⁶⁷³
- PlateAcquisition : EndTime⁶⁷⁴
- PlateAcquisition : ID⁶⁷⁵
- PlateAcquisition : MaximumFieldCount⁶⁷⁶
- PlateAcquisition : StartTime⁶⁷⁷
- PlateAcquisition : WellSampleRef⁶⁷⁸
- Well : Column⁶⁷⁹
- Well : ID⁶⁸⁰
- Well : Row⁶⁸¹
- WellSample : ID⁶⁸²

⁶⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

⁶⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁶⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁶⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁶⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁶⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁶⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁶⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁶⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁶⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁶⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁶⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁶⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁶⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁶⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁶⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID

⁶⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Name

⁶⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_EndTime

⁶⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_ID

⁶⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

⁶⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_StartTime

⁶⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSampleRef_ID

⁶⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column

⁶⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID

⁶⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row

⁶⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

- WellSample : ImageRef⁶⁸³
- WellSample : Index⁶⁸⁴
- WellSample : PositionX⁶⁸⁵
- WellSample : PositionY⁶⁸⁶

Total supported: 43

Total unknown or missing: 430

19.2.9 AVIReader

This page lists supported metadata fields for the Bio-Formats Audio Video Interleave format reader.

These fields are from the [OME data model](#)⁶⁸⁷. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Audio Video Interleave format reader:

- Channel : ID⁶⁸⁸
- Channel : SamplesPerPixel⁶⁸⁹
- Image : AcquisitionDate⁶⁹⁰
- Image : ID⁶⁹¹
- Image : Name⁶⁹²
- Pixels : BinDataBigEndian⁶⁹³
- Pixels : DimensionOrder⁶⁹⁴
- Pixels : ID⁶⁹⁵
- Pixels : SizeC⁶⁹⁶
- Pixels : SizeT⁶⁹⁷
- Pixels : SizeX⁶⁹⁸
- Pixels : SizeY⁶⁹⁹
- Pixels : SizeZ⁷⁰⁰

⁶⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

⁶⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

⁶⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionX

⁶⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionY

⁶⁸⁷<http://www.openmicroscopy.org/site/support/ome-model/>

⁶⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁶⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁶⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁶⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁶⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁶⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁶⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁶⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁶⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁶⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁶⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁶⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁷⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

- Pixels : Type⁷⁰¹
- Plane : TheC⁷⁰²
- Plane : TheT⁷⁰³
- Plane : TheZ⁷⁰⁴

Total supported: 17

Total unknown or missing: 456

19.2.10 ARFReader

This page lists supported metadata fields for the Bio-Formats ARF format reader.

These fields are from the [OME data model](#)⁷⁰⁵. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats ARF format reader:

- Channel : ID⁷⁰⁶
- Channel : SamplesPerPixel⁷⁰⁷
- Image : AcquisitionDate⁷⁰⁸
- Image : ID⁷⁰⁹
- Image : Name⁷¹⁰
- Pixels : BinDataBigEndian⁷¹¹
- Pixels : DimensionOrder⁷¹²
- Pixels : ID⁷¹³
- Pixels : SizeC⁷¹⁴
- Pixels : SizeT⁷¹⁵
- Pixels : SizeX⁷¹⁶
- Pixels : SizeY⁷¹⁷
- Pixels : SizeZ⁷¹⁸

⁷⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁷⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁷⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁷⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁷⁰⁵<http://www.openmicroscopy.org/site/support/ome-model/>

⁷⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁷⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁷⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁷⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁷¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁷¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁷¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁷¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁷¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁷¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁷¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁷¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁷¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

- Pixels : Type⁷¹⁹
- Plane : TheC⁷²⁰
- Plane : TheT⁷²¹
- Plane : TheZ⁷²²

Total supported: 17

Total unknown or missing: 456

19.2.11 BDReader

This page lists supported metadata fields for the Bio-Formats BD Pathway format reader.

These fields are from the [OME data model](#)⁷²³. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 55 of them (11%).
- Of those, Bio-Formats fully or partially converts 55 (100%).

Supported fields

These fields are fully supported by the Bio-Formats BD Pathway format reader:

- Channel : EmissionWavelength⁷²⁴
- Channel : ExcitationWavelength⁷²⁵
- Channel : ID⁷²⁶
- Channel : Name⁷²⁷
- Channel : SamplesPerPixel⁷²⁸
- Detector : ID⁷²⁹
- DetectorSettings : Binning⁷³⁰
- DetectorSettings : Gain⁷³¹
- DetectorSettings : ID⁷³²
- DetectorSettings : Offset⁷³³
- Image : AcquisitionDate⁷³⁴
- Image : ID⁷³⁵
- Image : InstrumentRef⁷³⁶

⁷¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁷²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁷²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁷²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁷²³<http://www.openmicroscopy.org/site/support/ome-model/>

⁷²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

⁷²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

⁷²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁷²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

⁷²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁷²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

⁷³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

⁷³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

⁷³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

⁷³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Offset

⁷³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁷³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁷³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

- Image : Name⁷³⁷
- Image : ROIRef⁷³⁸
- Instrument : ID⁷³⁹
- Objective : ID⁷⁴⁰
- Objective : LensNA⁷⁴¹
- Objective : Manufacturer⁷⁴²
- Objective : NominalMagnification⁷⁴³
- ObjectiveSettings : ID⁷⁴⁴
- Pixels : BinDataBigEndian⁷⁴⁵
- Pixels : DimensionOrder⁷⁴⁶
- Pixels : ID⁷⁴⁷
- Pixels : SizeC⁷⁴⁸
- Pixels : SizeT⁷⁴⁹
- Pixels : SizeX⁷⁵⁰
- Pixels : SizeY⁷⁵¹
- Pixels : SizeZ⁷⁵²
- Pixels : Type⁷⁵³
- Plane : DeltaT⁷⁵⁴
- Plane : ExposureTime⁷⁵⁵
- Plane : TheC⁷⁵⁶
- Plane : TheT⁷⁵⁷
- Plane : TheZ⁷⁵⁸
- Plate : ColumnNamingConvention⁷⁵⁹
- Plate : Description⁷⁶⁰
- Plate : ID⁷⁶¹
- Plate : Name⁷⁶²

⁷³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁷³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

⁷³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

⁷⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

⁷⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

⁷⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

⁷⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

⁷⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

⁷⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁷⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁷⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁷⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁷⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁷⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁷⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁷⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁷⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁷⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

⁷⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

⁷⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁷⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁷⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁷⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ColumnNamingConvention

⁷⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Description

⁷⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID

⁷⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Name

- Plate : RowNamingConvention⁷⁶³
- PlateAcquisition : ID⁷⁶⁴
- PlateAcquisition : MaximumFieldCount⁷⁶⁵
- PlateAcquisition : WellSampleRef⁷⁶⁶
- ROI : ID⁷⁶⁷
- Rectangle : Height⁷⁶⁸
- Rectangle : ID⁷⁶⁹
- Rectangle : Width⁷⁷⁰
- Rectangle : X⁷⁷¹
- Rectangle : Y⁷⁷²
- Well : Column⁷⁷³
- Well : ID⁷⁷⁴
- Well : Row⁷⁷⁵
- WellSample : ID⁷⁷⁶
- WellSample : ImageRef⁷⁷⁷
- WellSample : Index⁷⁷⁸

Total supported: 55

Total unknown or missing: 418

19.2.12 SDTReader

This page lists supported metadata fields for the Bio-Formats SPCImage Data format reader.

These fields are from the [OME data model](#)⁷⁷⁹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats SPCImage Data format reader:

- Channel : ID⁷⁸⁰

⁷⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_RowNamingConvention

⁷⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_ID

⁷⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

⁷⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSampleRef_ID

⁷⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

⁷⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Height

⁷⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

⁷⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Width

⁷⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_X

⁷⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Y

⁷⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column

⁷⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID

⁷⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row

⁷⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

⁷⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

⁷⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

⁷⁷⁹<http://www.openmicroscopy.org/site/support/ome-model/>

⁷⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

- Channel : SamplesPerPixel⁷⁸¹
- Image : AcquisitionDate⁷⁸²
- Image : ID⁷⁸³
- Image : Name⁷⁸⁴
- Pixels : BinDataBigEndian⁷⁸⁵
- Pixels : DimensionOrder⁷⁸⁶
- Pixels : ID⁷⁸⁷
- Pixels : SizeC⁷⁸⁸
- Pixels : SizeT⁷⁸⁹
- Pixels : SizeX⁷⁹⁰
- Pixels : SizeY⁷⁹¹
- Pixels : SizeZ⁷⁹²
- Pixels : Type⁷⁹³
- Plane : TheC⁷⁹⁴
- Plane : TheT⁷⁹⁵
- Plane : TheZ⁷⁹⁶

Total supported: 17

Total unknown or missing: 456

19.2.13 BioRadGelReader

This page lists supported metadata fields for the Bio-Formats Bio-Rad GEL format reader.

These fields are from the [OME data model](#)⁷⁹⁷. 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 473 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 Bio-Rad GEL format reader:

- Channel : ID⁷⁹⁸

⁷⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁷⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁷⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁷⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁷⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁷⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁷⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁷⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁷⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁷⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁷⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁷⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁷⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁷⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁷⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁷⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁷⁹⁷<http://www.openmicroscopy.org/site/support/ome-model/>

⁷⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

- Channel : SamplesPerPixel⁷⁹⁹
- Image : AcquisitionDate⁸⁰⁰
- Image : ID⁸⁰¹
- Image : Name⁸⁰²
- Pixels : BinDataBigEndian⁸⁰³
- Pixels : DimensionOrder⁸⁰⁴
- Pixels : ID⁸⁰⁵
- Pixels : PhysicalSizeX⁸⁰⁶
- Pixels : PhysicalSizeY⁸⁰⁷
- Pixels : SizeC⁸⁰⁸
- Pixels : SizeT⁸⁰⁹
- Pixels : SizeX⁸¹⁰
- Pixels : SizeY⁸¹¹
- Pixels : SizeZ⁸¹²
- Pixels : Type⁸¹³
- Plane : TheC⁸¹⁴
- Plane : TheT⁸¹⁵
- Plane : TheZ⁸¹⁶

Total supported: 19

Total unknown or missing: 454

19.2.14 BioRadReader

This page lists supported metadata fields for the Bio-Formats Bio-Rad PIC format reader.

These fields are from the [OME data model](#)⁸¹⁷. 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 473 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%).

⁷⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁸⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁸⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁸⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁸⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁸⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁸⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁸⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁸⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁸⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁸⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁸¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁸¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁸¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁸¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁸¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁸¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁸¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁸¹⁷<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Bio-Rad PIC format reader:

- Channel : ID⁸¹⁸
- Channel : SamplesPerPixel⁸¹⁹
- Detector : Gain⁸²⁰
- Detector : ID⁸²¹
- Detector : Offset⁸²²
- Detector : Type⁸²³
- DetectorSettings : Gain⁸²⁴
- DetectorSettings : ID⁸²⁵
- DetectorSettings : Offset⁸²⁶
- Experiment : ID⁸²⁷
- Experiment : Type⁸²⁸
- Image : AcquisitionDate⁸²⁹
- Image : ID⁸³⁰
- Image : InstrumentRef⁸³¹
- Image : Name⁸³²
- Instrument : ID⁸³³
- Objective : Correction⁸³⁴
- Objective : ID⁸³⁵
- Objective : Immersion⁸³⁶
- Objective : LensNA⁸³⁷
- Objective : Model⁸³⁸
- Objective : NominalMagnification⁸³⁹
- ObjectiveSettings : ID⁸⁴⁰
- Pixels : BinDataBigEndian⁸⁴¹

⁸¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁸¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁸²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Gain

⁸²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

⁸²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Offset

⁸²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

⁸²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

⁸²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

⁸²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Offset

⁸²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_ID

⁸²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_Type

⁸²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁸³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁸³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

⁸³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁸³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

⁸³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

⁸³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

⁸³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

⁸³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

⁸³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

⁸³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

⁸⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

⁸⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

- Pixels : DimensionOrder⁸⁴²
- Pixels : ID⁸⁴³
- Pixels : PhysicalSizeX⁸⁴⁴
- Pixels : PhysicalSizeY⁸⁴⁵
- Pixels : PhysicalSizeZ⁸⁴⁶
- Pixels : SizeC⁸⁴⁷
- Pixels : SizeT⁸⁴⁸
- Pixels : SizeX⁸⁴⁹
- Pixels : SizeY⁸⁵⁰
- Pixels : SizeZ⁸⁵¹
- Pixels : Type⁸⁵²
- Plane : TheC⁸⁵³
- Plane : TheT⁸⁵⁴
- Plane : TheZ⁸⁵⁵

Total supported: 38

Total unknown or missing: 435

19.2.15 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](#)⁸⁵⁶. 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 473 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 Bitplane Imaris 5.5 (HDF) format reader:

- Channel : Color⁸⁵⁷
- Channel : ID⁸⁵⁸
- Channel : SamplesPerPixel⁸⁵⁹

⁸⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁸⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁸⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁸⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁸⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁸⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁸⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁸⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁸⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁸⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁸⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁸⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁸⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁸⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁸⁵⁶<http://www.openmicroscopy.org/site/support/ome-model/>

⁸⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Color

⁸⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁸⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

- DetectorSettings : Gain⁸⁶⁰
- Image : AcquisitionDate⁸⁶¹
- Image : ID⁸⁶²
- Image : Name⁸⁶³
- Pixels : BinDataBigEndian⁸⁶⁴
- Pixels : DimensionOrder⁸⁶⁵
- Pixels : ID⁸⁶⁶
- Pixels : PhysicalSizeX⁸⁶⁷
- Pixels : PhysicalSizeY⁸⁶⁸
- Pixels : PhysicalSizeZ⁸⁶⁹
- Pixels : SizeC⁸⁷⁰
- Pixels : SizeT⁸⁷¹
- Pixels : SizeX⁸⁷²
- Pixels : SizeY⁸⁷³
- Pixels : SizeZ⁸⁷⁴
- Pixels : Type⁸⁷⁵
- Plane : TheC⁸⁷⁶
- Plane : TheT⁸⁷⁷
- Plane : TheZ⁸⁷⁸

Total supported: 22

Total unknown or missing: 451

19.2.16 BrukerReader

This page lists supported metadata fields for the Bio-Formats Bruker format reader.

These fields are from the [OME data model](#)⁸⁷⁹. 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 473 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%).

⁸⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

⁸⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁸⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁸⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁸⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁸⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁸⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁸⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁸⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁸⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁸⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁸⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁸⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁸⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁸⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁸⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁸⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁸⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁸⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁸⁷⁹<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Bruker format reader:

- Channel : ID⁸⁸⁰
- Channel : SamplesPerPixel⁸⁸¹
- Experimenter : ID⁸⁸²
- Experimenter : Institution⁸⁸³
- Experimenter : LastName⁸⁸⁴
- Image : AcquisitionDate⁸⁸⁵
- Image : ExperimenterRef⁸⁸⁶
- Image : ID⁸⁸⁷
- Image : Name⁸⁸⁸
- Pixels : BinDataBigEndian⁸⁸⁹
- Pixels : DimensionOrder⁸⁹⁰
- Pixels : ID⁸⁹¹
- Pixels : SizeC⁸⁹²
- Pixels : SizeT⁸⁹³
- Pixels : SizeX⁸⁹⁴
- Pixels : SizeY⁸⁹⁵
- Pixels : SizeZ⁸⁹⁶
- Pixels : Type⁸⁹⁷
- Plane : TheC⁸⁹⁸
- Plane : TheT⁸⁹⁹
- Plane : TheZ⁹⁰⁰

Total supported: 21

Total unknown or missing: 452

-
- ⁸⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID
- ⁸⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel
- ⁸⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_ID
- ⁸⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_Institution
- ⁸⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_LastName
- ⁸⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate
- ⁸⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID
- ⁸⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID
- ⁸⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name
- ⁸⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian
- ⁸⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder
- ⁸⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID
- ⁸⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC
- ⁸⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT
- ⁸⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX
- ⁸⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY
- ⁸⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ
- ⁸⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type
- ⁸⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC
- ⁸⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT
- ⁹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.17 BurleighReader

This page lists supported metadata fields for the Bio-Formats Burleigh format reader.

These fields are from the [OME data model](#)⁹⁰¹. 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 473 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 Burleigh format reader:

- Channel : ID⁹⁰²
- Channel : SamplesPerPixel⁹⁰³
- Image : AcquisitionDate⁹⁰⁴
- Image : ID⁹⁰⁵
- Image : Name⁹⁰⁶
- Pixels : BinDataBigEndian⁹⁰⁷
- Pixels : DimensionOrder⁹⁰⁸
- Pixels : ID⁹⁰⁹
- Pixels : PhysicalSizeX⁹¹⁰
- Pixels : PhysicalSizeY⁹¹¹
- Pixels : PhysicalSizeZ⁹¹²
- Pixels : SizeC⁹¹³
- Pixels : SizeT⁹¹⁴
- Pixels : SizeX⁹¹⁵
- Pixels : SizeY⁹¹⁶
- Pixels : SizeZ⁹¹⁷
- Pixels : Type⁹¹⁸
- Plane : TheC⁹¹⁹

⁹⁰¹<http://www.openmicroscopy.org/site/support/ome-model/>

⁹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

- Plane : TheT⁹²⁰
- Plane : TheZ⁹²¹

Total supported: 20

Total unknown or missing: 453

19.2.18 DNGReader

This page lists supported metadata fields for the Bio-Formats DNG format reader.

These fields are from the [OME data model](#)⁹²². 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats DNG format reader:

- Channel : ID⁹²³
- Channel : SamplesPerPixel⁹²⁴
- Image : AcquisitionDate⁹²⁵
- Image : ID⁹²⁶
- Image : Name⁹²⁷
- Pixels : BinDataBigEndian⁹²⁸
- Pixels : DimensionOrder⁹²⁹
- Pixels : ID⁹³⁰
- Pixels : SizeC⁹³¹
- Pixels : SizeT⁹³²
- Pixels : SizeX⁹³³
- Pixels : SizeY⁹³⁴
- Pixels : SizeZ⁹³⁵
- Pixels : Type⁹³⁶
- Plane : TheC⁹³⁷

⁹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁹²²<http://www.openmicroscopy.org/site/support/ome-model/>

⁹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

- Plane : TheT⁹³⁸
- Plane : TheZ⁹³⁹

Total supported: 17

Total unknown or missing: 456

19.2.19 CellomicsReader

This page lists supported metadata fields for the Bio-Formats Cellomics C01 format reader.

These fields are from the [OME data model](#)⁹⁴⁰. 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 473 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 Cellomics C01 format reader:

- Channel : ID⁹⁴¹
- Channel : SamplesPerPixel⁹⁴²
- Image : AcquisitionDate⁹⁴³
- Image : ID⁹⁴⁴
- Image : Name⁹⁴⁵
- Pixels : BinDataBigEndian⁹⁴⁶
- Pixels : DimensionOrder⁹⁴⁷
- Pixels : ID⁹⁴⁸
- Pixels : PhysicalSizeX⁹⁴⁹
- Pixels : PhysicalSizeY⁹⁵⁰
- Pixels : SizeC⁹⁵¹
- Pixels : SizeT⁹⁵²
- Pixels : SizeX⁹⁵³
- Pixels : SizeY⁹⁵⁴
- Pixels : SizeZ⁹⁵⁵

⁹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁹⁴⁰<http://www.openmicroscopy.org/site/support/ome-model/>

⁹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

- Pixels : Type⁹⁵⁶
- Plane : TheC⁹⁵⁷
- Plane : TheT⁹⁵⁸
- Plane : TheZ⁹⁵⁹
- Plate : ColumnNamingConvention⁹⁶⁰
- Plate : ID⁹⁶¹
- Plate : Name⁹⁶²
- Plate : RowNamingConvention⁹⁶³
- Well : Column⁹⁶⁴
- Well : ID⁹⁶⁵
- Well : Row⁹⁶⁶
- WellSample : ID⁹⁶⁷
- WellSample : ImageRef⁹⁶⁸
- WellSample : Index⁹⁶⁹

Total supported: 29

Total unknown or missing: 444

19.2.20 CellSensReader

This page lists supported metadata fields for the Bio-Formats CellSens VSI format reader.

These fields are from the [OME data model](#)⁹⁷⁰. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats CellSens VSI format reader:

- Channel : ID⁹⁷¹
- Channel : SamplesPerPixel⁹⁷²
- Image : AcquisitionDate⁹⁷³

⁹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ColumnNamingConvention

⁹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID

⁹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Name

⁹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_RowNamingConvention

⁹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column

⁹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID

⁹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row

⁹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

⁹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

⁹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

⁹⁷⁰<http://www.openmicroscopy.org/site/support/ome-model/>

⁹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

- Image : ID⁹⁷⁴
- Image : Name⁹⁷⁵
- Pixels : BinDataBigEndian⁹⁷⁶
- Pixels : DimensionOrder⁹⁷⁷
- Pixels : ID⁹⁷⁸
- Pixels : SizeC⁹⁷⁹
- Pixels : SizeT⁹⁸⁰
- Pixels : SizeX⁹⁸¹
- Pixels : SizeY⁹⁸²
- Pixels : SizeZ⁹⁸³
- Pixels : Type⁹⁸⁴
- Plane : TheC⁹⁸⁵
- Plane : TheT⁹⁸⁶
- Plane : TheZ⁹⁸⁷

Total supported: 17

Total unknown or missing: 456

19.2.21 DeltavisionReader

This page lists supported metadata fields for the Bio-Formats Deltavision format reader.

These fields are from the [OME data model](#)⁹⁸⁸. 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 473 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 Deltavision format reader:

- Channel : EmissionWavelength⁹⁸⁹
- Channel : ExcitationWavelength⁹⁹⁰
- Channel : ID⁹⁹¹

⁹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

⁹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁹⁸⁸<http://www.openmicroscopy.org/site/support/ome-model/>

⁹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

⁹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

⁹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

- Channel : NDFilter⁹⁹²
- Channel : Name⁹⁹³
- Channel : SamplesPerPixel⁹⁹⁴
- Detector : ID⁹⁹⁵
- Detector : Model⁹⁹⁶
- Detector : Type⁹⁹⁷
- DetectorSettings : Binning⁹⁹⁸
- DetectorSettings : Gain⁹⁹⁹
- DetectorSettings : ID¹⁰⁰⁰
- DetectorSettings : ReadOutRate¹⁰⁰¹
- Image : AcquisitionDate¹⁰⁰²
- Image : Description¹⁰⁰³
- Image : ID¹⁰⁰⁴
- Image : InstrumentRef¹⁰⁰⁵
- Image : Name¹⁰⁰⁶
- ImagingEnvironment : Temperature¹⁰⁰⁷
- Instrument : ID¹⁰⁰⁸
- Objective : CalibratedMagnification¹⁰⁰⁹
- Objective : Correction¹⁰¹⁰
- Objective : ID¹⁰¹¹
- Objective : Immersion¹⁰¹²
- Objective : LensNA¹⁰¹³
- Objective : Manufacturer¹⁰¹⁴
- Objective : Model¹⁰¹⁵
- Objective : NominalMagnification¹⁰¹⁶
- Objective : WorkingDistance¹⁰¹⁷

⁹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_NDFilter

⁹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

⁹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

⁹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

⁹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

⁹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

⁹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

¹⁰⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

¹⁰⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ReadOutRate

¹⁰⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁰⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

¹⁰⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁰⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹⁰⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁰⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

¹⁰⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹⁰⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification

¹⁰¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

¹⁰¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

¹⁰¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

¹⁰¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

¹⁰¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹⁰¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁰¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

¹⁰¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_WorkingDistance

- ObjectiveSettings : ID¹⁰¹⁸
- Pixels : BinDataBigEndian¹⁰¹⁹
- Pixels : DimensionOrder¹⁰²⁰
- Pixels : ID¹⁰²¹
- Pixels : PhysicalSizeX¹⁰²²
- Pixels : PhysicalSizeY¹⁰²³
- Pixels : PhysicalSizeZ¹⁰²⁴
- Pixels : SizeC¹⁰²⁵
- Pixels : SizeT¹⁰²⁶
- Pixels : SizeX¹⁰²⁷
- Pixels : SizeY¹⁰²⁸
- Pixels : SizeZ¹⁰²⁹
- Pixels : Type¹⁰³⁰
- Plane : DeltaT¹⁰³¹
- Plane : ExposureTime¹⁰³²
- Plane : PositionX¹⁰³³
- Plane : PositionY¹⁰³⁴
- Plane : PositionZ¹⁰³⁵
- Plane : TheC¹⁰³⁶
- Plane : TheT¹⁰³⁷
- Plane : TheZ¹⁰³⁸

Total supported: 50

Total unknown or missing: 423

19.2.22 DicomReader

This page lists supported metadata fields for the Bio-Formats DICOM format reader.

These fields are from the [OME data model](#)¹⁰³⁹. 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.

¹⁰¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

¹⁰¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁰²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁰²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁰²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁰²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁰²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁰²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁰²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁰²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁰²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁰²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁰³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁰³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

¹⁰³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

¹⁰³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

¹⁰³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

¹⁰³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

¹⁰³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁰³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁰³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁰³⁹<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 473 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 DICOM format reader:

- Channel : ID¹⁰⁴⁰
- Channel : SamplesPerPixel¹⁰⁴¹
- Image : AcquisitionDate¹⁰⁴²
- Image : Description¹⁰⁴³
- Image : ID¹⁰⁴⁴
- Image : Name¹⁰⁴⁵
- Pixels : BinDataBigEndian¹⁰⁴⁶
- Pixels : DimensionOrder¹⁰⁴⁷
- Pixels : ID¹⁰⁴⁸
- Pixels : PhysicalSizeX¹⁰⁴⁹
- Pixels : PhysicalSizeY¹⁰⁵⁰
- Pixels : PhysicalSizeZ¹⁰⁵¹
- Pixels : SizeC¹⁰⁵²
- Pixels : SizeT¹⁰⁵³
- Pixels : SizeX¹⁰⁵⁴
- Pixels : SizeY¹⁰⁵⁵
- Pixels : SizeZ¹⁰⁵⁶
- Pixels : Type¹⁰⁵⁷
- Plane : TheC¹⁰⁵⁸
- Plane : TheT¹⁰⁵⁹
- Plane : TheZ¹⁰⁶⁰

Total supported: 21

Total unknown or missing: 452

¹⁰⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID
¹⁰⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel
¹⁰⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate
¹⁰⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description
¹⁰⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID
¹⁰⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name
¹⁰⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian
¹⁰⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder
¹⁰⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID
¹⁰⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX
¹⁰⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY
¹⁰⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ
¹⁰⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC
¹⁰⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT
¹⁰⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX
¹⁰⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY
¹⁰⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ
¹⁰⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type
¹⁰⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC
¹⁰⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT
¹⁰⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.23 Ecat7Reader

This page lists supported metadata fields for the Bio-Formats ECAT7 format reader.

These fields are from the [OME data model](#)¹⁰⁶¹. 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 473 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 ECAT7 format reader:

- Channel : ID¹⁰⁶²
- Channel : SamplesPerPixel¹⁰⁶³
- Image : AcquisitionDate¹⁰⁶⁴
- Image : Description¹⁰⁶⁵
- Image : ID¹⁰⁶⁶
- Image : Name¹⁰⁶⁷
- Pixels : BinDataBigEndian¹⁰⁶⁸
- Pixels : DimensionOrder¹⁰⁶⁹
- Pixels : ID¹⁰⁷⁰
- Pixels : PhysicalSizeX¹⁰⁷¹
- Pixels : PhysicalSizeY¹⁰⁷²
- Pixels : PhysicalSizeZ¹⁰⁷³
- Pixels : SizeC¹⁰⁷⁴
- Pixels : SizeT¹⁰⁷⁵
- Pixels : SizeX¹⁰⁷⁶
- Pixels : SizeY¹⁰⁷⁷
- Pixels : SizeZ¹⁰⁷⁸
- Pixels : Type¹⁰⁷⁹

¹⁰⁶¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁰⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁰⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁰⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁰⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

¹⁰⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁰⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁰⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁰⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁰⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁰⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁰⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁰⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁰⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁰⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁰⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁰⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁰⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁰⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

- Plane : TheC¹⁰⁸⁰
- Plane : TheT¹⁰⁸¹
- Plane : TheZ¹⁰⁸²

Total supported: 21

Total unknown or missing: 452

19.2.24 EPSReader

This page lists supported metadata fields for the Bio-Formats Encapsulated PostScript format reader.

These fields are from the [OME data model](#)¹⁰⁸³. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Encapsulated PostScript format reader:

- Channel : ID¹⁰⁸⁴
- Channel : SamplesPerPixel¹⁰⁸⁵
- Image : AcquisitionDate¹⁰⁸⁶
- Image : ID¹⁰⁸⁷
- Image : Name¹⁰⁸⁸
- Pixels : BinDataBigEndian¹⁰⁸⁹
- Pixels : DimensionOrder¹⁰⁹⁰
- Pixels : ID¹⁰⁹¹
- Pixels : SizeC¹⁰⁹²
- Pixels : SizeT¹⁰⁹³
- Pixels : SizeX¹⁰⁹⁴
- Pixels : SizeY¹⁰⁹⁵
- Pixels : SizeZ¹⁰⁹⁶
- Pixels : Type¹⁰⁹⁷

¹⁰⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁰⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁰⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁰⁸³<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁰⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁰⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁰⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁰⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁰⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁰⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁰⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁰⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁰⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁰⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁰⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁰⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁰⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁰⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

- Plane : TheC¹⁰⁹⁸
- Plane : TheT¹⁰⁹⁹
- Plane : TheZ¹¹⁰⁰

Total supported: 17

Total unknown or missing: 456

19.2.25 FlexReader

This page lists supported metadata fields for the Bio-Formats Evotec Flex format reader.

These fields are from the [OME data model](#)¹¹⁰¹. 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 473 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 Evotec Flex format reader:

- Channel : ID¹¹⁰²
- Channel : LightSourceSettingsID¹¹⁰³
- Channel : Name¹¹⁰⁴
- Channel : SamplesPerPixel¹¹⁰⁵
- Detector : ID¹¹⁰⁶
- Detector : Type¹¹⁰⁷
- DetectorSettings : Binning¹¹⁰⁸
- DetectorSettings : ID¹¹⁰⁹
- Dichroic : ID¹¹¹⁰
- Dichroic : Model¹¹¹¹
- Filter : FilterWheel¹¹¹²
- Filter : ID¹¹¹³
- Filter : Model¹¹¹⁴
- Image : AcquisitionDate¹¹¹⁵

¹⁰⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁰⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹¹⁰¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_ID

¹¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

¹¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

¹¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

¹¹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

¹¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

¹¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dichroic_ID

¹¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹¹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_FilterWheel

¹¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_ID

¹¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

- Image : ID¹¹¹⁶
- Image : InstrumentRef¹¹¹⁷
- Image : Name¹¹¹⁸
- Instrument : ID¹¹¹⁹
- Laser : ID¹¹²⁰
- Laser : LaserMedium¹¹²¹
- Laser : Type¹¹²²
- Laser : Wavelength¹¹²³
- LightPath : DichroicRef¹¹²⁴
- LightPath : EmissionFilterRef¹¹²⁵
- LightPath : ExcitationFilterRef¹¹²⁶
- Objective : CalibratedMagnification¹¹²⁷
- Objective : Correction¹¹²⁸
- Objective : ID¹¹²⁹
- Objective : Immersion¹¹³⁰
- Objective : LensNA¹¹³¹
- ObjectiveSettings : ID¹¹³²
- Pixels : BinDataBigEndian¹¹³³
- Pixels : DimensionOrder¹¹³⁴
- Pixels : ID¹¹³⁵
- Pixels : PhysicalSizeX¹¹³⁶
- Pixels : PhysicalSizeY¹¹³⁷
- Pixels : SizeC¹¹³⁸
- Pixels : SizeT¹¹³⁹
- Pixels : SizeX¹¹⁴⁰
- Pixels : SizeY¹¹⁴¹

¹¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹¹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

¹¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_LaserMedium

¹¹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Type

¹¹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Wavelength

¹¹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DichroicRef_ID

¹¹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

¹¹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

¹¹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification

¹¹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

¹¹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

¹¹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

¹¹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

¹¹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

¹¹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹¹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹¹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹¹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹¹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹¹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹¹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹¹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹¹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹¹⁴²
- Pixels : Type¹¹⁴³
- Plane : DeltaT¹¹⁴⁴
- Plane : ExposureTime¹¹⁴⁵
- Plane : PositionX¹¹⁴⁶
- Plane : PositionY¹¹⁴⁷
- Plane : PositionZ¹¹⁴⁸
- Plane : TheC¹¹⁴⁹
- Plane : TheT¹¹⁵⁰
- Plane : TheZ¹¹⁵¹
- Plate : ColumnNamingConvention¹¹⁵²
- Plate : ExternalIdentifier¹¹⁵³
- Plate : ID¹¹⁵⁴
- Plate : Name¹¹⁵⁵
- Plate : RowNamingConvention¹¹⁵⁶
- PlateAcquisition : ID¹¹⁵⁷
- PlateAcquisition : MaximumFieldCount¹¹⁵⁸
- PlateAcquisition : StartTime¹¹⁵⁹
- PlateAcquisition : WellSampleRef¹¹⁶⁰
- Well : Column¹¹⁶¹
- Well : ID¹¹⁶²
- Well : Row¹¹⁶³
- WellSample : ID¹¹⁶⁴
- WellSample : ImageRef¹¹⁶⁵
- WellSample : Index¹¹⁶⁶
- WellSample : PositionX¹¹⁶⁷

¹¹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹¹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹¹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

¹¹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

¹¹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

¹¹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

¹¹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

¹¹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹¹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹¹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹¹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ColumnNamingConvention

¹¹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ExternalIdentifier

¹¹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID

¹¹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Name

¹¹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_RowNamingConvention

¹¹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_ID

¹¹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

¹¹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_StartTime

¹¹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSampleRef_ID

¹¹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column

¹¹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID

¹¹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row

¹¹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

¹¹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

¹¹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

¹¹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionX

- WellSample : PositionY¹¹⁶⁸

Total supported: 67

Total unknown or missing: 406

19.2.26 FEIReader

This page lists supported metadata fields for the Bio-Formats FEI/Philips format reader.

These fields are from the [OME data model](#)¹¹⁶⁹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats FEI/Philips format reader:

- Channel : ID¹¹⁷⁰
- Channel : SamplesPerPixel¹¹⁷¹
- Image : AcquisitionDate¹¹⁷²
- Image : ID¹¹⁷³
- Image : Name¹¹⁷⁴
- Pixels : BinDataBigEndian¹¹⁷⁵
- Pixels : DimensionOrder¹¹⁷⁶
- Pixels : ID¹¹⁷⁷
- Pixels : SizeC¹¹⁷⁸
- Pixels : SizeT¹¹⁷⁹
- Pixels : SizeX¹¹⁸⁰
- Pixels : SizeY¹¹⁸¹
- Pixels : SizeZ¹¹⁸²
- Pixels : Type¹¹⁸³
- Plane : TheC¹¹⁸⁴
- Plane : TheT¹¹⁸⁵

¹¹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionY

¹¹⁶⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹¹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹¹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹¹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹¹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹¹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹¹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹¹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹¹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹¹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹¹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹¹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹¹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹¹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹¹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹¹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹¹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

- Plane : TheZ¹¹⁸⁶

Total supported: 17

Total unknown or missing: 456

19.2.27 FEITiffReader

This page lists supported metadata fields for the Bio-Formats FEI TIFF format reader.

These fields are from the [OME data model](#)¹¹⁸⁷. 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 473 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 FEI TIFF format reader:

- Channel : ID¹¹⁸⁸
- Channel : SamplesPerPixel¹¹⁸⁹
- Detector : ID¹¹⁹⁰
- Detector : Model¹¹⁹¹
- Detector : Type¹¹⁹²
- Experimenter : ID¹¹⁹³
- Experimenter : LastName¹¹⁹⁴
- Image : AcquisitionDate¹¹⁹⁵
- Image : Description¹¹⁹⁶
- Image : ID¹¹⁹⁷
- Image : InstrumentRef¹¹⁹⁸
- Image : Name¹¹⁹⁹
- Instrument : ID¹²⁰⁰
- Microscope : Model¹²⁰¹
- Objective : Correction¹²⁰²
- Objective : ID¹²⁰³

¹¹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹¹⁸⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹¹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹¹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹¹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

¹¹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹¹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

¹¹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_ID

¹¹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_LastName

¹¹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹¹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

¹¹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹¹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹¹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹²⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹²⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹²⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

¹²⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

- Objective : Immersion¹²⁰⁴
- Objective : NominalMagnification¹²⁰⁵
- Pixels : BinDataBigEndian¹²⁰⁶
- Pixels : DimensionOrder¹²⁰⁷
- Pixels : ID¹²⁰⁸
- Pixels : PhysicalSizeX¹²⁰⁹
- Pixels : PhysicalSizeY¹²¹⁰
- Pixels : SizeC¹²¹¹
- Pixels : SizeT¹²¹²
- Pixels : SizeX¹²¹³
- Pixels : SizeY¹²¹⁴
- Pixels : SizeZ¹²¹⁵
- Pixels : TimeIncrement¹²¹⁶
- Pixels : Type¹²¹⁷
- Plane : TheC¹²¹⁸
- Plane : TheT¹²¹⁹
- Plane : TheZ¹²²⁰
- StageLabel : Name¹²²¹
- StageLabel : X¹²²²
- StageLabel : Y¹²²³
- StageLabel : Z¹²²⁴

Total supported: 37

Total unknown or missing: 436

19.2.28 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](#)¹²²⁵. 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.

¹²⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

¹²⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

¹²⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹²⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹²⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹²⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹²¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹²¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹²¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹²¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹²¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹²¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹²¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

¹²¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹²¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹²¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹²²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹²²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_Name

¹²²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_X

¹²²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_Y

¹²²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_Z

¹²²⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Flexible Image Transport System format reader:

- Channel : ID¹²²⁶
- Channel : SamplesPerPixel¹²²⁷
- Image : AcquisitionDate¹²²⁸
- Image : ID¹²²⁹
- Image : Name¹²³⁰
- Pixels : BinDataBigEndian¹²³¹
- Pixels : DimensionOrder¹²³²
- Pixels : ID¹²³³
- Pixels : SizeC¹²³⁴
- Pixels : SizeT¹²³⁵
- Pixels : SizeX¹²³⁶
- Pixels : SizeY¹²³⁷
- Pixels : SizeZ¹²³⁸
- Pixels : Type¹²³⁹
- Plane : TheC¹²⁴⁰
- Plane : TheT¹²⁴¹
- Plane : TheZ¹²⁴²

Total supported: 17

Total unknown or missing: 456

19.2.29 GatanDM2Reader

This page lists supported metadata fields for the Bio-Formats Gatan DM2 format reader.

These fields are from the [OME data model](#)¹²⁴³. 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.

¹²²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹²²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹²²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹²²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹²³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹²³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹²³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹²³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹²³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹²³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹²³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹²³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹²³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹²³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹²⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹²⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹²⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹²⁴³<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 473 fields documented in the *metadata summary table*:

- The file format itself supports 28 of them (5%).
- Of those, Bio-Formats fully or partially converts 28 (100%).

Supported fields**These fields are fully supported by the Bio-Formats Gatan DM2 format reader:**

- Channel : ID¹²⁴⁴
- Channel : SamplesPerPixel¹²⁴⁵
- Detector : ID¹²⁴⁶
- DetectorSettings : Binning¹²⁴⁷
- DetectorSettings : ID¹²⁴⁸
- Experimenter : FirstName¹²⁴⁹
- Experimenter : ID¹²⁵⁰
- Experimenter : LastName¹²⁵¹
- Image : AcquisitionDate¹²⁵²
- Image : ExperimenterRef¹²⁵³
- Image : ID¹²⁵⁴
- Image : InstrumentRef¹²⁵⁵
- Image : Name¹²⁵⁶
- Instrument : ID¹²⁵⁷
- Pixels : BinDataBigEndian¹²⁵⁸
- Pixels : DimensionOrder¹²⁵⁹
- Pixels : ID¹²⁶⁰
- Pixels : PhysicalSizeX¹²⁶¹
- Pixels : PhysicalSizeY¹²⁶²
- Pixels : SizeC¹²⁶³
- Pixels : SizeT¹²⁶⁴
- Pixels : SizeX¹²⁶⁵

¹²⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹²⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹²⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

¹²⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

¹²⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

¹²⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_FirstName

¹²⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_ID

¹²⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_LastName

¹²⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹²⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID

¹²⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹²⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹²⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹²⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹²⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹²⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹²⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹²⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹²⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹²⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹²⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹²⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

- Pixels : SizeY¹²⁶⁶
- Pixels : SizeZ¹²⁶⁷
- Pixels : Type¹²⁶⁸
- Plane : TheC¹²⁶⁹
- Plane : TheT¹²⁷⁰
- Plane : TheZ¹²⁷¹

Total supported: 28

Total unknown or missing: 445

19.2.30 GatanReader

This page lists supported metadata fields for the Bio-Formats Gatan Digital Micrograph format reader.

These fields are from the [OME data model](#)¹²⁷². 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 473 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 Gatan Digital Micrograph format reader:

- Channel : AcquisitionMode¹²⁷³
- Channel : ID¹²⁷⁴
- Channel : SamplesPerPixel¹²⁷⁵
- Detector : ID¹²⁷⁶
- DetectorSettings : ID¹²⁷⁷
- DetectorSettings : Voltage¹²⁷⁸
- Image : AcquisitionDate¹²⁷⁹
- Image : ID¹²⁸⁰
- Image : Name¹²⁸¹
- Instrument : ID¹²⁸²
- Objective : Correction¹²⁸³

¹²⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹²⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹²⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹²⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹²⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹²⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹²⁷²<http://www.openmicroscopy.org/site/support/ome-model/>

¹²⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_AcquisitionMode

¹²⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹²⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹²⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

¹²⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

¹²⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Voltage

¹²⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹²⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹²⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹²⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹²⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

- Objective : ID¹²⁸⁴
- Objective : Immersion¹²⁸⁵
- Objective : NominalMagnification¹²⁸⁶
- ObjectiveSettings : ID¹²⁸⁷
- Pixels : BinDataBigEndian¹²⁸⁸
- Pixels : DimensionOrder¹²⁸⁹
- Pixels : ID¹²⁹⁰
- Pixels : PhysicalSizeX¹²⁹¹
- Pixels : PhysicalSizeY¹²⁹²
- Pixels : PhysicalSizeZ¹²⁹³
- Pixels : SizeC¹²⁹⁴
- Pixels : SizeT¹²⁹⁵
- Pixels : SizeX¹²⁹⁶
- Pixels : SizeY¹²⁹⁷
- Pixels : SizeZ¹²⁹⁸
- Pixels : Type¹²⁹⁹
- Plane : ExposureTime¹³⁰⁰
- Plane : PositionX¹³⁰¹
- Plane : PositionY¹³⁰²
- Plane : PositionZ¹³⁰³
- Plane : TheC¹³⁰⁴
- Plane : TheT¹³⁰⁵
- Plane : TheZ¹³⁰⁶

Total supported: 34

Total unknown or missing: 439

- ¹²⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID
- ¹²⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion
- ¹²⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification
- ¹²⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID
- ¹²⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian
- ¹²⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder
- ¹²⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID
- ¹²⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX
- ¹²⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY
- ¹²⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ¹²⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC
- ¹²⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT
- ¹²⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX
- ¹²⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY
- ¹²⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ
- ¹²⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type
- ¹³⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime
- ¹³⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX
- ¹³⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY
- ¹³⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ
- ¹³⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC
- ¹³⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT
- ¹³⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.31 GIFReader

This page lists supported metadata fields for the Bio-Formats Graphics Interchange Format format reader.

These fields are from the [OME data model](#)¹³⁰⁷. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Graphics Interchange Format format reader:

- Channel : ID¹³⁰⁸
- Channel : SamplesPerPixel¹³⁰⁹
- Image : AcquisitionDate¹³¹⁰
- Image : ID¹³¹¹
- Image : Name¹³¹²
- Pixels : BinDataBigEndian¹³¹³
- Pixels : DimensionOrder¹³¹⁴
- Pixels : ID¹³¹⁵
- Pixels : SizeC¹³¹⁶
- Pixels : SizeT¹³¹⁷
- Pixels : SizeX¹³¹⁸
- Pixels : SizeY¹³¹⁹
- Pixels : SizeZ¹³²⁰
- Pixels : Type¹³²¹
- Plane : TheC¹³²²
- Plane : TheT¹³²³
- Plane : TheZ¹³²⁴

Total supported: 17

Total unknown or missing: 456

¹³⁰⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹³⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹³⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹³¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹³¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹³¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹³¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹³¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹³¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹³¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹³¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹³¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹³¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹³²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹³²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹³²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹³²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹³²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.32 NAFReader

This page lists supported metadata fields for the Bio-Formats Hamamatsu Aquacosmos format reader.

These fields are from the [OME data model](#)¹³²⁵. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Hamamatsu Aquacosmos format reader:

- Channel : ID¹³²⁶
- Channel : SamplesPerPixel¹³²⁷
- Image : AcquisitionDate¹³²⁸
- Image : ID¹³²⁹
- Image : Name¹³³⁰
- Pixels : BinDataBigEndian¹³³¹
- Pixels : DimensionOrder¹³³²
- Pixels : ID¹³³³
- Pixels : SizeC¹³³⁴
- Pixels : SizeT¹³³⁵
- Pixels : SizeX¹³³⁶
- Pixels : SizeY¹³³⁷
- Pixels : SizeZ¹³³⁸
- Pixels : Type¹³³⁹
- Plane : TheC¹³⁴⁰
- Plane : TheT¹³⁴¹
- Plane : TheZ¹³⁴²

Total supported: 17

Total unknown or missing: 456

¹³²⁵<http://www.openmicroscopy.org/site/support/ome-model/>

¹³²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹³²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹³²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹³²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹³³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹³³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹³³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹³³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹³³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹³³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹³³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹³³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹³³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹³³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹³⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹³⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹³⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.33 HISReader

This page lists supported metadata fields for the Bio-Formats Hamamatsu HIS format reader.

These fields are from the [OME data model](#)¹³⁴³. 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 473 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 Hamamatsu HIS format reader:

- Channel : ID¹³⁴⁴
- Channel : SamplesPerPixel¹³⁴⁵
- Detector : ID¹³⁴⁶
- Detector : Offset¹³⁴⁷
- Detector : Type¹³⁴⁸
- DetectorSettings : Binning¹³⁴⁹
- DetectorSettings : ID¹³⁵⁰
- Image : AcquisitionDate¹³⁵¹
- Image : ID¹³⁵²
- Image : InstrumentRef¹³⁵³
- Image : Name¹³⁵⁴
- Instrument : ID¹³⁵⁵
- Pixels : BinDataBigEndian¹³⁵⁶
- Pixels : DimensionOrder¹³⁵⁷
- Pixels : ID¹³⁵⁸
- Pixels : SizeC¹³⁵⁹
- Pixels : SizeT¹³⁶⁰
- Pixels : SizeX¹³⁶¹

¹³⁴³<http://www.openmicroscopy.org/site/support/ome-model/>

¹³⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹³⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹³⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

¹³⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Offset

¹³⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

¹³⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

¹³⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

¹³⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹³⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹³⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹³⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹³⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹³⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹³⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹³⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹³⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹³⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹³⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

- Pixels : SizeY¹³⁶²
- Pixels : SizeZ¹³⁶³
- Pixels : Type¹³⁶⁴
- Plane : ExposureTime¹³⁶⁵
- Plane : TheC¹³⁶⁶
- Plane : TheT¹³⁶⁷
- Plane : TheZ¹³⁶⁸

Total supported: 25

Total unknown or missing: 448

19.2.34 NDPIReader

This page lists supported metadata fields for the Bio-Formats Hamamatsu NDPI format reader.

These fields are from the [OME data model](#)¹³⁶⁹. 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 473 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 NDPI format reader:

- Channel : ID¹³⁷⁰
- Channel : SamplesPerPixel¹³⁷¹
- Image : AcquisitionDate¹³⁷²
- Image : ID¹³⁷³
- Image : Name¹³⁷⁴
- Pixels : BinDataBigEndian¹³⁷⁵
- Pixels : DimensionOrder¹³⁷⁶
- Pixels : ID¹³⁷⁷
- Pixels : PhysicalSizeX¹³⁷⁸
- Pixels : PhysicalSizeY¹³⁷⁹

¹³⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹³⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹³⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹³⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

¹³⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹³⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹³⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹³⁶⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹³⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹³⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹³⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹³⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹³⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹³⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹³⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹³⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹³⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹³⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

- Pixels : SizeC¹³⁸⁰
- Pixels : SizeT¹³⁸¹
- Pixels : SizeX¹³⁸²
- Pixels : SizeY¹³⁸³
- Pixels : SizeZ¹³⁸⁴
- Pixels : Type¹³⁸⁵
- Plane : TheC¹³⁸⁶
- Plane : TheT¹³⁸⁷
- Plane : TheZ¹³⁸⁸

Total supported: 19

Total unknown or missing: 454

19.2.35 HamamatsuVMSReader

This page lists supported metadata fields for the Bio-Formats Hamamatsu VMS format reader.

These fields are from the [OME data model](#)¹³⁸⁹. 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 473 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 Hamamatsu VMS format reader:

- Channel : ID¹³⁹⁰
- Channel : SamplesPerPixel¹³⁹¹
- Image : AcquisitionDate¹³⁹²
- Image : ID¹³⁹³
- Image : InstrumentRef¹³⁹⁴
- Image : Name¹³⁹⁵
- Instrument : ID¹³⁹⁶
- Objective : ID¹³⁹⁷

¹³⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹³⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹³⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹³⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹³⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹³⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹³⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹³⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹³⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹³⁸⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹³⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹³⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹³⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹³⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹³⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹³⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹³⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹³⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

- Objective : NominalMagnification¹³⁹⁸
- ObjectiveSettings : ID¹³⁹⁹
- Pixels : BinDataBigEndian¹⁴⁰⁰
- Pixels : DimensionOrder¹⁴⁰¹
- Pixels : ID¹⁴⁰²
- Pixels : PhysicalSizeX¹⁴⁰³
- Pixels : PhysicalSizeY¹⁴⁰⁴
- Pixels : SizeC¹⁴⁰⁵
- Pixels : SizeT¹⁴⁰⁶
- Pixels : SizeX¹⁴⁰⁷
- Pixels : SizeY¹⁴⁰⁸
- Pixels : SizeZ¹⁴⁰⁹
- Pixels : Type¹⁴¹⁰
- Plane : TheC¹⁴¹¹
- Plane : TheT¹⁴¹²
- Plane : TheZ¹⁴¹³

Total supported: 24

Total unknown or missing: 449

19.2.36 HitachiReader

This page lists supported metadata fields for the Bio-Formats Hitachi format reader.

These fields are from the [OME data model](#)¹⁴¹⁴. 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 473 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 Hitachi format reader:

- Channel : ID¹⁴¹⁵

¹³⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

¹³⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

¹⁴⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁴⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁴⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁴⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁴⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁴⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁴⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁴⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁴⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁴⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁴¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁴¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁴¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁴¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁴¹⁴<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁴¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

- Channel : SamplesPerPixel¹⁴¹⁶
- Image : AcquisitionDate¹⁴¹⁷
- Image : ID¹⁴¹⁸
- Image : InstrumentRef¹⁴¹⁹
- Image : Name¹⁴²⁰
- Instrument : ID¹⁴²¹
- Microscope : Model¹⁴²²
- Microscope : SerialNumber¹⁴²³
- Objective : ID¹⁴²⁴
- Objective : WorkingDistance¹⁴²⁵
- ObjectiveSettings : ID¹⁴²⁶
- Pixels : BinDataBigEndian¹⁴²⁷
- Pixels : DimensionOrder¹⁴²⁸
- Pixels : ID¹⁴²⁹
- Pixels : PhysicalSizeX¹⁴³⁰
- Pixels : PhysicalSizeY¹⁴³¹
- Pixels : SizeC¹⁴³²
- Pixels : SizeT¹⁴³³
- Pixels : SizeX¹⁴³⁴
- Pixels : SizeY¹⁴³⁵
- Pixels : SizeZ¹⁴³⁶
- Pixels : Type¹⁴³⁷
- Plane : PositionX¹⁴³⁸
- Plane : PositionY¹⁴³⁹
- Plane : PositionZ¹⁴⁴⁰
- Plane : TheC¹⁴⁴¹

¹⁴¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁴¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁴¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁴¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹⁴²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁴²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹⁴²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁴²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

¹⁴²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

¹⁴²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_WorkingDistance

¹⁴²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

¹⁴²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁴²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁴²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁴³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁴³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁴³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁴³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁴³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁴³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁴³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁴³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁴³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

¹⁴³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

¹⁴⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

¹⁴⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

- Plane : TheT¹⁴⁴²
- Plane : TheZ¹⁴⁴³

Total supported: 29

Total unknown or missing: 444

19.2.37 ICSReader

This page lists supported metadata fields for the Bio-Formats Image Cytometry Standard format reader.

These fields are from the [OME data model](#)¹⁴⁴⁴. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 70 of them (14%).
- Of those, Bio-Formats fully or partially converts 70 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Image Cytometry Standard format reader:

- Channel : EmissionWavelength¹⁴⁴⁵
- Channel : ExcitationWavelength¹⁴⁴⁶
- Channel : ID¹⁴⁴⁷
- Channel : Name¹⁴⁴⁸
- Channel : PinholeSize¹⁴⁴⁹
- Channel : SamplesPerPixel¹⁴⁵⁰
- Detector : ID¹⁴⁵¹
- Detector : Manufacturer¹⁴⁵²
- Detector : Model¹⁴⁵³
- Detector : Type¹⁴⁵⁴
- DetectorSettings : Gain¹⁴⁵⁵
- DetectorSettings : ID¹⁴⁵⁶
- Dichroic : ID¹⁴⁵⁷
- Dichroic : Model¹⁴⁵⁸
- Experiment : ID¹⁴⁵⁹

¹⁴⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁴⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁴⁴⁴<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁴⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

¹⁴⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

¹⁴⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁴⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

¹⁴⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PinholeSize

¹⁴⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁴⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

¹⁴⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹⁴⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁴⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

¹⁴⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

¹⁴⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

¹⁴⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dichroic_ID

¹⁴⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁴⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_ID

- Experiment : Type¹⁴⁶⁰
- Experimenter : ID¹⁴⁶¹
- Experimenter : LastName¹⁴⁶²
- Filter : ID¹⁴⁶³
- Filter : Model¹⁴⁶⁴
- FilterSet : DichroicRef¹⁴⁶⁵
- FilterSet : EmissionFilterRef¹⁴⁶⁶
- FilterSet : ExcitationFilterRef¹⁴⁶⁷
- FilterSet : ID¹⁴⁶⁸
- FilterSet : Model¹⁴⁶⁹
- Image : AcquisitionDate¹⁴⁷⁰
- Image : Description¹⁴⁷¹
- Image : ID¹⁴⁷²
- Image : InstrumentRef¹⁴⁷³
- Image : Name¹⁴⁷⁴
- Instrument : ID¹⁴⁷⁵
- Laser : ID¹⁴⁷⁶
- Laser : LaserMedium¹⁴⁷⁷
- Laser : Manufacturer¹⁴⁷⁸
- Laser : Model¹⁴⁷⁹
- Laser : Power¹⁴⁸⁰
- Laser : RepetitionRate¹⁴⁸¹
- Laser : Type¹⁴⁸²
- Laser : Wavelength¹⁴⁸³
- Microscope : Manufacturer¹⁴⁸⁴
- Microscope : Model¹⁴⁸⁵

¹⁴⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_Type

¹⁴⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_ID

¹⁴⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_LastName

¹⁴⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_ID

¹⁴⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁴⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DichroicRef_ID

¹⁴⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

¹⁴⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

¹⁴⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterSet_ID

¹⁴⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁴⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁴⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

¹⁴⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁴⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹⁴⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁴⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹⁴⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

¹⁴⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_LaserMedium

¹⁴⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹⁴⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁴⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power

¹⁴⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_RepetitionRate

¹⁴⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Type

¹⁴⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Wavelength

¹⁴⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹⁴⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

- Objective : CalibratedMagnification¹⁴⁸⁶
- Objective : Correction¹⁴⁸⁷
- Objective : ID¹⁴⁸⁸
- Objective : Immersion¹⁴⁸⁹
- Objective : LensNA¹⁴⁹⁰
- Objective : Model¹⁴⁹¹
- Objective : WorkingDistance¹⁴⁹²
- ObjectiveSettings : ID¹⁴⁹³
- Pixels : BinDataBigEndian¹⁴⁹⁴
- Pixels : DimensionOrder¹⁴⁹⁵
- Pixels : ID¹⁴⁹⁶
- Pixels : PhysicalSizeX¹⁴⁹⁷
- Pixels : PhysicalSizeY¹⁴⁹⁸
- Pixels : PhysicalSizeZ¹⁴⁹⁹
- Pixels : SizeC¹⁵⁰⁰
- Pixels : SizeT¹⁵⁰¹
- Pixels : SizeX¹⁵⁰²
- Pixels : SizeY¹⁵⁰³
- Pixels : SizeZ¹⁵⁰⁴
- Pixels : TimeIncrement¹⁵⁰⁵
- Pixels : Type¹⁵⁰⁶
- Plane : DeltaT¹⁵⁰⁷
- Plane : ExposureTime¹⁵⁰⁸
- Plane : PositionX¹⁵⁰⁹
- Plane : PositionY¹⁵¹⁰
- Plane : PositionZ¹⁵¹¹

¹⁴⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification

¹⁴⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

¹⁴⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

¹⁴⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

¹⁴⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

¹⁴⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁴⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_WorkingDistance

¹⁴⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

¹⁴⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁴⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁴⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁴⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁴⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁴⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁵⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁵⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁵⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁵⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁵⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁵⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

¹⁵⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁵⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

¹⁵⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

¹⁵⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

¹⁵¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

¹⁵¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

- Plane : TheC¹⁵¹²
- Plane : TheT¹⁵¹³
- Plane : TheZ¹⁵¹⁴

Total supported: 70

Total unknown or missing: 403

19.2.38 ImaconReader

This page lists supported metadata fields for the Bio-Formats Imacon format reader.

These fields are from the [OME data model](#)¹⁵¹⁵. 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 473 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 Imacon format reader:

- Channel : ID¹⁵¹⁶
- Channel : SamplesPerPixel¹⁵¹⁷
- Experimenter : FirstName¹⁵¹⁸
- Experimenter : ID¹⁵¹⁹
- Experimenter : LastName¹⁵²⁰
- Image : AcquisitionDate¹⁵²¹
- Image : ExperimenterRef¹⁵²²
- Image : ID¹⁵²³
- Image : Name¹⁵²⁴
- Pixels : BinDataBigEndian¹⁵²⁵
- Pixels : DimensionOrder¹⁵²⁶
- Pixels : ID¹⁵²⁷
- Pixels : SizeC¹⁵²⁸
- Pixels : SizeT¹⁵²⁹

¹⁵¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁵¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁵¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁵¹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁵¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁵¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁵¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_FirstName

¹⁵¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_ID

¹⁵²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_LastName

¹⁵²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁵²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID

¹⁵²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁵²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁵²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁵²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁵²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁵²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁵²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

- Pixels : SizeX¹⁵³⁰
- Pixels : SizeY¹⁵³¹
- Pixels : SizeZ¹⁵³²
- Pixels : Type¹⁵³³
- Plane : TheC¹⁵³⁴
- Plane : TheT¹⁵³⁵
- Plane : TheZ¹⁵³⁶

Total supported: 21

Total unknown or missing: 452

19.2.39 SEQReader

This page lists supported metadata fields for the Bio-Formats Image-Pro Sequence format reader.

These fields are from the [OME data model](#)¹⁵³⁷. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Image-Pro Sequence format reader:

- Channel : ID¹⁵³⁸
- Channel : SamplesPerPixel¹⁵³⁹
- Image : AcquisitionDate¹⁵⁴⁰
- Image : ID¹⁵⁴¹
- Image : Name¹⁵⁴²
- Pixels : BinDataBigEndian¹⁵⁴³
- Pixels : DimensionOrder¹⁵⁴⁴
- Pixels : ID¹⁵⁴⁵
- Pixels : SizeC¹⁵⁴⁶
- Pixels : SizeT¹⁵⁴⁷

¹⁵³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁵³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁵³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁵³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁵³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁵³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁵³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁵³⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁵³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁵³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁵⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁵⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁵⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁵⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁵⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁵⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁵⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁵⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

- Pixels : SizeX¹⁵⁴⁸
- Pixels : SizeY¹⁵⁴⁹
- Pixels : SizeZ¹⁵⁵⁰
- Pixels : Type¹⁵⁵¹
- Plane : TheC¹⁵⁵²
- Plane : TheT¹⁵⁵³
- Plane : TheZ¹⁵⁵⁴

Total supported: 17

Total unknown or missing: 456

19.2.40 IPWReader

This page lists supported metadata fields for the Bio-Formats Image-Pro Workspace format reader.

These fields are from the [OME data model](#)¹⁵⁵⁵. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 18 of them (3%).
- Of those, Bio-Formats fully or partially converts 18 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Image-Pro Workspace format reader:

- Channel : ID¹⁵⁵⁶
- Channel : SamplesPerPixel¹⁵⁵⁷
- Image : AcquisitionDate¹⁵⁵⁸
- Image : Description¹⁵⁵⁹
- Image : ID¹⁵⁶⁰
- Image : Name¹⁵⁶¹
- Pixels : BinDataBigEndian¹⁵⁶²
- Pixels : DimensionOrder¹⁵⁶³
- Pixels : ID¹⁵⁶⁴
- Pixels : SizeC¹⁵⁶⁵

¹⁵⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁵⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁵⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁵⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁵⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁵⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁵⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁵⁵⁵<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁵⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁵⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁵⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁵⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

¹⁵⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁵⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁵⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁵⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁵⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁵⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

- Pixels : SizeT¹⁵⁶⁶
- Pixels : SizeX¹⁵⁶⁷
- Pixels : SizeY¹⁵⁶⁸
- Pixels : SizeZ¹⁵⁶⁹
- Pixels : Type¹⁵⁷⁰
- Plane : TheC¹⁵⁷¹
- Plane : TheT¹⁵⁷²
- Plane : TheZ¹⁵⁷³

Total supported: 18

Total unknown or missing: 455

19.2.41 ImagicReader

This page lists supported metadata fields for the Bio-Formats IMAGIC format reader.

These fields are from the [OME data model](#)¹⁵⁷⁴. 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 473 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 IMAGIC format reader:

- Channel : ID¹⁵⁷⁵
- Channel : SamplesPerPixel¹⁵⁷⁶
- Image : AcquisitionDate¹⁵⁷⁷
- Image : ID¹⁵⁷⁸
- Image : Name¹⁵⁷⁹
- Pixels : BinDataBigEndian¹⁵⁸⁰
- Pixels : DimensionOrder¹⁵⁸¹
- Pixels : ID¹⁵⁸²
- Pixels : PhysicalSizeX¹⁵⁸³

¹⁵⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁵⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁵⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁵⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁵⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁵⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁵⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁵⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁵⁷⁴<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁵⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁵⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁵⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁵⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁵⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁵⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁵⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁵⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁵⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

- Pixels : PhysicalSizeY¹⁵⁸⁴
- Pixels : PhysicalSizeZ¹⁵⁸⁵
- Pixels : SizeC¹⁵⁸⁶
- Pixels : SizeT¹⁵⁸⁷
- Pixels : SizeX¹⁵⁸⁸
- Pixels : SizeY¹⁵⁸⁹
- Pixels : SizeZ¹⁵⁹⁰
- Pixels : Type¹⁵⁹¹
- Plane : TheC¹⁵⁹²
- Plane : TheT¹⁵⁹³
- Plane : TheZ¹⁵⁹⁴

Total supported: 20

Total unknown or missing: 453

19.2.42 IMODReader

This page lists supported metadata fields for the Bio-Formats IMOD format reader.

These fields are from the [OME data model](#)¹⁵⁹⁵. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 42 of them (8%).
- Of those, Bio-Formats fully or partially converts 42 (100%).

Supported fields

These fields are fully supported by the Bio-Formats IMOD format reader:

- Channel : ID¹⁵⁹⁶
- Channel : SamplesPerPixel¹⁵⁹⁷
- Image : AcquisitionDate¹⁵⁹⁸
- Image : ID¹⁵⁹⁹
- Image : Name¹⁶⁰⁰
- Image : ROIRef¹⁶⁰¹

¹⁵⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁵⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁵⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁵⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁵⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁵⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁵⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁵⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁵⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁵⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁵⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁵⁹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁵⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁵⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁵⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁵⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁶⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁶⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

- Pixels : BinDataBigEndian¹⁶⁰²
- Pixels : DimensionOrder¹⁶⁰³
- Pixels : ID¹⁶⁰⁴
- Pixels : PhysicalSizeX¹⁶⁰⁵
- Pixels : PhysicalSizeY¹⁶⁰⁶
- Pixels : PhysicalSizeZ¹⁶⁰⁷
- Pixels : SizeC¹⁶⁰⁸
- Pixels : SizeT¹⁶⁰⁹
- Pixels : SizeX¹⁶¹⁰
- Pixels : SizeY¹⁶¹¹
- Pixels : SizeZ¹⁶¹²
- Pixels : Type¹⁶¹³
- Plane : TheC¹⁶¹⁴
- Plane : TheT¹⁶¹⁵
- Plane : TheZ¹⁶¹⁶
- Point : ID¹⁶¹⁷
- Point : StrokeColor¹⁶¹⁸
- Point : StrokeDashArray¹⁶¹⁹
- Point : StrokeWidth¹⁶²⁰
- Point : TheZ¹⁶²¹
- Point : X¹⁶²²
- Point : Y¹⁶²³
- Polygon : ID¹⁶²⁴
- Polygon : Points¹⁶²⁵
- Polygon : StrokeColor¹⁶²⁶
- Polygon : StrokeDashArray¹⁶²⁷

¹⁶⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁶⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁶⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁶⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁶⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁶⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁶⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁶⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁶¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁶¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁶¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁶¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁶¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁶¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁶¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁶¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

¹⁶¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor

¹⁶¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray

¹⁶²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

¹⁶²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

¹⁶²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Point_X

¹⁶²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Point_Y

¹⁶²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

¹⁶²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polygon_Points

¹⁶²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor

¹⁶²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray

- Polygon : StrokeWidth¹⁶²⁸
- Polygon : TheZ¹⁶²⁹
- Polyline : ID¹⁶³⁰
- Polyline : Points¹⁶³¹
- Polyline : StrokeColor¹⁶³²
- Polyline : StrokeDashArray¹⁶³³
- Polyline : StrokeWidth¹⁶³⁴
- Polyline : TheZ¹⁶³⁵
- ROI : ID¹⁶³⁶
- ROI : Name¹⁶³⁷

Total supported: 42

Total unknown or missing: 431

19.2.43 OpenlabReader

This page lists supported metadata fields for the Bio-Formats Openlab LIFF format reader.

These fields are from the [OME data model](#)¹⁶³⁸. 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 473 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 Openlab LIFF format reader:

- Channel : ID¹⁶³⁹
- Channel : Name¹⁶⁴⁰
- Channel : SamplesPerPixel¹⁶⁴¹
- Detector : ID¹⁶⁴²
- Detector : Type¹⁶⁴³
- DetectorSettings : Gain¹⁶⁴⁴
- DetectorSettings : ID¹⁶⁴⁵

¹⁶²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

¹⁶²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

¹⁶³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

¹⁶³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polyline_Points

¹⁶³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor

¹⁶³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeDashArray

¹⁶³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

¹⁶³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

¹⁶³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

¹⁶³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_Name

¹⁶³⁸<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁶³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁶⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

¹⁶⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁶⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

¹⁶⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

¹⁶⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

¹⁶⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

- `DetectorSettings : Offset`¹⁶⁴⁶
- `Image : AcquisitionDate`¹⁶⁴⁷
- `Image : ID`¹⁶⁴⁸
- `Image : InstrumentRef`¹⁶⁴⁹
- `Image : Name`¹⁶⁵⁰
- `Instrument : ID`¹⁶⁵¹
- `Pixels : BinDataBigEndian`¹⁶⁵²
- `Pixels : DimensionOrder`¹⁶⁵³
- `Pixels : ID`¹⁶⁵⁴
- `Pixels : PhysicalSizeX`¹⁶⁵⁵
- `Pixels : PhysicalSizeY`¹⁶⁵⁶
- `Pixels : SizeC`¹⁶⁵⁷
- `Pixels : SizeT`¹⁶⁵⁸
- `Pixels : SizeX`¹⁶⁵⁹
- `Pixels : SizeY`¹⁶⁶⁰
- `Pixels : SizeZ`¹⁶⁶¹
- `Pixels : Type`¹⁶⁶²
- `Plane : PositionX`¹⁶⁶³
- `Plane : PositionY`¹⁶⁶⁴
- `Plane : PositionZ`¹⁶⁶⁵
- `Plane : TheC`¹⁶⁶⁶
- `Plane : TheT`¹⁶⁶⁷
- `Plane : TheZ`¹⁶⁶⁸

Total supported: 30

Total unknown or missing: 443

- ¹⁶⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Offset
- ¹⁶⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate
- ¹⁶⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID
- ¹⁶⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID
- ¹⁶⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name
- ¹⁶⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID
- ¹⁶⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian
- ¹⁶⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder
- ¹⁶⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID
- ¹⁶⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX
- ¹⁶⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY
- ¹⁶⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC
- ¹⁶⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT
- ¹⁶⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX
- ¹⁶⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY
- ¹⁶⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ
- ¹⁶⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type
- ¹⁶⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX
- ¹⁶⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY
- ¹⁶⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ
- ¹⁶⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC
- ¹⁶⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT
- ¹⁶⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.44 OpenlabRawReader

This page lists supported metadata fields for the Bio-Formats Openlab RAW format reader.

These fields are from the [OME data model](#)¹⁶⁶⁹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Openlab RAW format reader:

- Channel : ID¹⁶⁷⁰
- Channel : SamplesPerPixel¹⁶⁷¹
- Image : AcquisitionDate¹⁶⁷²
- Image : ID¹⁶⁷³
- Image : Name¹⁶⁷⁴
- Pixels : BinDataBigEndian¹⁶⁷⁵
- Pixels : DimensionOrder¹⁶⁷⁶
- Pixels : ID¹⁶⁷⁷
- Pixels : SizeC¹⁶⁷⁸
- Pixels : SizeT¹⁶⁷⁹
- Pixels : SizeX¹⁶⁸⁰
- Pixels : SizeY¹⁶⁸¹
- Pixels : SizeZ¹⁶⁸²
- Pixels : Type¹⁶⁸³
- Plane : TheC¹⁶⁸⁴
- Plane : TheT¹⁶⁸⁵
- Plane : TheZ¹⁶⁸⁶

Total supported: 17

Total unknown or missing: 456

¹⁶⁶⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁶⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁶⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁶⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁶⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁶⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁶⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁶⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁶⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁶⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁶⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁶⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁶⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁶⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁶⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁶⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁶⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁶⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.45 ImprovionTiffReader

This page lists supported metadata fields for the Bio-Formats Improvion TIFF format reader.

These fields are from the [OME data model](#)¹⁶⁸⁷. 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 473 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 Improvion TIFF format reader:

- Channel : ID¹⁶⁸⁸
- Channel : Name¹⁶⁸⁹
- Channel : SamplesPerPixel¹⁶⁹⁰
- Image : AcquisitionDate¹⁶⁹¹
- Image : Description¹⁶⁹²
- Image : ID¹⁶⁹³
- Image : Name¹⁶⁹⁴
- Pixels : BinDataBigEndian¹⁶⁹⁵
- Pixels : DimensionOrder¹⁶⁹⁶
- Pixels : ID¹⁶⁹⁷
- Pixels : PhysicalSizeX¹⁶⁹⁸
- Pixels : PhysicalSizeY¹⁶⁹⁹
- Pixels : PhysicalSizeZ¹⁷⁰⁰
- Pixels : SizeC¹⁷⁰¹
- Pixels : SizeT¹⁷⁰²
- Pixels : SizeX¹⁷⁰³
- Pixels : SizeY¹⁷⁰⁴
- Pixels : SizeZ¹⁷⁰⁵

¹⁶⁸⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁶⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁶⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

¹⁶⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁶⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁶⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

¹⁶⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁶⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁶⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁶⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁶⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁶⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁶⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁷⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁷⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁷⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁷⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁷⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁷⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

- Pixels : TimeIncrement¹⁷⁰⁶
- Pixels : Type¹⁷⁰⁷
- Plane : TheC¹⁷⁰⁸
- Plane : TheT¹⁷⁰⁹
- Plane : TheZ¹⁷¹⁰

Total supported: 23

Total unknown or missing: 450

19.2.46 InCellReader

This page lists supported metadata fields for the Bio-Formats InCell 1000/2000 format reader.

These fields are from the [OME data model](#)¹⁷¹¹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 65 of them (13%).
- Of those, Bio-Formats fully or partially converts 65 (100%).

Supported fields

These fields are fully supported by the Bio-Formats InCell 1000/2000 format reader:

- Channel : EmissionWavelength¹⁷¹²
- Channel : ExcitationWavelength¹⁷¹³
- Channel : ID¹⁷¹⁴
- Channel : Name¹⁷¹⁵
- Channel : SamplesPerPixel¹⁷¹⁶
- Detector : ID¹⁷¹⁷
- Detector : Model¹⁷¹⁸
- Detector : Type¹⁷¹⁹
- DetectorSettings : Binning¹⁷²⁰
- DetectorSettings : Gain¹⁷²¹
- DetectorSettings : ID¹⁷²²
- Experiment : ID¹⁷²³

¹⁷⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

¹⁷⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁷⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁷⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁷¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁷¹¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁷¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

¹⁷¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

¹⁷¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁷¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

¹⁷¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁷¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

¹⁷¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁷¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

¹⁷²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

¹⁷²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

¹⁷²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

¹⁷²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_ID

- Experiment : Type¹⁷²⁴
- Image : AcquisitionDate¹⁷²⁵
- Image : Description¹⁷²⁶
- Image : ExperimentRef¹⁷²⁷
- Image : ID¹⁷²⁸
- Image : InstrumentRef¹⁷²⁹
- Image : Name¹⁷³⁰
- ImagingEnvironment : Temperature¹⁷³¹
- Instrument : ID¹⁷³²
- Objective : Correction¹⁷³³
- Objective : ID¹⁷³⁴
- Objective : Immersion¹⁷³⁵
- Objective : LensNA¹⁷³⁶
- Objective : Manufacturer¹⁷³⁷
- Objective : NominalMagnification¹⁷³⁸
- ObjectiveSettings : ID¹⁷³⁹
- ObjectiveSettings : RefractiveIndex¹⁷⁴⁰
- Pixels : BinDataBigEndian¹⁷⁴¹
- Pixels : DimensionOrder¹⁷⁴²
- Pixels : ID¹⁷⁴³
- Pixels : PhysicalSizeX¹⁷⁴⁴
- Pixels : PhysicalSizeY¹⁷⁴⁵
- Pixels : SizeC¹⁷⁴⁶
- Pixels : SizeT¹⁷⁴⁷
- Pixels : SizeX¹⁷⁴⁸
- Pixels : SizeY¹⁷⁴⁹

¹⁷²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_Type

¹⁷²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁷²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

¹⁷²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimentRef_ID

¹⁷²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁷²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹⁷³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁷³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

¹⁷³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹⁷³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

¹⁷³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

¹⁷³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

¹⁷³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

¹⁷³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

¹⁷³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

¹⁷³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

¹⁷⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

¹⁷⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁷⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁷⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁷⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁷⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁷⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁷⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁷⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁷⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁷⁵⁰
- Pixels : Type¹⁷⁵¹
- Plane : DeltaT¹⁷⁵²
- Plane : ExposureTime¹⁷⁵³
- Plane : PositionX¹⁷⁵⁴
- Plane : PositionY¹⁷⁵⁵
- Plane : PositionZ¹⁷⁵⁶
- Plane : TheC¹⁷⁵⁷
- Plane : TheT¹⁷⁵⁸
- Plane : TheZ¹⁷⁵⁹
- Plate : ColumnNamingConvention¹⁷⁶⁰
- Plate : ID¹⁷⁶¹
- Plate : Name¹⁷⁶²
- Plate : RowNamingConvention¹⁷⁶³
- Plate : WellOriginX¹⁷⁶⁴
- Plate : WellOriginY¹⁷⁶⁵
- PlateAcquisition : ID¹⁷⁶⁶
- PlateAcquisition : MaximumFieldCount¹⁷⁶⁷
- PlateAcquisition : WellSampleRef¹⁷⁶⁸
- Well : Column¹⁷⁶⁹
- Well : ID¹⁷⁷⁰
- Well : Row¹⁷⁷¹
- WellSample : ID¹⁷⁷²
- WellSample : ImageRef¹⁷⁷³
- WellSample : Index¹⁷⁷⁴
- WellSample : PositionX¹⁷⁷⁵

¹⁷⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁷⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁷⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

¹⁷⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

¹⁷⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

¹⁷⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

¹⁷⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

¹⁷⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁷⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁷⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁷⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ColumnNamingConvention

¹⁷⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID

¹⁷⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Name

¹⁷⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_RowNamingConvention

¹⁷⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_WellOriginX

¹⁷⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_WellOriginY

¹⁷⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_ID

¹⁷⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

¹⁷⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSampleRef_ID

¹⁷⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column

¹⁷⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID

¹⁷⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row

¹⁷⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

¹⁷⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

¹⁷⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

¹⁷⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionX

- WellSample : PositionY¹⁷⁷⁶

Total supported: 65

Total unknown or missing: 408

19.2.47 InCell3000Reader

This page lists supported metadata fields for the Bio-Formats InCell 3000 format reader.

These fields are from the [OME data model](#)¹⁷⁷⁷. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats InCell 3000 format reader:

- Channel : ID¹⁷⁷⁸
- Channel : SamplesPerPixel¹⁷⁷⁹
- Image : AcquisitionDate¹⁷⁸⁰
- Image : ID¹⁷⁸¹
- Image : Name¹⁷⁸²
- Pixels : BinDataBigEndian¹⁷⁸³
- Pixels : DimensionOrder¹⁷⁸⁴
- Pixels : ID¹⁷⁸⁵
- Pixels : SizeC¹⁷⁸⁶
- Pixels : SizeT¹⁷⁸⁷
- Pixels : SizeX¹⁷⁸⁸
- Pixels : SizeY¹⁷⁸⁹
- Pixels : SizeZ¹⁷⁹⁰
- Pixels : Type¹⁷⁹¹
- Plane : TheC¹⁷⁹²
- Plane : TheT¹⁷⁹³

¹⁷⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionY

¹⁷⁷⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁷⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁷⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁷⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁷⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁷⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁷⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁷⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁷⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁷⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁷⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁷⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁷⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁷⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁷⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁷⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁷⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

- Plane : TheZ¹⁷⁹⁴

Total supported: 17

Total unknown or missing: 456

19.2.48 INRReader

This page lists supported metadata fields for the Bio-Formats INR format reader.

These fields are from the [OME data model](#)¹⁷⁹⁵. 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 473 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 INR format reader:

- Channel : ID¹⁷⁹⁶
- Channel : SamplesPerPixel¹⁷⁹⁷
- Image : AcquisitionDate¹⁷⁹⁸
- Image : ID¹⁷⁹⁹
- Image : Name¹⁸⁰⁰
- Pixels : BinDataBigEndian¹⁸⁰¹
- Pixels : DimensionOrder¹⁸⁰²
- Pixels : ID¹⁸⁰³
- Pixels : PhysicalSizeX¹⁸⁰⁴
- Pixels : PhysicalSizeY¹⁸⁰⁵
- Pixels : PhysicalSizeZ¹⁸⁰⁶
- Pixels : SizeC¹⁸⁰⁷
- Pixels : SizeT¹⁸⁰⁸
- Pixels : SizeX¹⁸⁰⁹
- Pixels : SizeY¹⁸¹⁰
- Pixels : SizeZ¹⁸¹¹

¹⁷⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁷⁹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁷⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁷⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁷⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁷⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁸⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁸⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁸⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁸⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁸⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁸⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁸⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

¹⁸⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁸⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁸⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁸¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁸¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

- Pixels : Type¹⁸¹²
- Plane : TheC¹⁸¹³
- Plane : TheT¹⁸¹⁴
- Plane : TheZ¹⁸¹⁵

Total supported: 20

Total unknown or missing: 453

19.2.49 IvisionReader

This page lists supported metadata fields for the Bio-Formats IVison format reader.

These fields are from the [OME data model](#)¹⁸¹⁶. 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 473 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 IVison format reader:

- Channel : ID¹⁸¹⁷
- Channel : SamplesPerPixel¹⁸¹⁸
- Detector : ID¹⁸¹⁹
- Detector : Type¹⁸²⁰
- DetectorSettings : Binning¹⁸²¹
- DetectorSettings : Gain¹⁸²²
- DetectorSettings : ID¹⁸²³
- Image : AcquisitionDate¹⁸²⁴
- Image : ID¹⁸²⁵
- Image : InstrumentRef¹⁸²⁶
- Image : Name¹⁸²⁷
- Instrument : ID¹⁸²⁸
- Objective : Correction¹⁸²⁹

¹⁸¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁸¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁸¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁸¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁸¹⁶<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁸¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁸¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁸¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

¹⁸²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

¹⁸²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

¹⁸²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

¹⁸²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

¹⁸²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁸²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁸²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹⁸²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁸²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹⁸²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

- Objective : ID¹⁸³⁰
- Objective : Immersion¹⁸³¹
- Objective : LensNA¹⁸³²
- Objective : NominalMagnification¹⁸³³
- ObjectiveSettings : ID¹⁸³⁴
- ObjectiveSettings : RefractiveIndex¹⁸³⁵
- Pixels : BinDataBigEndian¹⁸³⁶
- Pixels : DimensionOrder¹⁸³⁷
- Pixels : ID¹⁸³⁸
- Pixels : SizeC¹⁸³⁹
- Pixels : SizeT¹⁸⁴⁰
- Pixels : SizeX¹⁸⁴¹
- Pixels : SizeY¹⁸⁴²
- Pixels : SizeZ¹⁸⁴³
- Pixels : TimeIncrement¹⁸⁴⁴
- Pixels : Type¹⁸⁴⁵
- Plane : TheC¹⁸⁴⁶
- Plane : TheT¹⁸⁴⁷
- Plane : TheZ¹⁸⁴⁸

Total supported: 32

Total unknown or missing: 441

19.2.50 IPLabReader

This page lists supported metadata fields for the Bio-Formats IPLab format reader.

These fields are from the [OME data model](#)¹⁸⁴⁹. 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 473 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%).

¹⁸³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

¹⁸³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

¹⁸³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

¹⁸³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

¹⁸³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

¹⁸³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

¹⁸³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁸³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁸³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁸³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁸⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁸⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁸⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁸⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁸⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

¹⁸⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁸⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁸⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁸⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁸⁴⁹<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats IPLab format reader:

- Channel : ID¹⁸⁵⁰
- Channel : SamplesPerPixel¹⁸⁵¹
- Image : AcquisitionDate¹⁸⁵²
- Image : Description¹⁸⁵³
- Image : ID¹⁸⁵⁴
- Image : Name¹⁸⁵⁵
- Image : ROIRef¹⁸⁵⁶
- Pixels : BinDataBigEndian¹⁸⁵⁷
- Pixels : DimensionOrder¹⁸⁵⁸
- Pixels : ID¹⁸⁵⁹
- Pixels : PhysicalSizeX¹⁸⁶⁰
- Pixels : PhysicalSizeY¹⁸⁶¹
- Pixels : SizeC¹⁸⁶²
- Pixels : SizeT¹⁸⁶³
- Pixels : SizeX¹⁸⁶⁴
- Pixels : SizeY¹⁸⁶⁵
- Pixels : SizeZ¹⁸⁶⁶
- Pixels : TimeIncrement¹⁸⁶⁷
- Pixels : Type¹⁸⁶⁸
- Plane : DeltaT¹⁸⁶⁹
- Plane : TheC¹⁸⁷⁰
- Plane : TheT¹⁸⁷¹
- Plane : TheZ¹⁸⁷²
- ROI : ID¹⁸⁷³

¹⁸⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁸⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁸⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁸⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

¹⁸⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁸⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁸⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

¹⁸⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁸⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁸⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁸⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

¹⁸⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

¹⁸⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁸⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁸⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁸⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

¹⁸⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁸⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

¹⁸⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁸⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

¹⁸⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁸⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁸⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁸⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

- Rectangle : Height¹⁸⁷⁴
- Rectangle : ID¹⁸⁷⁵
- Rectangle : Width¹⁸⁷⁶
- Rectangle : X¹⁸⁷⁷
- Rectangle : Y¹⁸⁷⁸

Total supported: 29

Total unknown or missing: 444

19.2.51 JEOLReader

This page lists supported metadata fields for the Bio-Formats JEOL format reader.

These fields are from the [OME data model](#)¹⁸⁷⁹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JEOL format reader:

- Channel : ID¹⁸⁸⁰
- Channel : SamplesPerPixel¹⁸⁸¹
- Image : AcquisitionDate¹⁸⁸²
- Image : ID¹⁸⁸³
- Image : Name¹⁸⁸⁴
- Pixels : BinDataBigEndian¹⁸⁸⁵
- Pixels : DimensionOrder¹⁸⁸⁶
- Pixels : ID¹⁸⁸⁷
- Pixels : SizeC¹⁸⁸⁸
- Pixels : SizeT¹⁸⁸⁹
- Pixels : SizeX¹⁸⁹⁰
- Pixels : SizeY¹⁸⁹¹

¹⁸⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Height

¹⁸⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

¹⁸⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Width

¹⁸⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_X

¹⁸⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Y

¹⁸⁷⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁸⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁸⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁸⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁸⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁸⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁸⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁸⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁸⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁸⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁸⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁸⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁸⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁸⁹²
- Pixels : Type¹⁸⁹³
- Plane : TheC¹⁸⁹⁴
- Plane : TheT¹⁸⁹⁵
- Plane : TheZ¹⁸⁹⁶

Total supported: 17

Total unknown or missing: 456

19.2.52 JPEG2000Reader

This page lists supported metadata fields for the Bio-Formats JPEG-2000 format reader.

These fields are from the [OME data model](#)¹⁸⁹⁷. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JPEG-2000 format reader:

- Channel : ID¹⁸⁹⁸
- Channel : SamplesPerPixel¹⁸⁹⁹
- Image : AcquisitionDate¹⁹⁰⁰
- Image : ID¹⁹⁰¹
- Image : Name¹⁹⁰²
- Pixels : BinDataBigEndian¹⁹⁰³
- Pixels : DimensionOrder¹⁹⁰⁴
- Pixels : ID¹⁹⁰⁵
- Pixels : SizeC¹⁹⁰⁶
- Pixels : SizeT¹⁹⁰⁷
- Pixels : SizeX¹⁹⁰⁸
- Pixels : SizeY¹⁹⁰⁹

¹⁸⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁸⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁸⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁸⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁸⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁸⁹⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁸⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁸⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁹¹⁰
- Pixels : Type¹⁹¹¹
- Plane : TheC¹⁹¹²
- Plane : TheT¹⁹¹³
- Plane : TheZ¹⁹¹⁴

Total supported: 17

Total unknown or missing: 456

19.2.53 JPEGReader

This page lists supported metadata fields for the Bio-Formats JPEG format reader.

These fields are from the [OME data model](#)¹⁹¹⁵. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JPEG format reader:

- Channel : ID¹⁹¹⁶
- Channel : SamplesPerPixel¹⁹¹⁷
- Image : AcquisitionDate¹⁹¹⁸
- Image : ID¹⁹¹⁹
- Image : Name¹⁹²⁰
- Pixels : BinDataBigEndian¹⁹²¹
- Pixels : DimensionOrder¹⁹²²
- Pixels : ID¹⁹²³
- Pixels : SizeC¹⁹²⁴
- Pixels : SizeT¹⁹²⁵
- Pixels : SizeX¹⁹²⁶
- Pixels : SizeY¹⁹²⁷

¹⁹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁹¹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁹²⁸
- Pixels : Type¹⁹²⁹
- Plane : TheC¹⁹³⁰
- Plane : TheT¹⁹³¹
- Plane : TheZ¹⁹³²

Total supported: 17

Total unknown or missing: 456

19.2.54 JPKReader

This page lists supported metadata fields for the Bio-Formats JPK Instruments format reader.

These fields are from the [OME data model](#)¹⁹³³. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JPK Instruments format reader:

- Channel : ID¹⁹³⁴
- Channel : SamplesPerPixel¹⁹³⁵
- Image : AcquisitionDate¹⁹³⁶
- Image : ID¹⁹³⁷
- Image : Name¹⁹³⁸
- Pixels : BinDataBigEndian¹⁹³⁹
- Pixels : DimensionOrder¹⁹⁴⁰
- Pixels : ID¹⁹⁴¹
- Pixels : SizeC¹⁹⁴²
- Pixels : SizeT¹⁹⁴³
- Pixels : SizeX¹⁹⁴⁴
- Pixels : SizeY¹⁹⁴⁵

¹⁹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁹³³<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁹⁴⁶
- Pixels : Type¹⁹⁴⁷
- Plane : TheC¹⁹⁴⁸
- Plane : TheT¹⁹⁴⁹
- Plane : TheZ¹⁹⁵⁰

Total supported: 17

Total unknown or missing: 456

19.2.55 JPXReader

This page lists supported metadata fields for the Bio-Formats JPX format reader.

These fields are from the [OME data model](#)¹⁹⁵¹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats JPX format reader:

- Channel : ID¹⁹⁵²
- Channel : SamplesPerPixel¹⁹⁵³
- Image : AcquisitionDate¹⁹⁵⁴
- Image : ID¹⁹⁵⁵
- Image : Name¹⁹⁵⁶
- Pixels : BinDataBigEndian¹⁹⁵⁷
- Pixels : DimensionOrder¹⁹⁵⁸
- Pixels : ID¹⁹⁵⁹
- Pixels : SizeC¹⁹⁶⁰
- Pixels : SizeT¹⁹⁶¹
- Pixels : SizeX¹⁹⁶²
- Pixels : SizeY¹⁹⁶³

¹⁹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁹⁵¹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁹⁶⁴
- Pixels : Type¹⁹⁶⁵
- Plane : TheC¹⁹⁶⁶
- Plane : TheT¹⁹⁶⁷
- Plane : TheZ¹⁹⁶⁸

Total supported: 17

Total unknown or missing: 456

19.2.56 KhorosReader

This page lists supported metadata fields for the Bio-Formats Khoros XV format reader.

These fields are from the [OME data model](#)¹⁹⁶⁹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Khoros XV format reader:

- Channel : ID¹⁹⁷⁰
- Channel : SamplesPerPixel¹⁹⁷¹
- Image : AcquisitionDate¹⁹⁷²
- Image : ID¹⁹⁷³
- Image : Name¹⁹⁷⁴
- Pixels : BinDataBigEndian¹⁹⁷⁵
- Pixels : DimensionOrder¹⁹⁷⁶
- Pixels : ID¹⁹⁷⁷
- Pixels : SizeC¹⁹⁷⁸
- Pixels : SizeT¹⁹⁷⁹
- Pixels : SizeX¹⁹⁸⁰
- Pixels : SizeY¹⁹⁸¹

¹⁹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁹⁶⁹<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

¹⁹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

¹⁹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

¹⁹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

¹⁹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ¹⁹⁸²
- Pixels : Type¹⁹⁸³
- Plane : TheC¹⁹⁸⁴
- Plane : TheT¹⁹⁸⁵
- Plane : TheZ¹⁹⁸⁶

Total supported: 17

Total unknown or missing: 456

19.2.57 KodakReader

This page lists supported metadata fields for the Bio-Formats Kodak Molecular Imaging format reader.

These fields are from the [OME data model](#)¹⁹⁸⁷. 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 473 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 Kodak Molecular Imaging format reader:

- Channel : ID¹⁹⁸⁸
- Channel : SamplesPerPixel¹⁹⁸⁹
- Image : AcquisitionDate¹⁹⁹⁰
- Image : ID¹⁹⁹¹
- Image : InstrumentRef¹⁹⁹²
- Image : Name¹⁹⁹³
- ImagingEnvironment : Temperature¹⁹⁹⁴
- Instrument : ID¹⁹⁹⁵
- Microscope : Model¹⁹⁹⁶
- Pixels : BinDataBigEndian¹⁹⁹⁷
- Pixels : DimensionOrder¹⁹⁹⁸
- Pixels : ID¹⁹⁹⁹

¹⁹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

¹⁹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

¹⁹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

¹⁹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

¹⁹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

¹⁹⁸⁷<http://www.openmicroscopy.org/site/support/ome-model/>

¹⁹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

¹⁹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

¹⁹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

¹⁹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

¹⁹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

¹⁹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

¹⁹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

¹⁹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

¹⁹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

¹⁹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

¹⁹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

¹⁹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

- Pixels : PhysicalSizeX²⁰⁰⁰
- Pixels : PhysicalSizeY²⁰⁰¹
- Pixels : SizeC²⁰⁰²
- Pixels : SizeT²⁰⁰³
- Pixels : SizeX²⁰⁰⁴
- Pixels : SizeY²⁰⁰⁵
- Pixels : SizeZ²⁰⁰⁶
- Pixels : Type²⁰⁰⁷
- Plane : ExposureTime²⁰⁰⁸
- Plane : TheC²⁰⁰⁹
- Plane : TheT²⁰¹⁰
- Plane : TheZ²⁰¹¹

Total supported: 24

Total unknown or missing: 449

19.2.58 LiFlimReader

This page lists supported metadata fields for the Bio-Formats LI-FLIM format reader.

These fields are from the [OME data model](#)²⁰¹². 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 473 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 LI-FLIM format reader:

- Channel : ID²⁰¹³
- Channel : SamplesPerPixel²⁰¹⁴
- Image : AcquisitionDate²⁰¹⁵
- Image : ID²⁰¹⁶
- Image : Name²⁰¹⁷

²⁰⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁰⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁰⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁰⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁰⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁰⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁰⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁰⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁰⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²⁰⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁰¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁰¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁰¹²<http://www.openmicroscopy.org/site/support/ome-model/>

²⁰¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁰¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁰¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁰¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁰¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

- Image : ROIRef²⁰¹⁸
- Pixels : BinDataBigEndian²⁰¹⁹
- Pixels : DimensionOrder²⁰²⁰
- Pixels : ID²⁰²¹
- Pixels : SizeC²⁰²²
- Pixels : SizeT²⁰²³
- Pixels : SizeX²⁰²⁴
- Pixels : SizeY²⁰²⁵
- Pixels : SizeZ²⁰²⁶
- Pixels : Type²⁰²⁷
- Plane : DeltaT²⁰²⁸
- Plane : ExposureTime²⁰²⁹
- Plane : TheC²⁰³⁰
- Plane : TheT²⁰³¹
- Plane : TheZ²⁰³²
- Polygon : ID²⁰³³
- Polygon : Points²⁰³⁴
- ROI : ID²⁰³⁵

Total supported: 23

Total unknown or missing: 450

19.2.59 LeicaReader

This page lists supported metadata fields for the Bio-Formats Leica format reader.

These fields are from the [OME data model](#)²⁰³⁶. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 54 of them (11%).
- Of those, Bio-Formats fully or partially converts 54 (100%).

²⁰¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

²⁰¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁰²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁰²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁰²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁰²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁰²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁰²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁰²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁰²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁰²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

²⁰²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²⁰³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁰³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁰³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁰³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²⁰³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polygon_Points

²⁰³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

²⁰³⁶<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Leica format reader:

- Channel : Color²⁰³⁷
- Channel : EmissionWavelength²⁰³⁸
- Channel : ExcitationWavelength²⁰³⁹
- Channel : ID²⁰⁴⁰
- Channel : Name²⁰⁴¹
- Channel : PinholeSize²⁰⁴²
- Channel : SamplesPerPixel²⁰⁴³
- Detector : ID²⁰⁴⁴
- Detector : Offset²⁰⁴⁵
- Detector : Type²⁰⁴⁶
- Detector : Voltage²⁰⁴⁷
- DetectorSettings : ID²⁰⁴⁸
- Filter : ID²⁰⁴⁹
- Filter : Model²⁰⁵⁰
- Image : AcquisitionDate²⁰⁵¹
- Image : Description²⁰⁵²
- Image : ID²⁰⁵³
- Image : InstrumentRef²⁰⁵⁴
- Image : Name²⁰⁵⁵
- Instrument : ID²⁰⁵⁶
- LightPath : EmissionFilterRef²⁰⁵⁷
- Objective : Correction²⁰⁵⁸
- Objective : ID²⁰⁵⁹
- Objective : Immersion²⁰⁶⁰

²⁰³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Color

²⁰³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

²⁰³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

²⁰⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁰⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²⁰⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PinholeSize

²⁰⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁰⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²⁰⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Offset

²⁰⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²⁰⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Voltage

²⁰⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

²⁰⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_ID

²⁰⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁰⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁰⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²⁰⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁰⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²⁰⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁰⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²⁰⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

²⁰⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

²⁰⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²⁰⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

- Objective : LensNA²⁰⁶¹
- Objective : Model²⁰⁶²
- Objective : NominalMagnification²⁰⁶³
- Objective : SerialNumber²⁰⁶⁴
- ObjectiveSettings : ID²⁰⁶⁵
- ObjectiveSettings : RefractiveIndex²⁰⁶⁶
- Pixels : BinDataBigEndian²⁰⁶⁷
- Pixels : DimensionOrder²⁰⁶⁸
- Pixels : ID²⁰⁶⁹
- Pixels : PhysicalSizeX²⁰⁷⁰
- Pixels : PhysicalSizeY²⁰⁷¹
- Pixels : PhysicalSizeZ²⁰⁷²
- Pixels : SizeC²⁰⁷³
- Pixels : SizeT²⁰⁷⁴
- Pixels : SizeX²⁰⁷⁵
- Pixels : SizeY²⁰⁷⁶
- Pixels : SizeZ²⁰⁷⁷
- Pixels : TimeIncrement²⁰⁷⁸
- Pixels : Type²⁰⁷⁹
- Plane : DeltaT²⁰⁸⁰
- Plane : ExposureTime²⁰⁸¹
- Plane : PositionX²⁰⁸²
- Plane : PositionY²⁰⁸³
- Plane : TheC²⁰⁸⁴
- Plane : TheT²⁰⁸⁵
- Plane : TheZ²⁰⁸⁶

²⁰⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

²⁰⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁰⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

²⁰⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

²⁰⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

²⁰⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

²⁰⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁰⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁰⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁰⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁰⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁰⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁰⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁰⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁰⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁰⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁰⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁰⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

²⁰⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁰⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

²⁰⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²⁰⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

²⁰⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

²⁰⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁰⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁰⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

- StageLabel : Name²⁰⁸⁷
- StageLabel : Z²⁰⁸⁸
- TransmittanceRange : CutIn²⁰⁸⁹
- TransmittanceRange : CutOut²⁰⁹⁰

Total supported: 54

Total unknown or missing: 419

19.2.60 LIFReader

This page lists supported metadata fields for the Bio-Formats Leica Image File Format format reader.

These fields are from the [OME data model](#)²⁰⁹¹. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 83 of them (17%).
- Of those, Bio-Formats fully or partially converts 83 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Leica Image File Format format reader:

- Channel : Color²⁰⁹²
- Channel : ExcitationWavelength²⁰⁹³
- Channel : ID²⁰⁹⁴
- Channel : LightSourceSettingsAttenuation²⁰⁹⁵
- Channel : LightSourceSettingsID²⁰⁹⁶
- Channel : Name²⁰⁹⁷
- Channel : PinholeSize²⁰⁹⁸
- Channel : SamplesPerPixel²⁰⁹⁹
- Detector : ID²¹⁰⁰
- Detector : Model²¹⁰¹
- Detector : Offset²¹⁰²
- Detector : Type²¹⁰³
- Detector : Zoom²¹⁰⁴

²⁰⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_Name

²⁰⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#StageLabel_Z

²⁰⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutIn

²⁰⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutOut

²⁰⁹¹<http://www.openmicroscopy.org/site/support/ome-model/>

²⁰⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Color

²⁰⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

²⁰⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁰⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_Attenuation

²⁰⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_ID

²⁰⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²⁰⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PinholeSize

²⁰⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²¹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Offset

²¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Zoom

- DetectorSettings : Gain²¹⁰⁵
- DetectorSettings : ID²¹⁰⁶
- DetectorSettings : Offset²¹⁰⁷
- Filter : ID²¹⁰⁸
- Filter : Model²¹⁰⁹
- Image : AcquisitionDate²¹¹⁰
- Image : Description²¹¹¹
- Image : ID²¹¹²
- Image : InstrumentRef²¹¹³
- Image : Name²¹¹⁴
- Image : ROIRef²¹¹⁵
- Instrument : ID²¹¹⁶
- Label : FontSize²¹¹⁷
- Label : ID²¹¹⁸
- Label : StrokeWidth²¹¹⁹
- Label : Text²¹²⁰
- Label : X²¹²¹
- Label : Y²¹²²
- Laser : ID²¹²³
- Laser : LaserMedium²¹²⁴
- Laser : Type²¹²⁵
- Laser : Wavelength²¹²⁶
- LightPath : EmissionFilterRef²¹²⁷
- Line : ID²¹²⁸
- Line : X1²¹²⁹
- Line : X2²¹³⁰

²¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

²¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

²¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Offset

²¹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_ID

²¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²¹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

²¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

²¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

²¹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

²¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Label_X

²¹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Label_Y

²¹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

²¹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_LaserMedium

²¹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Type

²¹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Wavelength

²¹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

²¹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²¹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X1

²¹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X2

- Line : Y1²¹³¹
- Line : Y2²¹³²
- Microscope : Model²¹³³
- Microscope : Type²¹³⁴
- Objective : Correction²¹³⁵
- Objective : ID²¹³⁶
- Objective : Immersion²¹³⁷
- Objective : LensNA²¹³⁸
- Objective : Model²¹³⁹
- Objective : NominalMagnification²¹⁴⁰
- Objective : SerialNumber²¹⁴¹
- ObjectiveSettings : ID²¹⁴²
- ObjectiveSettings : RefractiveIndex²¹⁴³
- Pixels : BinDataBigEndian²¹⁴⁴
- Pixels : DimensionOrder²¹⁴⁵
- Pixels : ID²¹⁴⁶
- Pixels : PhysicalSizeX²¹⁴⁷
- Pixels : PhysicalSizeY²¹⁴⁸
- Pixels : PhysicalSizeZ²¹⁴⁹
- Pixels : SizeC²¹⁵⁰
- Pixels : SizeT²¹⁵¹
- Pixels : SizeX²¹⁵²
- Pixels : SizeY²¹⁵³
- Pixels : SizeZ²¹⁵⁴
- Pixels : TimeIncrement²¹⁵⁵
- Pixels : Type²¹⁵⁶

²¹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y1

²¹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y2

²¹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²¹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Microscope_Type

²¹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

²¹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²¹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

²¹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

²¹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²¹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

²¹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

²¹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

²¹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

²¹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²¹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²¹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²¹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²¹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²¹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²¹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²¹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²¹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²¹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²¹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²¹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

²¹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

- Plane : DeltaT²¹⁵⁷
- Plane : ExposureTime²¹⁵⁸
- Plane : PositionX²¹⁵⁹
- Plane : PositionY²¹⁶⁰
- Plane : PositionZ²¹⁶¹
- Plane : TheC²¹⁶²
- Plane : TheT²¹⁶³
- Plane : TheZ²¹⁶⁴
- Polygon : ID²¹⁶⁵
- Polygon : Points²¹⁶⁶
- ROI : ID²¹⁶⁷
- Rectangle : Height²¹⁶⁸
- Rectangle : ID²¹⁶⁹
- Rectangle : Width²¹⁷⁰
- Rectangle : X²¹⁷¹
- Rectangle : Y²¹⁷²
- TransmittanceRange : CutIn²¹⁷³
- TransmittanceRange : CutOut²¹⁷⁴

Total supported: 83

Total unknown or missing: 390

19.2.61 LeicaSCNReader

This page lists supported metadata fields for the Bio-Formats Leica SCN format reader.

These fields are from the [OME data model](#)²¹⁷⁵. 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 473 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%).

²¹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

²¹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²¹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

²¹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

²¹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

²¹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²¹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²¹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²¹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²¹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polygon_Points

²¹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

²¹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Height

²¹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²¹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Width

²¹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_X

²¹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Y

²¹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutIn

²¹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutOut

²¹⁷⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Leica SCN format reader:

- Channel : ID²¹⁷⁶
- Channel : IlluminationType²¹⁷⁷
- Channel : SamplesPerPixel²¹⁷⁸
- Image : AcquisitionDate²¹⁷⁹
- Image : Description²¹⁸⁰
- Image : ID²¹⁸¹
- Image : InstrumentRef²¹⁸²
- Image : Name²¹⁸³
- Instrument : ID²¹⁸⁴
- Objective : CalibratedMagnification²¹⁸⁵
- Objective : ID²¹⁸⁶
- Objective : LensNA²¹⁸⁷
- Objective : NominalMagnification²¹⁸⁸
- ObjectiveSettings : ID²¹⁸⁹
- Pixels : BinDataBigEndian²¹⁹⁰
- Pixels : DimensionOrder²¹⁹¹
- Pixels : ID²¹⁹²
- Pixels : PhysicalSizeX²¹⁹³
- Pixels : PhysicalSizeY²¹⁹⁴
- Pixels : PhysicalSizeZ²¹⁹⁵
- Pixels : SizeC²¹⁹⁶
- Pixels : SizeT²¹⁹⁷
- Pixels : SizeX²¹⁹⁸
- Pixels : SizeY²¹⁹⁹

²¹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²¹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_IlluminationType

²¹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²¹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²¹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²¹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²¹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²¹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²¹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²¹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification

²¹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²¹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

²¹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

²¹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

²¹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²¹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²¹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²¹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²¹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²¹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²¹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²¹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²¹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²¹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ²²⁰⁰
- Pixels : Type²²⁰¹
- Plane : PositionX²²⁰²
- Plane : PositionY²²⁰³
- Plane : TheC²²⁰⁴
- Plane : TheT²²⁰⁵
- Plane : TheZ²²⁰⁶

Total supported: 31

Total unknown or missing: 442

19.2.62 LEORReader

This page lists supported metadata fields for the Bio-Formats LEO format reader.

These fields are from the [OME data model](#)²²⁰⁷. 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 473 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 LEO format reader:

- Channel : ID²²⁰⁸
- Channel : SamplesPerPixel²²⁰⁹
- Image : AcquisitionDate²²¹⁰
- Image : ID²²¹¹
- Image : InstrumentRef²²¹²
- Image : Name²²¹³
- Instrument : ID²²¹⁴
- Objective : Correction²²¹⁵
- Objective : ID²²¹⁶
- Objective : Immersion²²¹⁷

²²⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²²⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²²⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

²²⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

²²⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²²⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²²⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²²⁰⁷<http://www.openmicroscopy.org/site/support/ome-model/>

²²⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²²⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²²¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²²¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²²¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²²¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²²¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²²¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

²²¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²²¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

- Objective : WorkingDistance²²¹⁸
- Pixels : BinDataBigEndian²²¹⁹
- Pixels : DimensionOrder²²²⁰
- Pixels : ID²²²¹
- Pixels : PhysicalSizeX²²²²
- Pixels : PhysicalSizeY²²²³
- Pixels : SizeC²²²⁴
- Pixels : SizeT²²²⁵
- Pixels : SizeX²²²⁶
- Pixels : SizeY²²²⁷
- Pixels : SizeZ²²²⁸
- Pixels : Type²²²⁹
- Plane : TheC²²³⁰
- Plane : TheT²²³¹
- Plane : TheZ²²³²

Total supported: 25

Total unknown or missing: 448

19.2.63 L2DReader

This page lists supported metadata fields for the Bio-Formats Li-Cor L2D format reader.

These fields are from the [OME data model](#)²²³³. 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 473 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 Li-Cor L2D format reader:

- Channel : ID²²³⁴
- Channel : LightSourceSettingsID²²³⁵

²²¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_WorkingDistance

²²¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²²²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²²²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²²²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²²²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²²²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²²²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²²²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²²²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²²²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²²²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²²³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²²³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²²³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²²³³<http://www.openmicroscopy.org/site/support/ome-model/>

²²³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²²³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_ID

- Channel : SamplesPerPixel²²³⁶
- Image : AcquisitionDate²²³⁷
- Image : Description²²³⁸
- Image : ID²²³⁹
- Image : InstrumentRef²²⁴⁰
- Image : Name²²⁴¹
- Instrument : ID²²⁴²
- Laser : ID²²⁴³
- Laser : LaserMedium²²⁴⁴
- Laser : Type²²⁴⁵
- Laser : Wavelength²²⁴⁶
- Microscope : Model²²⁴⁷
- Microscope : Type²²⁴⁸
- Pixels : BinDataBigEndian²²⁴⁹
- Pixels : DimensionOrder²²⁵⁰
- Pixels : ID²²⁵¹
- Pixels : SizeC²²⁵²
- Pixels : SizeT²²⁵³
- Pixels : SizeX²²⁵⁴
- Pixels : SizeY²²⁵⁵
- Pixels : SizeZ²²⁵⁶
- Pixels : Type²²⁵⁷
- Plane : TheC²²⁵⁸
- Plane : TheT²²⁵⁹
- Plane : TheZ²²⁶⁰

Total supported: 27

Total unknown or missing: 446

²²³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²²³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²²³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²²³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²²⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²²⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²²⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²²⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

²²⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_LaserMedium

²²⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Type

²²⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Wavelength

²²⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²²⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Microscope_Type

²²⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²²⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²²⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²²⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²²⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²²⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²²⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²²⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²²⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²²⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²²⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²²⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.64 LIMReader

This page lists supported metadata fields for the Bio-Formats Laboratory Imaging format reader.

These fields are from the [OME data model](#)²²⁶¹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Laboratory Imaging format reader:

- Channel : ID²²⁶²
- Channel : SamplesPerPixel²²⁶³
- Image : AcquisitionDate²²⁶⁴
- Image : ID²²⁶⁵
- Image : Name²²⁶⁶
- Pixels : BinDataBigEndian²²⁶⁷
- Pixels : DimensionOrder²²⁶⁸
- Pixels : ID²²⁶⁹
- Pixels : SizeC²²⁷⁰
- Pixels : SizeT²²⁷¹
- Pixels : SizeX²²⁷²
- Pixels : SizeY²²⁷³
- Pixels : SizeZ²²⁷⁴
- Pixels : Type²²⁷⁵
- Plane : TheC²²⁷⁶
- Plane : TheT²²⁷⁷
- Plane : TheZ²²⁷⁸

Total supported: 17

Total unknown or missing: 456

²²⁶¹<http://www.openmicroscopy.org/site/support/ome-model/>

²²⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²²⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²²⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²²⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²²⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²²⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²²⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²²⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²²⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²²⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²²⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²²⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²²⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²²⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²²⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²²⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²²⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.65 MetamorphTiffReader

This page lists supported metadata fields for the Bio-Formats Metamorph TIFF format reader.

These fields are from the [OME data model](#)²²⁷⁹. 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 473 fields documented in the *metadata summary table*:

- 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 Metamorph TIFF format reader:

- Channel : ID²²⁸⁰
- Channel : Name²²⁸¹
- Channel : SamplesPerPixel²²⁸²
- Image : AcquisitionDate²²⁸³
- Image : Description²²⁸⁴
- Image : ID²²⁸⁵
- Image : Name²²⁸⁶
- ImagingEnvironment : Temperature²²⁸⁷
- Pixels : BinDataBigEndian²²⁸⁸
- Pixels : DimensionOrder²²⁸⁹
- Pixels : ID²²⁹⁰
- Pixels : PhysicalSizeX²²⁹¹
- Pixels : PhysicalSizeY²²⁹²
- Pixels : PhysicalSizeZ²²⁹³
- Pixels : SizeC²²⁹⁴
- Pixels : SizeT²²⁹⁵
- Pixels : SizeX²²⁹⁶
- Pixels : SizeY²²⁹⁷

²²⁷⁹<http://www.openmicroscopy.org/site/support/ome-model/>

²²⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²²⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²²⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²²⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²²⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²²⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²²⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²²⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

²²⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²²⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²²⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²²⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²²⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²²⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²²⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²²⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²²⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²²⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ²²⁹⁸
- Pixels : Type²²⁹⁹
- Plane : DeltaT²³⁰⁰
- Plane : ExposureTime²³⁰¹
- Plane : PositionX²³⁰²
- Plane : PositionY²³⁰³
- Plane : TheC²³⁰⁴
- Plane : TheT²³⁰⁵
- Plane : TheZ²³⁰⁶
- Plate : ColumnNamingConvention²³⁰⁷
- Plate : ID²³⁰⁸
- Plate : RowNamingConvention²³⁰⁹
- Well : Column²³¹⁰
- Well : ID²³¹¹
- Well : Row²³¹²
- WellSample : ID²³¹³
- WellSample : ImageRef²³¹⁴
- WellSample : Index²³¹⁵

Total supported: 36

Total unknown or missing: 437

19.2.66 MetamorphReader

This page lists supported metadata fields for the Bio-Formats Metamorph STK format reader.

These fields are from the OME data model²³¹⁶. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 41 of them (8%).
- Of those, Bio-Formats fully or partially converts 41 (100%).

²²⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²²⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²³⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

²³⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²³⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

²³⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

²³⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²³⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²³⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²³⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ColumnNamingConvention

²³⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID

²³⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_RowNamingConvention

²³¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column

²³¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID

²³¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row

²³¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

²³¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

²³¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

²³¹⁶<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Metamorph STK format reader:

- Channel : ID²³¹⁷
- Channel : LightSourceSettingsID²³¹⁸
- Channel : LightSourceSettingsWavelength²³¹⁹
- Channel : Name²³²⁰
- Channel : SamplesPerPixel²³²¹
- Detector : ID²³²²
- Detector : Type²³²³
- DetectorSettings : Binning²³²⁴
- DetectorSettings : Gain²³²⁵
- DetectorSettings : ID²³²⁶
- DetectorSettings : ReadOutRate²³²⁷
- Image : AcquisitionDate²³²⁸
- Image : Description²³²⁹
- Image : ID²³³⁰
- Image : InstrumentRef²³³¹
- Image : Name²³³²
- ImagingEnvironment : Temperature²³³³
- Instrument : ID²³³⁴
- Laser : ID²³³⁵
- Laser : LaserMedium²³³⁶
- Laser : Type²³³⁷
- Pixels : BinDataBigEndian²³³⁸
- Pixels : DimensionOrder²³³⁹
- Pixels : ID²³⁴⁰

²³¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²³¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_ID

²³¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_Wavelength

²³²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²³²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²³²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²³²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²³²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

²³²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

²³²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

²³²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ReadOutRate

²³²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²³²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²³³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²³³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²³³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²³³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

²³³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²³³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

²³³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_LaserMedium

²³³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Type

²³³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²³³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²³⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

- Pixels : PhysicalSizeX²³⁴¹
- Pixels : PhysicalSizeY²³⁴²
- Pixels : PhysicalSizeZ²³⁴³
- Pixels : SizeC²³⁴⁴
- Pixels : SizeT²³⁴⁵
- Pixels : SizeX²³⁴⁶
- Pixels : SizeY²³⁴⁷
- Pixels : SizeZ²³⁴⁸
- Pixels : Type²³⁴⁹
- Plane : DeltaT²³⁵⁰
- Plane : ExposureTime²³⁵¹
- Plane : PositionX²³⁵²
- Plane : PositionY²³⁵³
- Plane : PositionZ²³⁵⁴
- Plane : TheC²³⁵⁵
- Plane : TheT²³⁵⁶
- Plane : TheZ²³⁵⁷

Total supported: 41

Total unknown or missing: 432

19.2.67 MIASReader

This page lists supported metadata fields for the Bio-Formats MIAS format reader.

These fields are from the [OME data model](#)²³⁵⁸. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 62 of them (13%).
- Of those, Bio-Formats fully or partially converts 62 (100%).

²³⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²³⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²³⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²³⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²³⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²³⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²³⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²³⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²³⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²³⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

²³⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²³⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

²³⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

²³⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

²³⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²³⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²³⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²³⁵⁸<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats MIAS format reader:

- Channel : Color²³⁵⁹
- Channel : ID²³⁶⁰
- Channel : Name²³⁶¹
- Channel : SamplesPerPixel²³⁶²
- Ellipse : ID²³⁶³
- Ellipse : RadiusX²³⁶⁴
- Ellipse : RadiusY²³⁶⁵
- Ellipse : Text²³⁶⁶
- Ellipse : TheT²³⁶⁷
- Ellipse : TheZ²³⁶⁸
- Ellipse : X²³⁶⁹
- Ellipse : Y²³⁷⁰
- Experiment : Description²³⁷¹
- Experiment : ID²³⁷²
- Experiment : Type²³⁷³
- Image : AcquisitionDate²³⁷⁴
- Image : ExperimentRef²³⁷⁵
- Image : ID²³⁷⁶
- Image : InstrumentRef²³⁷⁷
- Image : Name²³⁷⁸
- Image : ROIRef²³⁷⁹
- Instrument : ID²³⁸⁰
- Mask : FillColor²³⁸¹
- Mask : Height²³⁸²

²³⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Color

²³⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²³⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²³⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²³⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²³⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusX

²³⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusY

²³⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

²³⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

²³⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

²³⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_X

²³⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_Y

²³⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_Description

²³⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_ID

²³⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_Type

²³⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²³⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ExperimentRef_ID

²³⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²³⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²³⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²³⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

²³⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²³⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FillColor

²³⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_Height

- Mask : ID²³⁸³
- Mask : StrokeColor²³⁸⁴
- Mask : Width²³⁸⁵
- Mask : X²³⁸⁶
- Mask : Y²³⁸⁷
- Objective : ID²³⁸⁸
- Objective : Model²³⁸⁹
- Objective : NominalMagnification²³⁹⁰
- Pixels : BinDataBigEndian²³⁹¹
- Pixels : DimensionOrder²³⁹²
- Pixels : ID²³⁹³
- Pixels : PhysicalSizeX²³⁹⁴
- Pixels : PhysicalSizeY²³⁹⁵
- Pixels : SizeC²³⁹⁶
- Pixels : SizeT²³⁹⁷
- Pixels : SizeX²³⁹⁸
- Pixels : SizeY²³⁹⁹
- Pixels : SizeZ²⁴⁰⁰
- Pixels : Type²⁴⁰¹
- Plane : ExposureTime²⁴⁰²
- Plane : TheC²⁴⁰³
- Plane : TheT²⁴⁰⁴
- Plane : TheZ²⁴⁰⁵
- Plate : ColumnNamingConvention²⁴⁰⁶
- Plate : ExternalIdentifier²⁴⁰⁷
- Plate : ID²⁴⁰⁸

²³⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²³⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeColor

²³⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_Width

²³⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_X

²³⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_Y

²³⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²³⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²³⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

²³⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²³⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²³⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²³⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²³⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²³⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²³⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²³⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²³⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁴⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁴⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁴⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²⁴⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁴⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁴⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁴⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ColumnNamingConvention

²⁴⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ExternalIdentifier

²⁴⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID

- Plate : Name²⁴⁰⁹
- Plate : RowNamingConvention²⁴¹⁰
- PlateAcquisition : ID²⁴¹¹
- PlateAcquisition : MaximumFieldCount²⁴¹²
- PlateAcquisition : WellSampleRef²⁴¹³
- ROI : ID²⁴¹⁴
- Well : Column²⁴¹⁵
- Well : ID²⁴¹⁶
- Well : Row²⁴¹⁷
- WellSample : ID²⁴¹⁸
- WellSample : ImageRef²⁴¹⁹
- WellSample : Index²⁴²⁰

Total supported: 62

Total unknown or missing: 411

19.2.68 MicromanagerReader

This page lists supported metadata fields for the Bio-Formats Micro-Manager format reader.

These fields are from the [OME data model](#)²⁴²¹. 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 473 fields documented in the *metadata summary table*:

- 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 Micro-Manager format reader:

- Channel : ID²⁴²²
- Channel : Name²⁴²³
- Channel : SamplesPerPixel²⁴²⁴
- Detector : ID²⁴²⁵
- Detector : Manufacturer²⁴²⁶

²⁴⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Name

²⁴¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_RowNamingConvention

²⁴¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_ID

²⁴¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

²⁴¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSampleRef_ID

²⁴¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

²⁴¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column

²⁴¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID

²⁴¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row

²⁴¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

²⁴¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

²⁴²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

²⁴²¹<http://www.openmicroscopy.org/site/support/ome-model/>

²⁴²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁴²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²⁴²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁴²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²⁴²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

- Detector : Model²⁴²⁷
- Detector : SerialNumber²⁴²⁸
- Detector : Type²⁴²⁹
- DetectorSettings : Binning²⁴³⁰
- DetectorSettings : Gain²⁴³¹
- DetectorSettings : ID²⁴³²
- DetectorSettings : Voltage²⁴³³
- Image : AcquisitionDate²⁴³⁴
- Image : Description²⁴³⁵
- Image : ID²⁴³⁶
- Image : InstrumentRef²⁴³⁷
- Image : Name²⁴³⁸
- ImagingEnvironment : Temperature²⁴³⁹
- Instrument : ID²⁴⁴⁰
- Pixels : BinDataBigEndian²⁴⁴¹
- Pixels : DimensionOrder²⁴⁴²
- Pixels : ID²⁴⁴³
- Pixels : PhysicalSizeX²⁴⁴⁴
- Pixels : PhysicalSizeY²⁴⁴⁵
- Pixels : PhysicalSizeZ²⁴⁴⁶
- Pixels : SizeC²⁴⁴⁷
- Pixels : SizeT²⁴⁴⁸
- Pixels : SizeX²⁴⁴⁹
- Pixels : SizeY²⁴⁵⁰
- Pixels : SizeZ²⁴⁵¹
- Pixels : Type²⁴⁵²

²⁴²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁴²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

²⁴²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²⁴³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

²⁴³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

²⁴³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

²⁴³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Voltage

²⁴³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁴³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²⁴³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁴³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²⁴³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁴³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

²⁴⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²⁴⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁴⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁴⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁴⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁴⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁴⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁴⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁴⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁴⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁴⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁴⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁴⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

- Plane : DeltaT²⁴⁵³
- Plane : ExposureTime²⁴⁵⁴
- Plane : TheC²⁴⁵⁵
- Plane : TheT²⁴⁵⁶
- Plane : TheZ²⁴⁵⁷

Total supported: 36

Total unknown or missing: 437

19.2.69 MINCReader

This page lists supported metadata fields for the Bio-Formats MINC MRI 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 473 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 MINC MRI format reader:

- Channel : ID²⁴⁵⁹
- Channel : SamplesPerPixel²⁴⁶⁰
- Image : AcquisitionDate²⁴⁶¹
- Image : Description²⁴⁶²
- Image : ID²⁴⁶³
- Image : Name²⁴⁶⁴
- Pixels : BinDataBigEndian²⁴⁶⁵
- Pixels : DimensionOrder²⁴⁶⁶
- Pixels : ID²⁴⁶⁷
- Pixels : PhysicalSizeX²⁴⁶⁸
- Pixels : PhysicalSizeY²⁴⁶⁹
- Pixels : PhysicalSizeZ²⁴⁷⁰

²⁴⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

²⁴⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²⁴⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁴⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁴⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁴⁵⁸<http://www.openmicroscopy.org/site/support/ome-model/>

²⁴⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁴⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁴⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁴⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²⁴⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁴⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁴⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁴⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁴⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁴⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁴⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁴⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

- Pixels : SizeC²⁴⁷¹
- Pixels : SizeT²⁴⁷²
- Pixels : SizeX²⁴⁷³
- Pixels : SizeY²⁴⁷⁴
- Pixels : SizeZ²⁴⁷⁵
- Pixels : Type²⁴⁷⁶
- Plane : TheC²⁴⁷⁷
- Plane : TheT²⁴⁷⁸
- Plane : TheZ²⁴⁷⁹

Total supported: 21

Total unknown or missing: 452

19.2.70 MRWReader

This page lists supported metadata fields for the Bio-Formats Minolta MRW format reader.

These fields are from the [OME data model](#)²⁴⁸⁰. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Minolta MRW format reader:

- Channel : ID²⁴⁸¹
- Channel : SamplesPerPixel²⁴⁸²
- Image : AcquisitionDate²⁴⁸³
- Image : ID²⁴⁸⁴
- Image : Name²⁴⁸⁵
- Pixels : BinDataBigEndian²⁴⁸⁶
- Pixels : DimensionOrder²⁴⁸⁷
- Pixels : ID²⁴⁸⁸

²⁴⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁴⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁴⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁴⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁴⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁴⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁴⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁴⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁴⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁴⁸⁰<http://www.openmicroscopy.org/site/support/ome-model/>

²⁴⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁴⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁴⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁴⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁴⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁴⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁴⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁴⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

- Pixels : SizeC²⁴⁸⁹
- Pixels : SizeT²⁴⁹⁰
- Pixels : SizeX²⁴⁹¹
- Pixels : SizeY²⁴⁹²
- Pixels : SizeZ²⁴⁹³
- Pixels : Type²⁴⁹⁴
- Plane : TheC²⁴⁹⁵
- Plane : TheT²⁴⁹⁶
- Plane : TheZ²⁴⁹⁷

Total supported: 17

Total unknown or missing: 456

19.2.71 MNGReader

This page lists supported metadata fields for the Bio-Formats Multiple Network Graphics format reader.

These fields are from the [OME data model](#)²⁴⁹⁸. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Multiple Network Graphics format reader:

- Channel : ID²⁴⁹⁹
- Channel : SamplesPerPixel²⁵⁰⁰
- Image : AcquisitionDate²⁵⁰¹
- Image : ID²⁵⁰²
- Image : Name²⁵⁰³
- Pixels : BinDataBigEndian²⁵⁰⁴
- Pixels : DimensionOrder²⁵⁰⁵
- Pixels : ID²⁵⁰⁶

²⁴⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁴⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁴⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁴⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁴⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁴⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁴⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁴⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁴⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁴⁹⁸<http://www.openmicroscopy.org/site/support/ome-model/>

²⁴⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁵⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁵⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁵⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁵⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁵⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁵⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁵⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

- Pixels : SizeC²⁵⁰⁷
- Pixels : SizeT²⁵⁰⁸
- Pixels : SizeX²⁵⁰⁹
- Pixels : SizeY²⁵¹⁰
- Pixels : SizeZ²⁵¹¹
- Pixels : Type²⁵¹²
- Plane : TheC²⁵¹³
- Plane : TheT²⁵¹⁴
- Plane : TheZ²⁵¹⁵

Total supported: 17

Total unknown or missing: 456

19.2.72 MolecularImagingReader

This page lists supported metadata fields for the Bio-Formats Molecular Imaging format reader.

These fields are from the [OME data model](#)²⁵¹⁶. 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 473 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 Molecular Imaging format reader:

- Channel : ID²⁵¹⁷
- Channel : SamplesPerPixel²⁵¹⁸
- Image : AcquisitionDate²⁵¹⁹
- Image : ID²⁵²⁰
- Image : Name²⁵²¹
- Pixels : BinDataBigEndian²⁵²²
- Pixels : DimensionOrder²⁵²³
- Pixels : ID²⁵²⁴

²⁵⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁵⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁵⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁵¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁵¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁵¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁵¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁵¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁵¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁵¹⁶<http://www.openmicroscopy.org/site/support/ome-model/>

²⁵¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁵¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁵¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁵²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁵²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁵²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁵²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁵²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

- Pixels : PhysicalSizeX²⁵²⁵
- Pixels : PhysicalSizeY²⁵²⁶
- Pixels : SizeC²⁵²⁷
- Pixels : SizeT²⁵²⁸
- Pixels : SizeX²⁵²⁹
- Pixels : SizeY²⁵³⁰
- Pixels : SizeZ²⁵³¹
- Pixels : Type²⁵³²
- Plane : TheC²⁵³³
- Plane : TheT²⁵³⁴
- Plane : TheZ²⁵³⁵

Total supported: 19

Total unknown or missing: 454

19.2.73 MRCReader

This page lists supported metadata fields for the Bio-Formats Medical Research Council format reader.

These fields are from the [OME data model](#)²⁵³⁶. 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 473 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 Medical Research Council format reader:

- Channel : ID²⁵³⁷
- Channel : SamplesPerPixel²⁵³⁸
- Image : AcquisitionDate²⁵³⁹
- Image : ID²⁵⁴⁰
- Image : Name²⁵⁴¹
- Pixels : BinDataBigEndian²⁵⁴²

²⁵²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁵²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁵²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁵²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁵²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁵³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁵³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁵³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁵³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁵³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁵³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁵³⁶<http://www.openmicroscopy.org/site/support/ome-model/>

²⁵³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁵³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁵³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁵⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁵⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁵⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

- Pixels : DimensionOrder²⁵⁴³
- Pixels : ID²⁵⁴⁴
- Pixels : PhysicalSizeX²⁵⁴⁵
- Pixels : PhysicalSizeY²⁵⁴⁶
- Pixels : PhysicalSizeZ²⁵⁴⁷
- Pixels : SizeC²⁵⁴⁸
- Pixels : SizeT²⁵⁴⁹
- Pixels : SizeX²⁵⁵⁰
- Pixels : SizeY²⁵⁵¹
- Pixels : SizeZ²⁵⁵²
- Pixels : Type²⁵⁵³
- Plane : TheC²⁵⁵⁴
- Plane : TheT²⁵⁵⁵
- Plane : TheZ²⁵⁵⁶

Total supported: 20

Total unknown or missing: 453

19.2.74 NikonReader

This page lists supported metadata fields for the Bio-Formats Nikon NEF format reader.

These fields are from the OME data model²⁵⁵⁷. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Nikon NEF format reader:

- Channel : ID²⁵⁵⁸
- Channel : SamplesPerPixel²⁵⁵⁹
- Image : AcquisitionDate²⁵⁶⁰

²⁵⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁵⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁵⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁵⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁵⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁵⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁵⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁵⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁵⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁵⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁵⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁵⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁵⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁵⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁵⁵⁷<http://www.openmicroscopy.org/site/support/ome-model/>

²⁵⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁵⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁵⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

- Image : ID²⁵⁶¹
- Image : Name²⁵⁶²
- Pixels : BinDataBigEndian²⁵⁶³
- Pixels : DimensionOrder²⁵⁶⁴
- Pixels : ID²⁵⁶⁵
- Pixels : SizeC²⁵⁶⁶
- Pixels : SizeT²⁵⁶⁷
- Pixels : SizeX²⁵⁶⁸
- Pixels : SizeY²⁵⁶⁹
- Pixels : SizeZ²⁵⁷⁰
- Pixels : Type²⁵⁷¹
- Plane : TheC²⁵⁷²
- Plane : TheT²⁵⁷³
- Plane : TheZ²⁵⁷⁴

Total supported: 17

Total unknown or missing: 456

19.2.75 NiftiReader

This page lists supported metadata fields for the Bio-Formats NIFTI format reader.

These fields are from the OME data model²⁵⁷⁵. 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 473 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 NIFTI format reader:

- Channel : ID²⁵⁷⁶
- Channel : SamplesPerPixel²⁵⁷⁷
- Image : AcquisitionDate²⁵⁷⁸

²⁵⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁵⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁵⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁵⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁵⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁵⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁵⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁵⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁵⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁵⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁵⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁵⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁵⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁵⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁵⁷⁵<http://www.openmicroscopy.org/site/support/ome-model/>

²⁵⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁵⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁵⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

- Image : Description²⁵⁷⁹
- Image : ID²⁵⁸⁰
- Image : Name²⁵⁸¹
- Pixels : BinDataBigEndian²⁵⁸²
- Pixels : DimensionOrder²⁵⁸³
- Pixels : ID²⁵⁸⁴
- Pixels : PhysicalSizeX²⁵⁸⁵
- Pixels : PhysicalSizeY²⁵⁸⁶
- Pixels : PhysicalSizeZ²⁵⁸⁷
- Pixels : SizeC²⁵⁸⁸
- Pixels : SizeT²⁵⁸⁹
- Pixels : SizeX²⁵⁹⁰
- Pixels : SizeY²⁵⁹¹
- Pixels : SizeZ²⁵⁹²
- Pixels : TimeIncrement²⁵⁹³
- Pixels : Type²⁵⁹⁴
- Plane : TheC²⁵⁹⁵
- Plane : TheT²⁵⁹⁶
- Plane : TheZ²⁵⁹⁷

Total supported: 22

Total unknown or missing: 451

19.2.76 NikonElementsTiffReader

This page lists supported metadata fields for the Bio-Formats Nikon Elements TIFF format reader.

These fields are from the [OME data model](#)²⁵⁹⁸. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 48 of them (10%).
- Of those, Bio-Formats fully or partially converts 48 (100%).

²⁵⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²⁵⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁵⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁵⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁵⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁵⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁵⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁵⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁵⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁵⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁵⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁵⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁵⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁵⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁵⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

²⁵⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁵⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁵⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁵⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁵⁹⁸<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Nikon Elements TIFF format reader:

- Channel : AcquisitionMode²⁵⁹⁹
- Channel : EmissionWavelength²⁶⁰⁰
- Channel : ExcitationWavelength²⁶⁰¹
- Channel : ID²⁶⁰²
- Channel : Name²⁶⁰³
- Channel : PinholeSize²⁶⁰⁴
- Channel : SamplesPerPixel²⁶⁰⁵
- Detector : ID²⁶⁰⁶
- Detector : Model²⁶⁰⁷
- Detector : Type²⁶⁰⁸
- DetectorSettings : Binning²⁶⁰⁹
- DetectorSettings : Gain²⁶¹⁰
- DetectorSettings : ID²⁶¹¹
- DetectorSettings : ReadOutRate²⁶¹²
- DetectorSettings : Voltage²⁶¹³
- Image : AcquisitionDate²⁶¹⁴
- Image : ID²⁶¹⁵
- Image : InstrumentRef²⁶¹⁶
- Image : Name²⁶¹⁷
- ImagingEnvironment : Temperature²⁶¹⁸
- Instrument : ID²⁶¹⁹
- Objective : CalibratedMagnification²⁶²⁰
- Objective : Correction²⁶²¹
- Objective : ID²⁶²²

²⁵⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_AcquisitionMode

²⁶⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

²⁶⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

²⁶⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁶⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²⁶⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PinholeSize

²⁶⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁶⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²⁶⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁶⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²⁶⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

²⁶¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

²⁶¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

²⁶¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ReadOutRate

²⁶¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Voltage

²⁶¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁶¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁶¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²⁶¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁶¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

²⁶¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²⁶²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification

²⁶²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

²⁶²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

- Objective : Immersion²⁶²³
- Objective : LensNA²⁶²⁴
- Objective : Model²⁶²⁵
- ObjectiveSettings : ID²⁶²⁶
- ObjectiveSettings : RefractiveIndex²⁶²⁷
- Pixels : BinDataBigEndian²⁶²⁸
- Pixels : DimensionOrder²⁶²⁹
- Pixels : ID²⁶³⁰
- Pixels : PhysicalSizeX²⁶³¹
- Pixels : PhysicalSizeY²⁶³²
- Pixels : PhysicalSizeZ²⁶³³
- Pixels : SizeC²⁶³⁴
- Pixels : SizeT²⁶³⁵
- Pixels : SizeX²⁶³⁶
- Pixels : SizeY²⁶³⁷
- Pixels : SizeZ²⁶³⁸
- Pixels : Type²⁶³⁹
- Plane : ExposureTime²⁶⁴⁰
- Plane : PositionX²⁶⁴¹
- Plane : PositionY²⁶⁴²
- Plane : PositionZ²⁶⁴³
- Plane : TheC²⁶⁴⁴
- Plane : TheT²⁶⁴⁵
- Plane : TheZ²⁶⁴⁶

Total supported: 48

Total unknown or missing: 425

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- ²⁶²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion
- ²⁶²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA
- ²⁶²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model
- ²⁶²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID
- ²⁶²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex
- ²⁶²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian
- ²⁶²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder
- ²⁶³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID
- ²⁶³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX
- ²⁶³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY
- ²⁶³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ²⁶³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC
- ²⁶³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT
- ²⁶³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX
- ²⁶³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY
- ²⁶³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ
- ²⁶³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type
- ²⁶⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime
- ²⁶⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX
- ²⁶⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY
- ²⁶⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ
- ²⁶⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC
- ²⁶⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT
- ²⁶⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.77 NikonTiffReader

This page lists supported metadata fields for the Bio-Formats Nikon TIFF format reader.

These fields are from the [OME data model](#)²⁶⁴⁷. 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 473 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 Nikon TIFF format reader:

- Channel : EmissionWavelength²⁶⁴⁸
- Channel : ExcitationWavelength²⁶⁴⁹
- Channel : ID²⁶⁵⁰
- Channel : PinholeSize²⁶⁵¹
- Channel : SamplesPerPixel²⁶⁵²
- Detector : Gain²⁶⁵³
- Detector : ID²⁶⁵⁴
- Detector : Type²⁶⁵⁵
- Dichroic : ID²⁶⁵⁶
- Dichroic : Model²⁶⁵⁷
- Filter : ID²⁶⁵⁸
- Filter : Model²⁶⁵⁹
- Image : AcquisitionDate²⁶⁶⁰
- Image : Description²⁶⁶¹
- Image : ID²⁶⁶²
- Image : InstrumentRef²⁶⁶³
- Image : Name²⁶⁶⁴
- Instrument : ID²⁶⁶⁵

²⁶⁴⁷<http://www.openmicroscopy.org/site/support/ome-model/>

²⁶⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

²⁶⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

²⁶⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁶⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PinholeSize

²⁶⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁶⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Gain

²⁶⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²⁶⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²⁶⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dichroic_ID

²⁶⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁶⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_ID

²⁶⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁶⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁶⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²⁶⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁶⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²⁶⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁶⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

- Laser : ID²⁶⁶⁶
- Laser : LaserMedium²⁶⁶⁷
- Laser : Model²⁶⁶⁸
- Laser : Type²⁶⁶⁹
- Laser : Wavelength²⁶⁷⁰
- Objective : Correction²⁶⁷¹
- Objective : ID²⁶⁷²
- Objective : Immersion²⁶⁷³
- Objective : LensNA²⁶⁷⁴
- Objective : NominalMagnification²⁶⁷⁵
- Objective : WorkingDistance²⁶⁷⁶
- ObjectiveSettings : ID²⁶⁷⁷
- Pixels : BinDataBigEndian²⁶⁷⁸
- Pixels : DimensionOrder²⁶⁷⁹
- Pixels : ID²⁶⁸⁰
- Pixels : PhysicalSizeX²⁶⁸¹
- Pixels : PhysicalSizeY²⁶⁸²
- Pixels : PhysicalSizeZ²⁶⁸³
- Pixels : SizeC²⁶⁸⁴
- Pixels : SizeT²⁶⁸⁵
- Pixels : SizeX²⁶⁸⁶
- Pixels : SizeY²⁶⁸⁷
- Pixels : SizeZ²⁶⁸⁸
- Pixels : Type²⁶⁸⁹
- Plane : TheC²⁶⁹⁰
- Plane : TheT²⁶⁹¹

²⁶⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

²⁶⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_LaserMedium

²⁶⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁶⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Type

²⁶⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Wavelength

²⁶⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

²⁶⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²⁶⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

²⁶⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

²⁶⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

²⁶⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_WorkingDistance

²⁶⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

²⁶⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁶⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁶⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁶⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁶⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁶⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁶⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁶⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁶⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁶⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁶⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁶⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁶⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁶⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

- Plane : TheZ²⁶⁹²

Total supported: 45

Total unknown or missing: 428

19.2.78 NativeND2Reader

This page lists supported metadata fields for the Bio-Formats Nikon ND2 format reader.

These fields are from the [OME data model](#)²⁶⁹³. 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 473 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 ND2 format reader:

- Channel : AcquisitionMode²⁶⁹⁴
- Channel : Color²⁶⁹⁵
- Channel : EmissionWavelength²⁶⁹⁶
- Channel : ExcitationWavelength²⁶⁹⁷
- Channel : ID²⁶⁹⁸
- Channel : Name²⁶⁹⁹
- Channel : PinholeSize²⁷⁰⁰
- Channel : SamplesPerPixel²⁷⁰¹
- Detector : ID²⁷⁰²
- Detector : Model²⁷⁰³
- Detector : Type²⁷⁰⁴
- DetectorSettings : Binning²⁷⁰⁵
- DetectorSettings : Gain²⁷⁰⁶
- DetectorSettings : ID²⁷⁰⁷
- DetectorSettings : ReadOutRate²⁷⁰⁸
- DetectorSettings : Voltage²⁷⁰⁹

²⁶⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁶⁹³<http://www.openmicroscopy.org/site/support/ome-model/>

²⁶⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_AcquisitionMode

²⁶⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Color

²⁶⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

²⁶⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

²⁶⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁶⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²⁷⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PinholeSize

²⁷⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁷⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²⁷⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁷⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²⁷⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

²⁷⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

²⁷⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

²⁷⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ReadOutRate

²⁷⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Voltage

- Image : AcquisitionDate²⁷¹⁰
- Image : ID²⁷¹¹
- Image : InstrumentRef²⁷¹²
- Image : Name²⁷¹³
- ImagingEnvironment : Temperature²⁷¹⁴
- Instrument : ID²⁷¹⁵
- Objective : CalibratedMagnification²⁷¹⁶
- Objective : Correction²⁷¹⁷
- Objective : ID²⁷¹⁸
- Objective : Immersion²⁷¹⁹
- Objective : LensNA²⁷²⁰
- Objective : Model²⁷²¹
- ObjectiveSettings : ID²⁷²²
- ObjectiveSettings : RefractiveIndex²⁷²³
- Pixels : BinDataBigEndian²⁷²⁴
- Pixels : DimensionOrder²⁷²⁵
- Pixels : ID²⁷²⁶
- Pixels : PhysicalSizeX²⁷²⁷
- Pixels : PhysicalSizeY²⁷²⁸
- Pixels : PhysicalSizeZ²⁷²⁹
- Pixels : SizeC²⁷³⁰
- Pixels : SizeT²⁷³¹
- Pixels : SizeX²⁷³²
- Pixels : SizeY²⁷³³
- Pixels : SizeZ²⁷³⁴
- Pixels : Type²⁷³⁵

²⁷¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁷¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁷¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²⁷¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁷¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

²⁷¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²⁷¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification

²⁷¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

²⁷¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²⁷¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

²⁷²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

²⁷²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁷²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

²⁷²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

²⁷²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁷²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁷²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁷²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁷²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁷²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁷³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁷³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁷³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁷³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁷³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁷³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

- Plane : DeltaT²⁷³⁶
- Plane : ExposureTime²⁷³⁷
- Plane : PositionX²⁷³⁸
- Plane : PositionY²⁷³⁹
- Plane : PositionZ²⁷⁴⁰
- Plane : TheC²⁷⁴¹
- Plane : TheT²⁷⁴²
- Plane : TheZ²⁷⁴³

Total supported: 50

Total unknown or missing: 423

19.2.79 NRRDReader

This page lists supported metadata fields for the Bio-Formats NRRD format reader.

These fields are from the [OME data model](#)²⁷⁴⁴. 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 473 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 NRRD format reader:

- Channel : ID²⁷⁴⁵
- Channel : SamplesPerPixel²⁷⁴⁶
- Image : AcquisitionDate²⁷⁴⁷
- Image : ID²⁷⁴⁸
- Image : Name²⁷⁴⁹
- Pixels : BinDataBigEndian²⁷⁵⁰
- Pixels : DimensionOrder²⁷⁵¹
- Pixels : ID²⁷⁵²
- Pixels : PhysicalSizeX²⁷⁵³

²⁷³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

²⁷³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²⁷³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

²⁷³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

²⁷⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

²⁷⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁷⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁷⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁷⁴⁴<http://www.openmicroscopy.org/site/support/ome-model/>

²⁷⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁷⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁷⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁷⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁷⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁷⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁷⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁷⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁷⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

- Pixels : PhysicalSizeY²⁷⁵⁴
- Pixels : PhysicalSizeZ²⁷⁵⁵
- Pixels : SizeC²⁷⁵⁶
- Pixels : SizeT²⁷⁵⁷
- Pixels : SizeX²⁷⁵⁸
- Pixels : SizeY²⁷⁵⁹
- Pixels : SizeZ²⁷⁶⁰
- Pixels : Type²⁷⁶¹
- Plane : TheC²⁷⁶²
- Plane : TheT²⁷⁶³
- Plane : TheZ²⁷⁶⁴

Total supported: 20

Total unknown or missing: 453

19.2.80 APLReader

This page lists supported metadata fields for the Bio-Formats Olympus APL format reader.

These fields are from the [OME data model](#)²⁷⁶⁵. 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 473 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 Olympus APL format reader:

- Channel : ID²⁷⁶⁶
- Channel : SamplesPerPixel²⁷⁶⁷
- Image : AcquisitionDate²⁷⁶⁸
- Image : ID²⁷⁶⁹
- Image : Name²⁷⁷⁰
- Pixels : BinDataBigEndian²⁷⁷¹

²⁷⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁷⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁷⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁷⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁷⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁷⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁷⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁷⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁷⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁷⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁷⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁷⁶⁵<http://www.openmicroscopy.org/site/support/ome-model/>

²⁷⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁷⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁷⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁷⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁷⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁷⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

- Pixels : DimensionOrder²⁷⁷²
- Pixels : ID²⁷⁷³
- Pixels : PhysicalSizeX²⁷⁷⁴
- Pixels : PhysicalSizeY²⁷⁷⁵
- Pixels : SizeC²⁷⁷⁶
- Pixels : SizeT²⁷⁷⁷
- Pixels : SizeX²⁷⁷⁸
- Pixels : SizeY²⁷⁷⁹
- Pixels : SizeZ²⁷⁸⁰
- Pixels : Type²⁷⁸¹
- Plane : TheC²⁷⁸²
- Plane : TheT²⁷⁸³
- Plane : TheZ²⁷⁸⁴

Total supported: 19

Total unknown or missing: 454

19.2.81 FV1000Reader

This page lists supported metadata fields for the Bio-Formats Olympus FV1000 format reader.

These fields are from the [OME data model](#)²⁷⁸⁵. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 107 of them (22%).
- Of those, Bio-Formats fully or partially converts 107 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Olympus FV1000 format reader:

- Channel : EmissionWavelength²⁷⁸⁶
- Channel : ExcitationWavelength²⁷⁸⁷
- Channel : ID²⁷⁸⁸
- Channel : IlluminationType²⁷⁸⁹

²⁷⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁷⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁷⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁷⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁷⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁷⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁷⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁷⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁷⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁷⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁷⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁷⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁷⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁷⁸⁵<http://www.openmicroscopy.org/site/support/ome-model/>

²⁷⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

²⁷⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

²⁷⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁷⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_IlluminationType

- Channel : LightSourceSettingsID²⁷⁹⁰
- Channel : LightSourceSettingsWavelength²⁷⁹¹
- Channel : Name²⁷⁹²
- Channel : SamplesPerPixel²⁷⁹³
- Detector : Gain²⁷⁹⁴
- Detector : ID²⁷⁹⁵
- Detector : Type²⁷⁹⁶
- Detector : Voltage²⁷⁹⁷
- DetectorSettings : ID²⁷⁹⁸
- Dichroic : ID²⁷⁹⁹
- Dichroic : Model²⁸⁰⁰
- Ellipse : FontSize²⁸⁰¹
- Ellipse : ID²⁸⁰²
- Ellipse : RadiusX²⁸⁰³
- Ellipse : RadiusY²⁸⁰⁴
- Ellipse : StrokeWidth²⁸⁰⁵
- Ellipse : TheT²⁸⁰⁶
- Ellipse : TheZ²⁸⁰⁷
- Ellipse : Transform²⁸⁰⁸
- Ellipse : X²⁸⁰⁹
- Ellipse : Y²⁸¹⁰
- Filter : ID²⁸¹¹
- Filter : Model²⁸¹²
- Image : AcquisitionDate²⁸¹³
- Image : ID²⁸¹⁴
- Image : InstrumentRef²⁸¹⁵

²⁷⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_ID

²⁷⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSourceSettings_Wavelength

²⁷⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²⁷⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁷⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Gain

²⁷⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²⁷⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²⁷⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Voltage

²⁷⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

²⁷⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dichroic_ID

²⁸⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁸⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

²⁸⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²⁸⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusX

²⁸⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusY

²⁸⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

²⁸⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

²⁸⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

²⁸⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform

²⁸⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_X

²⁸¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_Y

²⁸¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_ID

²⁸¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁸¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁸¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁸¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

- Image : Name²⁸¹⁶
- Image : ROIRef²⁸¹⁷
- Instrument : ID²⁸¹⁸
- Laser : ID²⁸¹⁹
- Laser : LaserMedium²⁸²⁰
- Laser : Type²⁸²¹
- Laser : Wavelength²⁸²²
- LightPath : DichroicRef²⁸²³
- LightPath : EmissionFilterRef²⁸²⁴
- Line : FontSize²⁸²⁵
- Line : ID²⁸²⁶
- Line : StrokeWidth²⁸²⁷
- Line : TheT²⁸²⁸
- Line : TheZ²⁸²⁹
- Line : Transform²⁸³⁰
- Line : X1²⁸³¹
- Line : X2²⁸³²
- Line : Y1²⁸³³
- Line : Y2²⁸³⁴
- Objective : Correction²⁸³⁵
- Objective : ID²⁸³⁶
- Objective : Immersion²⁸³⁷
- Objective : LensNA²⁸³⁸
- Objective : Model²⁸³⁹
- Objective : NominalMagnification²⁸⁴⁰
- Objective : WorkingDistance²⁸⁴¹

²⁸¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁸¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

²⁸¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²⁸¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

²⁸²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_LaserMedium

²⁸²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Type

²⁸²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Wavelength

²⁸²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DichroicRef_ID

²⁸²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

²⁸²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

²⁸²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²⁸²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

²⁸²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

²⁸²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

²⁸³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform

²⁸³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X1

²⁸³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X2

²⁸³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y1

²⁸³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y2

²⁸³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

²⁸³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²⁸³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

²⁸³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

²⁸³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁸⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

²⁸⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_WorkingDistance

- ObjectiveSettings : ID²⁸⁴²
- Pixels : BinDataBigEndian²⁸⁴³
- Pixels : DimensionOrder²⁸⁴⁴
- Pixels : ID²⁸⁴⁵
- Pixels : PhysicalSizeX²⁸⁴⁶
- Pixels : PhysicalSizeY²⁸⁴⁷
- Pixels : PhysicalSizeZ²⁸⁴⁸
- Pixels : SizeC²⁸⁴⁹
- Pixels : SizeT²⁸⁵⁰
- Pixels : SizeX²⁸⁵¹
- Pixels : SizeY²⁸⁵²
- Pixels : SizeZ²⁸⁵³
- Pixels : TimeIncrement²⁸⁵⁴
- Pixels : Type²⁸⁵⁵
- Plane : TheC²⁸⁵⁶
- Plane : TheT²⁸⁵⁷
- Plane : TheZ²⁸⁵⁸
- Point : FontSize²⁸⁵⁹
- Point : ID²⁸⁶⁰
- Point : StrokeWidth²⁸⁶¹
- Point : TheT²⁸⁶²
- Point : TheZ²⁸⁶³
- Point : X²⁸⁶⁴
- Point : Y²⁸⁶⁵
- Polygon : FontSize²⁸⁶⁶
- Polygon : ID²⁸⁶⁷

²⁸⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

²⁸⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁸⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁸⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁸⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁸⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁸⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁸⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁸⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁸⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁸⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁸⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁸⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

²⁸⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁸⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁸⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁸⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁸⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

²⁸⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²⁸⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

²⁸⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

²⁸⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

²⁸⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Point_X

²⁸⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Point_Y

²⁸⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

²⁸⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

- Polygon : Points²⁸⁶⁸
- Polygon : StrokeWidth²⁸⁶⁹
- Polygon : TheT²⁸⁷⁰
- Polygon : TheZ²⁸⁷¹
- Polygon : Transform²⁸⁷²
- Polyline : FontSize²⁸⁷³
- Polyline : ID²⁸⁷⁴
- Polyline : Points²⁸⁷⁵
- Polyline : StrokeWidth²⁸⁷⁶
- Polyline : TheT²⁸⁷⁷
- Polyline : TheZ²⁸⁷⁸
- Polyline : Transform²⁸⁷⁹
- ROI : ID²⁸⁸⁰
- Rectangle : FontSize²⁸⁸¹
- Rectangle : Height²⁸⁸²
- Rectangle : ID²⁸⁸³
- Rectangle : StrokeWidth²⁸⁸⁴
- Rectangle : TheT²⁸⁸⁵
- Rectangle : TheZ²⁸⁸⁶
- Rectangle : Transform²⁸⁸⁷
- Rectangle : Width²⁸⁸⁸
- Rectangle : X²⁸⁸⁹
- Rectangle : Y²⁸⁹⁰
- TransmittanceRange : CutIn²⁸⁹¹
- TransmittanceRange : CutOut²⁸⁹²

Total supported: 107

Total unknown or missing: 366

²⁸⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polygon_Points

²⁸⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

²⁸⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

²⁸⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

²⁸⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform

²⁸⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

²⁸⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²⁸⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polyline_Points

²⁸⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

²⁸⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

²⁸⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

²⁸⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform

²⁸⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

²⁸⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

²⁸⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Height

²⁸⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

²⁸⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

²⁸⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheT

²⁸⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_TheZ

²⁸⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform

²⁸⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Width

²⁸⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_X

²⁸⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Y

²⁸⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutIn

²⁸⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutOut

19.2.82 FluoviewReader

This page lists supported metadata fields for the Bio-Formats Olympus Fluoview/ABD TIFF format reader.

These fields are from the [OME data model](#)²⁸⁹³. 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 473 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%).

Supported fields

These fields are fully supported by the Bio-Formats Olympus Fluoview/ABD TIFF format reader:

- Channel : ID²⁸⁹⁴
- Channel : Name²⁸⁹⁵
- Channel : SamplesPerPixel²⁸⁹⁶
- Detector : ID²⁸⁹⁷
- Detector : Manufacturer²⁸⁹⁸
- Detector : Model²⁸⁹⁹
- Detector : Type²⁹⁰⁰
- DetectorSettings : Gain²⁹⁰¹
- DetectorSettings : ID²⁹⁰²
- DetectorSettings : Offset²⁹⁰³
- DetectorSettings : ReadOutRate²⁹⁰⁴
- DetectorSettings : Voltage²⁹⁰⁵
- Image : AcquisitionDate²⁹⁰⁶
- Image : Description²⁹⁰⁷
- Image : ID²⁹⁰⁸
- Image : InstrumentRef²⁹⁰⁹
- Image : Name²⁹¹⁰
- ImagingEnvironment : Temperature²⁹¹¹

²⁸⁹³<http://www.openmicroscopy.org/site/support/ome-model/>

²⁸⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁸⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²⁸⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁸⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²⁸⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

²⁸⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²⁹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

²⁹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

²⁹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Offset

²⁹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ReadOutRate

²⁹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Voltage

²⁹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

²⁹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²⁹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

- Instrument : ID²⁹¹²
- Objective : CalibratedMagnification²⁹¹³
- Objective : Correction²⁹¹⁴
- Objective : ID²⁹¹⁵
- Objective : Immersion²⁹¹⁶
- Objective : LensNA²⁹¹⁷
- Objective : Model²⁹¹⁸
- ObjectiveSettings : ID²⁹¹⁹
- Pixels : BinDataBigEndian²⁹²⁰
- Pixels : DimensionOrder²⁹²¹
- Pixels : ID²⁹²²
- Pixels : PhysicalSizeX²⁹²³
- Pixels : PhysicalSizeY²⁹²⁴
- Pixels : PhysicalSizeZ²⁹²⁵
- Pixels : SizeC²⁹²⁶
- Pixels : SizeT²⁹²⁷
- Pixels : SizeX²⁹²⁸
- Pixels : SizeY²⁹²⁹
- Pixels : SizeZ²⁹³⁰
- Pixels : TimeIncrement²⁹³¹
- Pixels : Type²⁹³²
- Plane : DeltaT²⁹³³
- Plane : ExposureTime²⁹³⁴
- Plane : PositionX²⁹³⁵
- Plane : PositionY²⁹³⁶
- Plane : PositionZ²⁹³⁷

²⁹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²⁹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification

²⁹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

²⁹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²⁹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

²⁹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

²⁹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

²⁹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

²⁹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

²⁹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

²⁹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

²⁹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²⁹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

²⁹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

²⁹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

- Plane : TheC²⁹³⁸
- Plane : TheT²⁹³⁹
- Plane : TheZ²⁹⁴⁰

Total supported: 47

Total unknown or missing: 426

19.2.83 ScanReader

This page lists supported metadata fields for the Bio-Formats Olympus ScanR format reader.

These fields are from the [OME data model](#)²⁹⁴¹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 41 of them (8%).
- Of those, Bio-Formats fully or partially converts 41 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Olympus ScanR format reader:

- Channel : ID²⁹⁴²
- Channel : Name²⁹⁴³
- Channel : SamplesPerPixel²⁹⁴⁴
- Image : AcquisitionDate²⁹⁴⁵
- Image : ID²⁹⁴⁶
- Image : Name²⁹⁴⁷
- Pixels : BinDataBigEndian²⁹⁴⁸
- Pixels : DimensionOrder²⁹⁴⁹
- Pixels : ID²⁹⁵⁰
- Pixels : PhysicalSizeX²⁹⁵¹
- Pixels : PhysicalSizeY²⁹⁵²
- Pixels : SizeC²⁹⁵³
- Pixels : SizeT²⁹⁵⁴
- Pixels : SizeX²⁹⁵⁵

²⁹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁹⁴¹<http://www.openmicroscopy.org/site/support/ome-model/>

²⁹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²⁹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

²⁹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

²⁹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

²⁹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

²⁹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

²⁹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

²⁹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

²⁹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

- Pixels : SizeY²⁹⁵⁶
- Pixels : SizeZ²⁹⁵⁷
- Pixels : Type²⁹⁵⁸
- Plane : DeltaT²⁹⁵⁹
- Plane : ExposureTime²⁹⁶⁰
- Plane : PositionX²⁹⁶¹
- Plane : PositionY²⁹⁶²
- Plane : TheC²⁹⁶³
- Plane : TheT²⁹⁶⁴
- Plane : TheZ²⁹⁶⁵
- Plate : ColumnNamingConvention²⁹⁶⁶
- Plate : Columns²⁹⁶⁷
- Plate : ID²⁹⁶⁸
- Plate : Name²⁹⁶⁹
- Plate : RowNamingConvention²⁹⁷⁰
- Plate : Rows²⁹⁷¹
- PlateAcquisition : ID²⁹⁷²
- PlateAcquisition : MaximumFieldCount²⁹⁷³
- PlateAcquisition : WellSampleRef²⁹⁷⁴
- Well : Column²⁹⁷⁵
- Well : ID²⁹⁷⁶
- Well : Row²⁹⁷⁷
- WellSample : ID²⁹⁷⁸
- WellSample : ImageRef²⁹⁷⁹
- WellSample : Index²⁹⁸⁰
- WellSample : PositionX²⁹⁸¹

²⁹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

²⁹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

²⁹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

²⁹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

²⁹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

²⁹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

²⁹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

²⁹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

²⁹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

²⁹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

²⁹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ColumnNamingConvention

²⁹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Columns

²⁹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID

²⁹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Name

²⁹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_RowNamingConvention

²⁹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Rows

²⁹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_ID

²⁹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

²⁹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSampleRef_ID

²⁹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column

²⁹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID

²⁹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row

²⁹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

²⁹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

²⁹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

²⁹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionX

- WellSample : PositionY²⁹⁸²

Total supported: 41

Total unknown or missing: 432

19.2.84 SISReader

This page lists supported metadata fields for the Bio-Formats Olympus SIS TIFF format reader.

These fields are from the [OME data model](#)²⁹⁸³. 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 473 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 Olympus SIS TIFF format reader:

- Channel : ID²⁹⁸⁴
- Channel : Name²⁹⁸⁵
- Channel : SamplesPerPixel²⁹⁸⁶
- Detector : ID²⁹⁸⁷
- Detector : Model²⁹⁸⁸
- Detector : Type²⁹⁸⁹
- DetectorSettings : ID²⁹⁹⁰
- Image : AcquisitionDate²⁹⁹¹
- Image : ID²⁹⁹²
- Image : InstrumentRef²⁹⁹³
- Image : Name²⁹⁹⁴
- Instrument : ID²⁹⁹⁵
- Objective : Correction²⁹⁹⁶
- Objective : ID²⁹⁹⁷
- Objective : Immersion²⁹⁹⁸
- Objective : NominalMagnification²⁹⁹⁹

²⁹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_PositionY

²⁹⁸³<http://www.openmicroscopy.org/site/support/ome-model/>

²⁹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

²⁹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

²⁹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

²⁹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

²⁹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

²⁹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

²⁹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

²⁹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

²⁹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

²⁹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

²⁹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

²⁹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

²⁹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

²⁹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

²⁹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

²⁹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

- ObjectiveSettings : ID³⁰⁰⁰
- Pixels : BinDataBigEndian³⁰⁰¹
- Pixels : DimensionOrder³⁰⁰²
- Pixels : ID³⁰⁰³
- Pixels : PhysicalSizeX³⁰⁰⁴
- Pixels : PhysicalSizeY³⁰⁰⁵
- Pixels : SizeC³⁰⁰⁶
- Pixels : SizeT³⁰⁰⁷
- Pixels : SizeX³⁰⁰⁸
- Pixels : SizeY³⁰⁰⁹
- Pixels : SizeZ³⁰¹⁰
- Pixels : Type³⁰¹¹
- Plane : TheC³⁰¹²
- Plane : TheT³⁰¹³
- Plane : TheZ³⁰¹⁴

Total supported: 31

Total unknown or missing: 442

19.2.85 OMETiffReader

This page lists supported metadata fields for the Bio-Formats OME-TIFF format reader.

These fields are from the [OME data model](#)³⁰¹⁵. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats OME-TIFF format reader:

- Channel : ID³⁰¹⁶
- Channel : SamplesPerPixel³⁰¹⁷

³⁰⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

³⁰⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁰⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁰⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁰⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁰⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁰⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁰⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁰⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁰⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁰¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁰¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁰¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁰¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁰¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁰¹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

³⁰¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁰¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate³⁰¹⁸
- Image : ID³⁰¹⁹
- Image : Name³⁰²⁰
- Pixels : BinDataBigEndian³⁰²¹
- Pixels : DimensionOrder³⁰²²
- Pixels : ID³⁰²³
- Pixels : SizeC³⁰²⁴
- Pixels : SizeT³⁰²⁵
- Pixels : SizeX³⁰²⁶
- Pixels : SizeY³⁰²⁷
- Pixels : SizeZ³⁰²⁸
- Pixels : Type³⁰²⁹
- Plane : TheC³⁰³⁰
- Plane : TheT³⁰³¹
- Plane : TheZ³⁰³²

Total supported: 17

Total unknown or missing: 456

19.2.86 OMEXMLReader

This page lists supported metadata fields for the Bio-Formats OME-XML format reader.

These fields are from the [OME data model](#)³⁰³³. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats OME-XML format reader:

- Channel : ID³⁰³⁴
- Channel : SamplesPerPixel³⁰³⁵

³⁰¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁰¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁰²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁰²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁰²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁰²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁰²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁰²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁰²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁰²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁰²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁰²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁰³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁰³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁰³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁰³³<http://www.openmicroscopy.org/site/support/ome-model/>

³⁰³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁰³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate³⁰³⁶
- Image : ID³⁰³⁷
- Image : Name³⁰³⁸
- Pixels : BinDataBigEndian³⁰³⁹
- Pixels : DimensionOrder³⁰⁴⁰
- Pixels : ID³⁰⁴¹
- Pixels : SizeC³⁰⁴²
- Pixels : SizeT³⁰⁴³
- Pixels : SizeX³⁰⁴⁴
- Pixels : SizeY³⁰⁴⁵
- Pixels : SizeZ³⁰⁴⁶
- Pixels : Type³⁰⁴⁷
- Plane : TheC³⁰⁴⁸
- Plane : TheT³⁰⁴⁹
- Plane : TheZ³⁰⁵⁰

Total supported: 17

Total unknown or missing: 456

19.2.87 OxfordInstrumentsReader

This page lists supported metadata fields for the Bio-Formats Oxford Instruments format reader.

These fields are from the OME data model³⁰⁵¹. 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 473 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 Oxford Instruments format reader:

- Channel : ID³⁰⁵²
- Channel : SamplesPerPixel³⁰⁵³

³⁰³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁰³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁰³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁰³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁰⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁰⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁰⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁰⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁰⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁰⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁰⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁰⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁰⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁰⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁰⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁰⁵¹<http://www.openmicroscopy.org/site/support/ome-model/>

³⁰⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁰⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

- Image : AcquisitionDate³⁰⁵⁴
- Image : Description³⁰⁵⁵
- Image : ID³⁰⁵⁶
- Image : Name³⁰⁵⁷
- Pixels : BinDataBigEndian³⁰⁵⁸
- Pixels : DimensionOrder³⁰⁵⁹
- Pixels : ID³⁰⁶⁰
- Pixels : PhysicalSizeX³⁰⁶¹
- Pixels : PhysicalSizeY³⁰⁶²
- Pixels : SizeC³⁰⁶³
- Pixels : SizeT³⁰⁶⁴
- Pixels : SizeX³⁰⁶⁵
- Pixels : SizeY³⁰⁶⁶
- Pixels : SizeZ³⁰⁶⁷
- Pixels : Type³⁰⁶⁸
- Plane : TheC³⁰⁶⁹
- Plane : TheT³⁰⁷⁰
- Plane : TheZ³⁰⁷¹

Total supported: 20

Total unknown or missing: 453

19.2.88 PCXReader

This page lists supported metadata fields for the Bio-Formats PCX format reader.

These fields are from the OME data model³⁰⁷². 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

³⁰⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁰⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

³⁰⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁰⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁰⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁰⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁰⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁰⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁰⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁰⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁰⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁰⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁰⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁰⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁰⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁰⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁰⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁰⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁰⁷²<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats PCX format reader:

- Channel : ID³⁰⁷³
- Channel : SamplesPerPixel³⁰⁷⁴
- Image : AcquisitionDate³⁰⁷⁵
- Image : ID³⁰⁷⁶
- Image : Name³⁰⁷⁷
- Pixels : BinDataBigEndian³⁰⁷⁸
- Pixels : DimensionOrder³⁰⁷⁹
- Pixels : ID³⁰⁸⁰
- Pixels : SizeC³⁰⁸¹
- Pixels : SizeT³⁰⁸²
- Pixels : SizeX³⁰⁸³
- Pixels : SizeY³⁰⁸⁴
- Pixels : SizeZ³⁰⁸⁵
- Pixels : Type³⁰⁸⁶
- Plane : TheC³⁰⁸⁷
- Plane : TheT³⁰⁸⁸
- Plane : TheZ³⁰⁸⁹

Total supported: 17

Total unknown or missing: 456

19.2.89 PDSReader

This page lists supported metadata fields for the Bio-Formats Perkin Elmer Densitometer format reader.

These fields are from the OME data model³⁰⁹⁰. 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 473 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%).

³⁰⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁰⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁰⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁰⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁰⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁰⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁰⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁰⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁰⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁰⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁰⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁰⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁰⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁰⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁰⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁰⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁰⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁰⁹⁰<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Perkin Elmer Densitometer format reader:

- Channel : ID³⁰⁹¹
- Channel : SamplesPerPixel³⁰⁹²
- Image : AcquisitionDate³⁰⁹³
- Image : ID³⁰⁹⁴
- Image : Name³⁰⁹⁵
- Pixels : BinDataBigEndian³⁰⁹⁶
- Pixels : DimensionOrder³⁰⁹⁷
- Pixels : ID³⁰⁹⁸
- Pixels : PhysicalSizeX³⁰⁹⁹
- Pixels : PhysicalSizeY³¹⁰⁰
- Pixels : SizeC³¹⁰¹
- Pixels : SizeT³¹⁰²
- Pixels : SizeX³¹⁰³
- Pixels : SizeY³¹⁰⁴
- Pixels : SizeZ³¹⁰⁵
- Pixels : Type³¹⁰⁶
- Plane : PositionX³¹⁰⁷
- Plane : PositionY³¹⁰⁸
- Plane : TheC³¹⁰⁹
- Plane : TheT³¹¹⁰
- Plane : TheZ³¹¹¹

Total supported: 21

Total unknown or missing: 452

- ³⁰⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID
- ³⁰⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel
- ³⁰⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate
- ³⁰⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID
- ³⁰⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name
- ³⁰⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian
- ³⁰⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder
- ³⁰⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID
- ³⁰⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX
- ³¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY
- ³¹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC
- ³¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT
- ³¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX
- ³¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY
- ³¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ
- ³¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type
- ³¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX
- ³¹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY
- ³¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC
- ³¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT
- ³¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.90 OperettaReader

This page lists supported metadata fields for the Bio-Formats PerkinElmer Operetta format reader.

These fields are from the [OME data model](#)³¹¹². 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 41 of them (8%).
- Of those, Bio-Formats fully or partially converts 41 (100%).

Supported fields

These fields are fully supported by the Bio-Formats PerkinElmer Operetta format reader:

- Channel : ID³¹¹³
- Channel : Name³¹¹⁴
- Channel : SamplesPerPixel³¹¹⁵
- Experimenter : ID³¹¹⁶
- Experimenter : LastName³¹¹⁷
- Image : AcquisitionDate³¹¹⁸
- Image : ExperimenterRef³¹¹⁹
- Image : ID³¹²⁰
- Image : Name³¹²¹
- Pixels : BinDataBigEndian³¹²²
- Pixels : DimensionOrder³¹²³
- Pixels : ID³¹²⁴
- Pixels : PhysicalSizeX³¹²⁵
- Pixels : PhysicalSizeY³¹²⁶
- Pixels : SizeC³¹²⁷
- Pixels : SizeT³¹²⁸
- Pixels : SizeX³¹²⁹
- Pixels : SizeY³¹³⁰

³¹¹²<http://www.openmicroscopy.org/site/support/ome-model/>

³¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

³¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_ID

³¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_LastName

³¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID

³¹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³¹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³¹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³¹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³¹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³¹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³¹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³¹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³¹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³¹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ³¹³¹
- Pixels : Type³¹³²
- Plane : PositionX³¹³³
- Plane : PositionY³¹³⁴
- Plane : PositionZ³¹³⁵
- Plane : TheC³¹³⁶
- Plane : TheT³¹³⁷
- Plane : TheZ³¹³⁸
- Plate : Columns³¹³⁹
- Plate : Description³¹⁴⁰
- Plate : ExternalIdentifier³¹⁴¹
- Plate : ID³¹⁴²
- Plate : Name³¹⁴³
- Plate : Rows³¹⁴⁴
- PlateAcquisition : ID³¹⁴⁵
- PlateAcquisition : MaximumFieldCount³¹⁴⁶
- PlateAcquisition : WellSampleRef³¹⁴⁷
- Well : Column³¹⁴⁸
- Well : ID³¹⁴⁹
- Well : Row³¹⁵⁰
- WellSample : ID³¹⁵¹
- WellSample : ImageRef³¹⁵²
- WellSample : Index³¹⁵³

Total supported: 41

Total unknown or missing: 432

³¹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³¹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³¹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

³¹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

³¹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

³¹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³¹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³¹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³¹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Columns

³¹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Description

³¹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ExternalIdentifier

³¹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_ID

³¹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Name

³¹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Plate_Rows

³¹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_ID

³¹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#PlateAcquisition_MaximumFieldCount

³¹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSampleRef_ID

³¹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Column

³¹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_ID

³¹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#Well_Row

³¹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_ID

³¹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImageRef_ID

³¹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/SPW_xsd.html#WellSample_Index

19.2.91 PerkinElmerReader

This page lists supported metadata fields for the Bio-Formats PerkinElmer format reader.

These fields are from the [OME data model](#)³¹⁵⁴. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 28 of them (5%).
- Of those, Bio-Formats fully or partially converts 28 (100%).

Supported fields

These fields are fully supported by the Bio-Formats PerkinElmer format reader:

- Channel : EmissionWavelength³¹⁵⁵
- Channel : ExcitationWavelength³¹⁵⁶
- Channel : ID³¹⁵⁷
- Channel : SamplesPerPixel³¹⁵⁸
- Image : AcquisitionDate³¹⁵⁹
- Image : ID³¹⁶⁰
- Image : InstrumentRef³¹⁶¹
- Image : Name³¹⁶²
- Instrument : ID³¹⁶³
- Pixels : BinDataBigEndian³¹⁶⁴
- Pixels : DimensionOrder³¹⁶⁵
- Pixels : ID³¹⁶⁶
- Pixels : PhysicalSizeX³¹⁶⁷
- Pixels : PhysicalSizeY³¹⁶⁸
- Pixels : SizeC³¹⁶⁹
- Pixels : SizeT³¹⁷⁰
- Pixels : SizeX³¹⁷¹
- Pixels : SizeY³¹⁷²

³¹⁵⁴<http://www.openmicroscopy.org/site/support/ome-model/>

³¹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

³¹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

³¹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³¹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³¹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³¹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³¹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

³¹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³¹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

³¹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³¹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³¹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³¹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³¹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³¹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³¹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³¹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³¹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ³¹⁷³
- Pixels : Type³¹⁷⁴
- Plane : DeltaT³¹⁷⁵
- Plane : ExposureTime³¹⁷⁶
- Plane : PositionX³¹⁷⁷
- Plane : PositionY³¹⁷⁸
- Plane : PositionZ³¹⁷⁹
- Plane : TheC³¹⁸⁰
- Plane : TheT³¹⁸¹
- Plane : TheZ³¹⁸²

Total supported: 28

Total unknown or missing: 445

19.2.92 PGMReader

This page lists supported metadata fields for the Bio-Formats Portable Gray Map format reader.

These fields are from the [OME data model](#)³¹⁸³. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Portable Gray Map format reader:

- Channel : ID³¹⁸⁴
- Channel : SamplesPerPixel³¹⁸⁵
- Image : AcquisitionDate³¹⁸⁶
- Image : ID³¹⁸⁷
- Image : Name³¹⁸⁸
- Pixels : BinDataBigEndian³¹⁸⁹
- Pixels : DimensionOrder³¹⁹⁰

³¹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³¹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³¹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

³¹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

³¹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

³¹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

³¹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

³¹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³¹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³¹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³¹⁸³<http://www.openmicroscopy.org/site/support/ome-model/>

³¹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³¹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³¹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³¹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³¹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³¹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³¹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

- Pixels : ID³¹⁹¹
- Pixels : SizeC³¹⁹²
- Pixels : SizeT³¹⁹³
- Pixels : SizeX³¹⁹⁴
- Pixels : SizeY³¹⁹⁵
- Pixels : SizeZ³¹⁹⁶
- Pixels : Type³¹⁹⁷
- Plane : TheC³¹⁹⁸
- Plane : TheT³¹⁹⁹
- Plane : TheZ³²⁰⁰

Total supported: 17

Total unknown or missing: 456

19.2.93 PSDReader

This page lists supported metadata fields for the Bio-Formats Adobe Photoshop format reader.

These fields are from the [OME data model](#)³²⁰¹. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Adobe Photoshop format reader:

- Channel : ID³²⁰²
- Channel : SamplesPerPixel³²⁰³
- Image : AcquisitionDate³²⁰⁴
- Image : ID³²⁰⁵
- Image : Name³²⁰⁶
- Pixels : BinDataBigEndian³²⁰⁷
- Pixels : DimensionOrder³²⁰⁸

³¹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³¹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³¹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³¹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³¹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³¹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³¹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³¹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³¹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³²⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³²⁰¹<http://www.openmicroscopy.org/site/support/ome-model/>

³²⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³²⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³²⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³²⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³²⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³²⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³²⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

- Pixels : ID³²⁰⁹
- Pixels : SizeC³²¹⁰
- Pixels : SizeT³²¹¹
- Pixels : SizeX³²¹²
- Pixels : SizeY³²¹³
- Pixels : SizeZ³²¹⁴
- Pixels : Type³²¹⁵
- Plane : TheC³²¹⁶
- Plane : TheT³²¹⁷
- Plane : TheZ³²¹⁸

Total supported: 17

Total unknown or missing: 456

19.2.94 PhotoshopTiffReader

This page lists supported metadata fields for the Bio-Formats Adobe Photoshop TIFF format reader.

These fields are from the [OME data model](#)³²¹⁹. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Adobe Photoshop TIFF format reader:

- Channel : ID³²²⁰
- Channel : SamplesPerPixel³²²¹
- Image : AcquisitionDate³²²²
- Image : ID³²²³
- Image : Name³²²⁴
- Pixels : BinDataBigEndian³²²⁵
- Pixels : DimensionOrder³²²⁶

³²⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³²¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³²¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³²¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³²¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³²¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³²¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³²¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³²¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³²¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³²¹⁹<http://www.openmicroscopy.org/site/support/ome-model/>

³²²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³²²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³²²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³²²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³²²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³²²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³²²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

- Pixels : ID³²²⁷
- Pixels : SizeC³²²⁸
- Pixels : SizeT³²²⁹
- Pixels : SizeX³²³⁰
- Pixels : SizeY³²³¹
- Pixels : SizeZ³²³²
- Pixels : Type³²³³
- Plane : TheC³²³⁴
- Plane : TheT³²³⁵
- Plane : TheZ³²³⁶

Total supported: 17

Total unknown or missing: 456

19.2.95 PictReader

This page lists supported metadata fields for the Bio-Formats PICT format reader.

These fields are from the [OME data model](#)³²³⁷. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats PICT format reader:

- Channel : ID³²³⁸
- Channel : SamplesPerPixel³²³⁹
- Image : AcquisitionDate³²⁴⁰
- Image : ID³²⁴¹
- Image : Name³²⁴²
- Pixels : BinDataBigEndian³²⁴³
- Pixels : DimensionOrder³²⁴⁴

³²²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³²²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³²²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³²³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³²³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³²³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³²³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³²³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³²³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³²³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³²³⁷<http://www.openmicroscopy.org/site/support/ome-model/>

³²³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³²³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³²⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³²⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³²⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³²⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³²⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

- Pixels : ID³²⁴⁵
- Pixels : SizeC³²⁴⁶
- Pixels : SizeT³²⁴⁷
- Pixels : SizeX³²⁴⁸
- Pixels : SizeY³²⁴⁹
- Pixels : SizeZ³²⁵⁰
- Pixels : Type³²⁵¹
- Plane : TheC³²⁵²
- Plane : TheT³²⁵³
- Plane : TheZ³²⁵⁴

Total supported: 17

Total unknown or missing: 456

19.2.96 APNGReader

This page lists supported metadata fields for the Bio-Formats Animated PNG format reader.

These fields are from the [OME data model](#)³²⁵⁵. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Animated PNG format reader:

- Channel : ID³²⁵⁶
- Channel : SamplesPerPixel³²⁵⁷
- Image : AcquisitionDate³²⁵⁸
- Image : ID³²⁵⁹
- Image : Name³²⁶⁰
- Pixels : BinDataBigEndian³²⁶¹
- Pixels : DimensionOrder³²⁶²

³²⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³²⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³²⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³²⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³²⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³²⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³²⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³²⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³²⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³²⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³²⁵⁵<http://www.openmicroscopy.org/site/support/ome-model/>

³²⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³²⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³²⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³²⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³²⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³²⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³²⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

- Pixels : ID³²⁶³
- Pixels : SizeC³²⁶⁴
- Pixels : SizeT³²⁶⁵
- Pixels : SizeX³²⁶⁶
- Pixels : SizeY³²⁶⁷
- Pixels : SizeZ³²⁶⁸
- Pixels : Type³²⁶⁹
- Plane : TheC³²⁷⁰
- Plane : TheT³²⁷¹
- Plane : TheZ³²⁷²

Total supported: 17

Total unknown or missing: 456

19.2.97 PrairieReader

This page lists supported metadata fields for the Bio-Formats Prairie TIFF format reader.

These fields are from the [OME data model](#)³²⁷³. 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 473 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 Prairie TIFF format reader:

- Channel : ID³²⁷⁴
- Channel : Name³²⁷⁵
- Channel : SamplesPerPixel³²⁷⁶
- Detector : ID³²⁷⁷
- Detector : Type³²⁷⁸
- Detector : Zoom³²⁷⁹
- DetectorSettings : Gain³²⁸⁰

³²⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³²⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³²⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³²⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³²⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³²⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³²⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³²⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³²⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³²⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³²⁷³<http://www.openmicroscopy.org/site/support/ome-model/>

³²⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³²⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

³²⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³²⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

³²⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

³²⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Zoom

³²⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Gain

- DetectorSettings : ID³²⁸¹
- DetectorSettings : Offset³²⁸²
- Image : AcquisitionDate³²⁸³
- Image : ID³²⁸⁴
- Image : InstrumentRef³²⁸⁵
- Image : Name³²⁸⁶
- Instrument : ID³²⁸⁷
- Laser : ID³²⁸⁸
- Laser : Power³²⁸⁹
- Microscope : Model³²⁹⁰
- Objective : Correction³²⁹¹
- Objective : ID³²⁹²
- Objective : Immersion³²⁹³
- Objective : LensNA³²⁹⁴
- Objective : Manufacturer³²⁹⁵
- Objective : NominalMagnification³²⁹⁶
- ObjectiveSettings : ID³²⁹⁷
- Pixels : BinDataBigEndian³²⁹⁸
- Pixels : DimensionOrder³²⁹⁹
- Pixels : ID³³⁰⁰
- Pixels : PhysicalSizeX³³⁰¹
- Pixels : PhysicalSizeY³³⁰²
- Pixels : SizeC³³⁰³
- Pixels : SizeT³³⁰⁴
- Pixels : SizeX³³⁰⁵
- Pixels : SizeY³³⁰⁶

³²⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

³²⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Offset

³²⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³²⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³²⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

³²⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³²⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

³²⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

³²⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power

³²⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³²⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

³²⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

³²⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

³²⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

³²⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³²⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

³²⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

³²⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³²⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³³⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³³⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³³⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³³⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³³⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³³⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³³⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ³³⁰⁷
- Pixels : TimeIncrement³³⁰⁸
- Pixels : Type³³⁰⁹
- Plane : DeltaT³³¹⁰
- Plane : PositionX³³¹¹
- Plane : PositionY³³¹²
- Plane : PositionZ³³¹³
- Plane : TheC³³¹⁴
- Plane : TheT³³¹⁵
- Plane : TheZ³³¹⁶

Total supported: 43

Total unknown or missing: 430

19.2.98 QuesantReader

This page lists supported metadata fields for the Bio-Formats Quesant AFM format reader.

These fields are from the [OME data model](#)³³¹⁷. 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 473 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 Quesant AFM format reader:

- Channel : ID³³¹⁸
- Channel : SamplesPerPixel³³¹⁹
- Image : AcquisitionDate³³²⁰
- Image : Description³³²¹
- Image : ID³³²²
- Image : Name³³²³
- Pixels : BinDataBigEndian³³²⁴

³³⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³³⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

³³⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³³¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

³³¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

³³¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

³³¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

³³¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³³¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³³¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³³¹⁷<http://www.openmicroscopy.org/site/support/ome-model/>

³³¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³³¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³³²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³³²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

³³²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³³²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³³²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

- Pixels : DimensionOrder³³²⁵
- Pixels : ID³³²⁶
- Pixels : PhysicalSizeX³³²⁷
- Pixels : PhysicalSizeY³³²⁸
- Pixels : SizeC³³²⁹
- Pixels : SizeT³³³⁰
- Pixels : SizeX³³³¹
- Pixels : SizeY³³³²
- Pixels : SizeZ³³³³
- Pixels : Type³³³⁴
- Plane : TheC³³³⁵
- Plane : TheT³³³⁶
- Plane : TheZ³³³⁷

Total supported: 20

Total unknown or missing: 453

19.2.99 NativeQTReader

This page lists supported metadata fields for the Bio-Formats QuickTime format reader.

These fields are from the [OME data model](#)³³³⁸. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats QuickTime format reader:

- Channel : ID³³³⁹
- Channel : SamplesPerPixel³³⁴⁰
- Image : AcquisitionDate³³⁴¹
- Image : ID³³⁴²

³³²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³³²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³³²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³³²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³³²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³³³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³³³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³³³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³³³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³³³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³³³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³³³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³³³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³³³⁸<http://www.openmicroscopy.org/site/support/ome-model/>

³³³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³³⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³³⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³³⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

- Image : Name³³⁴³
- Pixels : BinDataBigEndian³³⁴⁴
- Pixels : DimensionOrder³³⁴⁵
- Pixels : ID³³⁴⁶
- Pixels : SizeC³³⁴⁷
- Pixels : SizeT³³⁴⁸
- Pixels : SizeX³³⁴⁹
- Pixels : SizeY³³⁵⁰
- Pixels : SizeZ³³⁵¹
- Pixels : Type³³⁵²
- Plane : TheC³³⁵³
- Plane : TheT³³⁵⁴
- Plane : TheZ³³⁵⁵

Total supported: 17

Total unknown or missing: 456

19.2.100 RHKReader

This page lists supported metadata fields for the Bio-Formats RHK Technologies format reader.

These fields are from the [OME data model](#)³³⁵⁶. 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 473 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 RHK Technologies format reader:

- Channel : ID³³⁵⁷
- Channel : SamplesPerPixel³³⁵⁸
- Image : AcquisitionDate³³⁵⁹
- Image : Description³³⁶⁰

³³⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³³⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³³⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³³⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³³⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³³⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³³⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³³⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³³⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³³⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³³⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³³⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³³⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³³⁵⁶<http://www.openmicroscopy.org/site/support/ome-model/>

³³⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³³⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³³⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³³⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

- Image : ID³³⁶¹
- Image : Name³³⁶²
- Pixels : BinDataBigEndian³³⁶³
- Pixels : DimensionOrder³³⁶⁴
- Pixels : ID³³⁶⁵
- Pixels : PhysicalSizeX³³⁶⁶
- Pixels : PhysicalSizeY³³⁶⁷
- Pixels : SizeC³³⁶⁸
- Pixels : SizeT³³⁶⁹
- Pixels : SizeX³³⁷⁰
- Pixels : SizeY³³⁷¹
- Pixels : SizeZ³³⁷²
- Pixels : Type³³⁷³
- Plane : TheC³³⁷⁴
- Plane : TheT³³⁷⁵
- Plane : TheZ³³⁷⁶

Total supported: 20

Total unknown or missing: 453

19.2.101 SBIGReader

This page lists supported metadata fields for the Bio-Formats SBIG format reader.

These fields are from the [OME data model](#)³³⁷⁷. 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 473 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 SBIG format reader:

- Channel : ID³³⁷⁸

³³⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³³⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³³⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³³⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³³⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³³⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³³⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³³⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³³⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³³⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³³⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³³⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³³⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³³⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³³⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³³⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³³⁷⁷<http://www.openmicroscopy.org/site/support/ome-model/>

³³⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

- Channel : SamplesPerPixel³³⁷⁹
- Image : AcquisitionDate³³⁸⁰
- Image : Description³³⁸¹
- Image : ID³³⁸²
- Image : Name³³⁸³
- Pixels : BinDataBigEndian³³⁸⁴
- Pixels : DimensionOrder³³⁸⁵
- Pixels : ID³³⁸⁶
- Pixels : PhysicalSizeX³³⁸⁷
- Pixels : PhysicalSizeY³³⁸⁸
- Pixels : SizeC³³⁸⁹
- Pixels : SizeT³³⁹⁰
- Pixels : SizeX³³⁹¹
- Pixels : SizeY³³⁹²
- Pixels : SizeZ³³⁹³
- Pixels : Type³³⁹⁴
- Plane : TheC³³⁹⁵
- Plane : TheT³³⁹⁶
- Plane : TheZ³³⁹⁷

Total supported: 20

Total unknown or missing: 453

19.2.102 SeikoReader

This page lists supported metadata fields for the Bio-Formats Seiko format reader.

These fields are from the [OME data model](#)³³⁹⁸. 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 473 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%).

³³⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³³⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³³⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

³³⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³³⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³³⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³³⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³³⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³³⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³³⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³³⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³³⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³³⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³³⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³³⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³³⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³³⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³³⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³³⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³³⁹⁸<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Seiko format reader:

- Channel : ID³³⁹⁹
- Channel : SamplesPerPixel³⁴⁰⁰
- Image : AcquisitionDate³⁴⁰¹
- Image : Description³⁴⁰²
- Image : ID³⁴⁰³
- Image : Name³⁴⁰⁴
- Pixels : BinDataBigEndian³⁴⁰⁵
- Pixels : DimensionOrder³⁴⁰⁶
- Pixels : ID³⁴⁰⁷
- Pixels : PhysicalSizeX³⁴⁰⁸
- Pixels : PhysicalSizeY³⁴⁰⁹
- Pixels : SizeC³⁴¹⁰
- Pixels : SizeT³⁴¹¹
- Pixels : SizeX³⁴¹²
- Pixels : SizeY³⁴¹³
- Pixels : SizeZ³⁴¹⁴
- Pixels : Type³⁴¹⁵
- Plane : TheC³⁴¹⁶
- Plane : TheT³⁴¹⁷
- Plane : TheZ³⁴¹⁸

Total supported: 20

Total unknown or missing: 453

19.2.103 PCIReader

This page lists supported metadata fields for the Bio-Formats Compix Simple-PCI format reader.

- ³³⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID
- ³⁴⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel
- ³⁴⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate
- ³⁴⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description
- ³⁴⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID
- ³⁴⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name
- ³⁴⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian
- ³⁴⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder
- ³⁴⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID
- ³⁴⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX
- ³⁴⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY
- ³⁴¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC
- ³⁴¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT
- ³⁴¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX
- ³⁴¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY
- ³⁴¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ
- ³⁴¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type
- ³⁴¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC
- ³⁴¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT
- ³⁴¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

These fields are from the [OME data model](#)³⁴¹⁹. 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 473 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 Compix Simple-PCI format reader:

- Channel : ID³⁴²⁰
- Channel : SamplesPerPixel³⁴²¹
- Detector : ID³⁴²²
- Detector : Type³⁴²³
- DetectorSettings : Binning³⁴²⁴
- DetectorSettings : ID³⁴²⁵
- Image : AcquisitionDate³⁴²⁶
- Image : ID³⁴²⁷
- Image : InstrumentRef³⁴²⁸
- Image : Name³⁴²⁹
- Instrument : ID³⁴³⁰
- Pixels : BinDataBigEndian³⁴³¹
- Pixels : DimensionOrder³⁴³²
- Pixels : ID³⁴³³
- Pixels : PhysicalSizeX³⁴³⁴
- Pixels : PhysicalSizeY³⁴³⁵
- Pixels : SizeC³⁴³⁶
- Pixels : SizeT³⁴³⁷
- Pixels : SizeX³⁴³⁸
- Pixels : SizeY³⁴³⁹

³⁴¹⁹<http://www.openmicroscopy.org/site/support/ome-model/>

³⁴²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁴²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁴²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

³⁴²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

³⁴²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

³⁴²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

³⁴²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁴²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁴²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

³⁴²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁴³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

³⁴³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁴³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁴³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁴³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁴³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁴³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁴³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁴³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁴³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ³⁴⁴⁰
- Pixels : TimeIncrement³⁴⁴¹
- Pixels : Type³⁴⁴²
- Plane : DeltaT³⁴⁴³
- Plane : TheC³⁴⁴⁴
- Plane : TheT³⁴⁴⁵
- Plane : TheZ³⁴⁴⁶

Total supported: 27

Total unknown or missing: 446

19.2.104 SimplePCITiffReader

This page lists supported metadata fields for the Bio-Formats SimplePCI TIFF format reader.

These fields are from the [OME data model](#)³⁴⁴⁷. 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 473 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 SimplePCI TIFF format reader:

- Channel : ID³⁴⁴⁸
- Channel : SamplesPerPixel³⁴⁴⁹
- Detector : ID³⁴⁵⁰
- Detector : Model³⁴⁵¹
- Detector : Type³⁴⁵²
- DetectorSettings : Binning³⁴⁵³
- DetectorSettings : ID³⁴⁵⁴
- Image : AcquisitionDate³⁴⁵⁵
- Image : Description³⁴⁵⁶
- Image : ID³⁴⁵⁷

³⁴⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁴⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

³⁴⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁴⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

³⁴⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁴⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁴⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁴⁴⁷<http://www.openmicroscopy.org/site/support/ome-model/>

³⁴⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁴⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁴⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

³⁴⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁴⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

³⁴⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

³⁴⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

³⁴⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁴⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

³⁴⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

- Image : InstrumentRef³⁴⁵⁸
- Image : Name³⁴⁵⁹
- Instrument : ID³⁴⁶⁰
- Objective : ID³⁴⁶¹
- Objective : Immersion³⁴⁶²
- Objective : NominalMagnification³⁴⁶³
- Pixels : BinDataBigEndian³⁴⁶⁴
- Pixels : DimensionOrder³⁴⁶⁵
- Pixels : ID³⁴⁶⁶
- Pixels : PhysicalSizeX³⁴⁶⁷
- Pixels : PhysicalSizeY³⁴⁶⁸
- Pixels : SizeC³⁴⁶⁹
- Pixels : SizeT³⁴⁷⁰
- Pixels : SizeX³⁴⁷¹
- Pixels : SizeY³⁴⁷²
- Pixels : SizeZ³⁴⁷³
- Pixels : Type³⁴⁷⁴
- Plane : ExposureTime³⁴⁷⁵
- Plane : TheC³⁴⁷⁶
- Plane : TheT³⁴⁷⁷
- Plane : TheZ³⁴⁷⁸

Total supported: 31

Total unknown or missing: 442

19.2.105 SMCameraReader

This page lists supported metadata fields for the Bio-Formats SM Camera format reader.

These fields are from the [OME data model](#)³⁴⁷⁹. 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.

³⁴⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

³⁴⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁴⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

³⁴⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

³⁴⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

³⁴⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

³⁴⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁴⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁴⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁴⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁴⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁴⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁴⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁴⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁴⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁴⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁴⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁴⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

³⁴⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁴⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁴⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁴⁷⁹<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats SM Camera format reader:

- Channel : ID³⁴⁸⁰
- Channel : SamplesPerPixel³⁴⁸¹
- Image : AcquisitionDate³⁴⁸²
- Image : ID³⁴⁸³
- Image : Name³⁴⁸⁴
- Pixels : BinDataBigEndian³⁴⁸⁵
- Pixels : DimensionOrder³⁴⁸⁶
- Pixels : ID³⁴⁸⁷
- Pixels : SizeC³⁴⁸⁸
- Pixels : SizeT³⁴⁸⁹
- Pixels : SizeX³⁴⁹⁰
- Pixels : SizeY³⁴⁹¹
- Pixels : SizeZ³⁴⁹²
- Pixels : Type³⁴⁹³
- Plane : TheC³⁴⁹⁴
- Plane : TheT³⁴⁹⁵
- Plane : TheZ³⁴⁹⁶

Total supported: 17

Total unknown or missing: 456

19.2.106 SpiderReader

This page lists supported metadata fields for the Bio-Formats SPIDER format reader.

These fields are from the [OME data model](#)³⁴⁹⁷. 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.

³⁴⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁴⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁴⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁴⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁴⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁴⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁴⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁴⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁴⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁴⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁴⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁴⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁴⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁴⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁴⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁴⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁴⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁴⁹⁷<http://www.openmicroscopy.org/site/support/ome-model/>

Of the 473 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 SPIDER format reader:

- Channel : ID³⁴⁹⁸
- Channel : SamplesPerPixel³⁴⁹⁹
- Image : AcquisitionDate³⁵⁰⁰
- Image : ID³⁵⁰¹
- Image : Name³⁵⁰²
- Pixels : BinDataBigEndian³⁵⁰³
- Pixels : DimensionOrder³⁵⁰⁴
- Pixels : ID³⁵⁰⁵
- Pixels : PhysicalSizeX³⁵⁰⁶
- Pixels : PhysicalSizeY³⁵⁰⁷
- Pixels : SizeC³⁵⁰⁸
- Pixels : SizeT³⁵⁰⁹
- Pixels : SizeX³⁵¹⁰
- Pixels : SizeY³⁵¹¹
- Pixels : SizeZ³⁵¹²
- Pixels : Type³⁵¹³
- Plane : TheC³⁵¹⁴
- Plane : TheT³⁵¹⁵
- Plane : TheZ³⁵¹⁶

Total supported: 19

Total unknown or missing: 454

³⁴⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁴⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁵⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁵⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁵⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁵⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁵⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁵⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁵⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁵⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁵⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁵¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁵¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁵¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁵¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁵¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁵¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁵¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.107 TargaReader

This page lists supported metadata fields for the Bio-Formats Truevision Targa format reader.

These fields are from the [OME data model](#)³⁵¹⁷. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 18 of them (3%).
- Of those, Bio-Formats fully or partially converts 18 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Truevision Targa format reader:

- Channel : ID³⁵¹⁸
- Channel : SamplesPerPixel³⁵¹⁹
- Image : AcquisitionDate³⁵²⁰
- Image : Description³⁵²¹
- Image : ID³⁵²²
- Image : Name³⁵²³
- Pixels : BinDataBigEndian³⁵²⁴
- Pixels : DimensionOrder³⁵²⁵
- Pixels : ID³⁵²⁶
- Pixels : SizeC³⁵²⁷
- Pixels : SizeT³⁵²⁸
- Pixels : SizeX³⁵²⁹
- Pixels : SizeY³⁵³⁰
- Pixels : SizeZ³⁵³¹
- Pixels : Type³⁵³²
- Plane : TheC³⁵³³
- Plane : TheT³⁵³⁴
- Plane : TheZ³⁵³⁵

³⁵¹⁷<http://www.openmicroscopy.org/site/support/ome-model/>

³⁵¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁵¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁵²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

³⁵²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁵²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁵²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁵²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁵²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁵²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁵²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁵²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁵³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁵³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁵³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁵³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁵³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁵³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

Total supported: 18

Total unknown or missing: 455

19.2.108 TextReader

This page lists supported metadata fields for the Bio-Formats Text format reader.

These fields are from the [OME data model](#)³⁵³⁶. 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 473 fields documented in the [metadata summary table](#):

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Text format reader:

- Channel : ID³⁵³⁷
- Channel : SamplesPerPixel³⁵³⁸
- Image : AcquisitionDate³⁵³⁹
- Image : ID³⁵⁴⁰
- Image : Name³⁵⁴¹
- Pixels : BinDataBigEndian³⁵⁴²
- Pixels : DimensionOrder³⁵⁴³
- Pixels : ID³⁵⁴⁴
- Pixels : SizeC³⁵⁴⁵
- Pixels : SizeT³⁵⁴⁶
- Pixels : SizeX³⁵⁴⁷
- Pixels : SizeY³⁵⁴⁸
- Pixels : SizeZ³⁵⁴⁹
- Pixels : Type³⁵⁵⁰
- Plane : TheC³⁵⁵¹
- Plane : TheT³⁵⁵²
- Plane : TheZ³⁵⁵³

³⁵³⁶<http://www.openmicroscopy.org/site/support/ome-model/>

³⁵³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁵³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁵⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁵⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁵⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁵⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁵⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁵⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁵⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁵⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁵⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁵⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁵⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁵⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁵⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁵⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

Total supported: 17

Total unknown or missing: 456

19.2.109 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](#)³⁵⁵⁴. 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 473 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 Tagged Image File Format format reader:

- Channel : ID³⁵⁵⁵
- Channel : SamplesPerPixel³⁵⁵⁶
- Image : AcquisitionDate³⁵⁵⁷
- Image : Description³⁵⁵⁸
- Image : ID³⁵⁵⁹
- Image : Name³⁵⁶⁰
- Pixels : BinDataBigEndian³⁵⁶¹
- Pixels : DimensionOrder³⁵⁶²
- Pixels : ID³⁵⁶³
- Pixels : PhysicalSizeZ³⁵⁶⁴
- Pixels : SizeC³⁵⁶⁵
- Pixels : SizeT³⁵⁶⁶
- Pixels : SizeX³⁵⁶⁷
- Pixels : SizeY³⁵⁶⁸
- Pixels : SizeZ³⁵⁶⁹
- Pixels : TimeIncrement³⁵⁷⁰
- Pixels : Type³⁵⁷¹

³⁵⁵⁴<http://www.openmicroscopy.org/site/support/ome-model/>

³⁵⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁵⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁵⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

³⁵⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁵⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁵⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁵⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁵⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁵⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

³⁵⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁵⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁵⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁵⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁵⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁵⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

³⁵⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

- Plane : TheC³⁵⁷²
- Plane : TheT³⁵⁷³
- Plane : TheZ³⁵⁷⁴

Total supported: 20

Total unknown or missing: 453

19.2.110 TillVisionReader

This page lists supported metadata fields for the Bio-Formats TillVision 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 473 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 TillVision format reader:

- Channel : ID³⁵⁷⁶
- Channel : SamplesPerPixel³⁵⁷⁷
- Experiment : ID³⁵⁷⁸
- Experiment : Type³⁵⁷⁹
- Image : AcquisitionDate³⁵⁸⁰
- Image : ID³⁵⁸¹
- Image : Name³⁵⁸²
- Pixels : BinDataBigEndian³⁵⁸³
- Pixels : DimensionOrder³⁵⁸⁴
- Pixels : ID³⁵⁸⁵
- Pixels : SizeC³⁵⁸⁶
- Pixels : SizeT³⁵⁸⁷
- Pixels : SizeX³⁵⁸⁸
- Pixels : SizeY³⁵⁸⁹

³⁵⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁵⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁵⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁵⁷⁵<http://www.openmicroscopy.org/site/support/ome-model/>

³⁵⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁵⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_ID

³⁵⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experiment_Type

³⁵⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁵⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁵⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁵⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁵⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁵⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁵⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁵⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁵⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁵⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

- Pixels : SizeZ³⁵⁹⁰
- Pixels : Type³⁵⁹¹
- Plane : ExposureTime³⁵⁹²
- Plane : TheC³⁵⁹³
- Plane : TheT³⁵⁹⁴
- Plane : TheZ³⁵⁹⁵

Total supported: 20

Total unknown or missing: 453

19.2.111 TopometrixReader

This page lists supported metadata fields for the Bio-Formats TopoMetrix format reader.

These fields are from the [OME data model](#)³⁵⁹⁶. 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 473 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 TopoMetrix format reader:

- Channel : ID³⁵⁹⁷
- Channel : SamplesPerPixel³⁵⁹⁸
- Image : AcquisitionDate³⁵⁹⁹
- Image : Description³⁶⁰⁰
- Image : ID³⁶⁰¹
- Image : Name³⁶⁰²
- Pixels : BinDataBigEndian³⁶⁰³
- Pixels : DimensionOrder³⁶⁰⁴
- Pixels : ID³⁶⁰⁵
- Pixels : PhysicalSizeX³⁶⁰⁶
- Pixels : PhysicalSizeY³⁶⁰⁷

³⁵⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁵⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁵⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

³⁵⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁵⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁵⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁵⁹⁶<http://www.openmicroscopy.org/site/support/ome-model/>

³⁵⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁵⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁵⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁶⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

³⁶⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁶⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁶⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁶⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁶⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁶⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁶⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

- Pixels : SizeC³⁶⁰⁸
- Pixels : SizeT³⁶⁰⁹
- Pixels : SizeX³⁶¹⁰
- Pixels : SizeY³⁶¹¹
- Pixels : SizeZ³⁶¹²
- Pixels : Type³⁶¹³
- Plane : TheC³⁶¹⁴
- Plane : TheT³⁶¹⁵
- Plane : TheZ³⁶¹⁶

Total supported: 20

Total unknown or missing: 453

19.2.112 TrestleReader

This page lists supported metadata fields for the Bio-Formats Trestle format reader.

These fields are from the [OME data model](#)³⁶¹⁷. 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 473 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 Trestle format reader:

- Channel : ID³⁶¹⁸
- Channel : SamplesPerPixel³⁶¹⁹
- Image : AcquisitionDate³⁶²⁰
- Image : ID³⁶²¹
- Image : Name³⁶²²
- Image : ROIRef³⁶²³
- Mask : Height³⁶²⁴
- Mask : ID³⁶²⁵

³⁶⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁶⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁶¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁶¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁶¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁶¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁶¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁶¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁶¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁶¹⁷<http://www.openmicroscopy.org/site/support/ome-model/>

³⁶¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁶¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁶²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁶²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁶²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁶²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

³⁶²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_Height

³⁶²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

- Mask : Width³⁶²⁶
- Mask : X³⁶²⁷
- Mask : Y³⁶²⁸
- Pixels : BinDataBigEndian³⁶²⁹
- Pixels : DimensionOrder³⁶³⁰
- Pixels : ID³⁶³¹
- Pixels : SizeC³⁶³²
- Pixels : SizeT³⁶³³
- Pixels : SizeX³⁶³⁴
- Pixels : SizeY³⁶³⁵
- Pixels : SizeZ³⁶³⁶
- Pixels : Type³⁶³⁷
- Plane : TheC³⁶³⁸
- Plane : TheT³⁶³⁹
- Plane : TheZ³⁶⁴⁰
- ROI : ID³⁶⁴¹

Total supported: 24

Total unknown or missing: 449

19.2.113 UBMReader

This page lists supported metadata fields for the Bio-Formats UBM format reader.

These fields are from the [OME data model](#)³⁶⁴². 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats UBM format reader:

- Channel : ID³⁶⁴³

³⁶²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_Width

³⁶²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_X

³⁶²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Mask_Y

³⁶²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁶³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁶³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁶³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁶³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁶³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁶³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁶³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁶³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁶³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁶³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁶⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁶⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

³⁶⁴²<http://www.openmicroscopy.org/site/support/ome-model/>

³⁶⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

- Channel : SamplesPerPixel³⁶⁴⁴
- Image : AcquisitionDate³⁶⁴⁵
- Image : ID³⁶⁴⁶
- Image : Name³⁶⁴⁷
- Pixels : BinDataBigEndian³⁶⁴⁸
- Pixels : DimensionOrder³⁶⁴⁹
- Pixels : ID³⁶⁵⁰
- Pixels : SizeC³⁶⁵¹
- Pixels : SizeT³⁶⁵²
- Pixels : SizeX³⁶⁵³
- Pixels : SizeY³⁶⁵⁴
- Pixels : SizeZ³⁶⁵⁵
- Pixels : Type³⁶⁵⁶
- Plane : TheC³⁶⁵⁷
- Plane : TheT³⁶⁵⁸
- Plane : TheZ³⁶⁵⁹

Total supported: 17

Total unknown or missing: 456

19.2.114 UnisokuReader

This page lists supported metadata fields for the Bio-Formats Unisoku STM format reader.

These fields are from the [OME data model](#)³⁶⁶⁰. 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 473 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 Unisoku STM format reader:

- Channel : ID³⁶⁶¹

³⁶⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁶⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁶⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁶⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁶⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁶⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁶⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁶⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁶⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁶⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁶⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁶⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁶⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁶⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁶⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁶⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁶⁶⁰<http://www.openmicroscopy.org/site/support/ome-model/>

³⁶⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

- Channel : SamplesPerPixel³⁶⁶²
- Image : AcquisitionDate³⁶⁶³
- Image : Description³⁶⁶⁴
- Image : ID³⁶⁶⁵
- Image : Name³⁶⁶⁶
- Pixels : BinDataBigEndian³⁶⁶⁷
- Pixels : DimensionOrder³⁶⁶⁸
- Pixels : ID³⁶⁶⁹
- Pixels : PhysicalSizeX³⁶⁷⁰
- Pixels : PhysicalSizeY³⁶⁷¹
- Pixels : SizeC³⁶⁷²
- Pixels : SizeT³⁶⁷³
- Pixels : SizeX³⁶⁷⁴
- Pixels : SizeY³⁶⁷⁵
- Pixels : SizeZ³⁶⁷⁶
- Pixels : Type³⁶⁷⁷
- Plane : TheC³⁶⁷⁸
- Plane : TheT³⁶⁷⁹
- Plane : TheZ³⁶⁸⁰

Total supported: 20

Total unknown or missing: 453

19.2.115 VarianFDFReader

This page lists supported metadata fields for the Bio-Formats Varian FDF format reader.

These fields are from the [OME data model](#)³⁶⁸¹. 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 473 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%).

³⁶⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁶⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁶⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

³⁶⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁶⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁶⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁶⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁶⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁶⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁶⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁶⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁶⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁶⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁶⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁶⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁶⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁶⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁶⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁶⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁶⁸¹<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats Varian FDF format reader:

- Channel : ID³⁶⁸²
- Channel : SamplesPerPixel³⁶⁸³
- Image : AcquisitionDate³⁶⁸⁴
- Image : ID³⁶⁸⁵
- Image : Name³⁶⁸⁶
- Pixels : BinDataBigEndian³⁶⁸⁷
- Pixels : DimensionOrder³⁶⁸⁸
- Pixels : ID³⁶⁸⁹
- Pixels : PhysicalSizeX³⁶⁹⁰
- Pixels : PhysicalSizeY³⁶⁹¹
- Pixels : PhysicalSizeZ³⁶⁹²
- Pixels : SizeC³⁶⁹³
- Pixels : SizeT³⁶⁹⁴
- Pixels : SizeX³⁶⁹⁵
- Pixels : SizeY³⁶⁹⁶
- Pixels : SizeZ³⁶⁹⁷
- Pixels : Type³⁶⁹⁸
- Plane : PositionX³⁶⁹⁹
- Plane : PositionY³⁷⁰⁰
- Plane : PositionZ³⁷⁰¹
- Plane : TheC³⁷⁰²
- Plane : TheT³⁷⁰³
- Plane : TheZ³⁷⁰⁴

Total supported: 23

Total unknown or missing: 450

- ³⁶⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID
- ³⁶⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel
- ³⁶⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate
- ³⁶⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID
- ³⁶⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name
- ³⁶⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian
- ³⁶⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder
- ³⁶⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID
- ³⁶⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX
- ³⁶⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY
- ³⁶⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ
- ³⁶⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC
- ³⁶⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT
- ³⁶⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX
- ³⁶⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY
- ³⁶⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ
- ³⁶⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type
- ³⁶⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX
- ³⁷⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY
- ³⁷⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ
- ³⁷⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC
- ³⁷⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT
- ³⁷⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.116 VGSAMReader

This page lists supported metadata fields for the Bio-Formats VG SAM format reader.

These fields are from the [OME data model](#)³⁷⁰⁵. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats VG SAM format reader:

- Channel : ID³⁷⁰⁶
- Channel : SamplesPerPixel³⁷⁰⁷
- Image : AcquisitionDate³⁷⁰⁸
- Image : ID³⁷⁰⁹
- Image : Name³⁷¹⁰
- Pixels : BinDataBigEndian³⁷¹¹
- Pixels : DimensionOrder³⁷¹²
- Pixels : ID³⁷¹³
- Pixels : SizeC³⁷¹⁴
- Pixels : SizeT³⁷¹⁵
- Pixels : SizeX³⁷¹⁶
- Pixels : SizeY³⁷¹⁷
- Pixels : SizeZ³⁷¹⁸
- Pixels : Type³⁷¹⁹
- Plane : TheC³⁷²⁰
- Plane : TheT³⁷²¹
- Plane : TheZ³⁷²²

Total supported: 17

Total unknown or missing: 456

³⁷⁰⁵<http://www.openmicroscopy.org/site/support/ome-model/>

³⁷⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁷⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁷⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁷⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁷¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁷¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁷¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁷¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁷¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁷¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁷¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁷¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁷¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁷¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁷²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁷²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁷²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.117 VisitechReader

This page lists supported metadata fields for the Bio-Formats Visitech XYX format reader.

These fields are from the [OME data model](#)³⁷²³. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Visitech XYX format reader:

- Channel : ID³⁷²⁴
- Channel : SamplesPerPixel³⁷²⁵
- Image : AcquisitionDate³⁷²⁶
- Image : ID³⁷²⁷
- Image : Name³⁷²⁸
- Pixels : BinDataBigEndian³⁷²⁹
- Pixels : DimensionOrder³⁷³⁰
- Pixels : ID³⁷³¹
- Pixels : SizeC³⁷³²
- Pixels : SizeT³⁷³³
- Pixels : SizeX³⁷³⁴
- Pixels : SizeY³⁷³⁵
- Pixels : SizeZ³⁷³⁶
- Pixels : Type³⁷³⁷
- Plane : TheC³⁷³⁸
- Plane : TheT³⁷³⁹
- Plane : TheZ³⁷⁴⁰

Total supported: 17

Total unknown or missing: 456

³⁷²³<http://www.openmicroscopy.org/site/support/ome-model/>

³⁷²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁷²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁷²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁷²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁷²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁷²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁷³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁷³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁷³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁷³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁷³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁷³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁷³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁷³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁷³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁷³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁷⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.118 VelocityClippingReader

This page lists supported metadata fields for the Bio-Formats Velocity Library Clipping format reader.

These fields are from the [OME data model](#)³⁷⁴¹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Velocity Library Clipping format reader:

- Channel : ID³⁷⁴²
- Channel : SamplesPerPixel³⁷⁴³
- Image : AcquisitionDate³⁷⁴⁴
- Image : ID³⁷⁴⁵
- Image : Name³⁷⁴⁶
- Pixels : BinDataBigEndian³⁷⁴⁷
- Pixels : DimensionOrder³⁷⁴⁸
- Pixels : ID³⁷⁴⁹
- Pixels : SizeC³⁷⁵⁰
- Pixels : SizeT³⁷⁵¹
- Pixels : SizeX³⁷⁵²
- Pixels : SizeY³⁷⁵³
- Pixels : SizeZ³⁷⁵⁴
- Pixels : Type³⁷⁵⁵
- Plane : TheC³⁷⁵⁶
- Plane : TheT³⁷⁵⁷
- Plane : TheZ³⁷⁵⁸

Total supported: 17

Total unknown or missing: 456

³⁷⁴¹<http://www.openmicroscopy.org/site/support/ome-model/>

³⁷⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁷⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁷⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁷⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁷⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁷⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁷⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁷⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁷⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁷⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁷⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁷⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁷⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁷⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁷⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁷⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁷⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.119 VelocityReader

This page lists supported metadata fields for the Bio-Formats Velocity Library format reader.

These fields are from the [OME data model](#)³⁷⁵⁹. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 35 of them (7%).
- Of those, Bio-Formats fully or partially converts 35 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Velocity Library format reader:

- Channel : ID³⁷⁶⁰
- Channel : Name³⁷⁶¹
- Channel : SamplesPerPixel³⁷⁶²
- Detector : ID³⁷⁶³
- Detector : Model³⁷⁶⁴
- DetectorSettings : ID³⁷⁶⁵
- Image : AcquisitionDate³⁷⁶⁶
- Image : Description³⁷⁶⁷
- Image : ID³⁷⁶⁸
- Image : InstrumentRef³⁷⁶⁹
- Image : Name³⁷⁷⁰
- Instrument : ID³⁷⁷¹
- Objective : Correction³⁷⁷²
- Objective : ID³⁷⁷³
- Objective : Immersion³⁷⁷⁴
- Objective : NominalMagnification³⁷⁷⁵
- ObjectiveSettings : ID³⁷⁷⁶
- Pixels : BinDataBigEndian³⁷⁷⁷

³⁷⁵⁹<http://www.openmicroscopy.org/site/support/ome-model/>

³⁷⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁷⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

³⁷⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁷⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

³⁷⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁷⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

³⁷⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁷⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

³⁷⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁷⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

³⁷⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁷⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

³⁷⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

³⁷⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

³⁷⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

³⁷⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

³⁷⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

³⁷⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

- Pixels : DimensionOrder³⁷⁷⁸
- Pixels : ID³⁷⁷⁹
- Pixels : PhysicalSizeX³⁷⁸⁰
- Pixels : PhysicalSizeY³⁷⁸¹
- Pixels : PhysicalSizeZ³⁷⁸²
- Pixels : SizeC³⁷⁸³
- Pixels : SizeT³⁷⁸⁴
- Pixels : SizeX³⁷⁸⁵
- Pixels : SizeY³⁷⁸⁶
- Pixels : SizeZ³⁷⁸⁷
- Pixels : Type³⁷⁸⁸
- Plane : PositionX³⁷⁸⁹
- Plane : PositionY³⁷⁹⁰
- Plane : PositionZ³⁷⁹¹
- Plane : TheC³⁷⁹²
- Plane : TheT³⁷⁹³
- Plane : TheZ³⁷⁹⁴

Total supported: 35

Total unknown or missing: 438

19.2.120 WATOPReader

This page lists supported metadata fields for the Bio-Formats WA Technology TOP format reader.

These fields are from the [OME data model](#)³⁷⁹⁵. 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 473 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%).

³⁷⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁷⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁷⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁷⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁷⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

³⁷⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁷⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁷⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁷⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁷⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁷⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁷⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

³⁷⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

³⁷⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

³⁷⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁷⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁷⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

³⁷⁹⁵<http://www.openmicroscopy.org/site/support/ome-model/>

Supported fields

These fields are fully supported by the Bio-Formats WA Technology TOP format reader:

- Channel : ID³⁷⁹⁶
- Channel : SamplesPerPixel³⁷⁹⁷
- Image : AcquisitionDate³⁷⁹⁸
- Image : Description³⁷⁹⁹
- Image : ID³⁸⁰⁰
- Image : Name³⁸⁰¹
- Pixels : BinDataBigEndian³⁸⁰²
- Pixels : DimensionOrder³⁸⁰³
- Pixels : ID³⁸⁰⁴
- Pixels : PhysicalSizeX³⁸⁰⁵
- Pixels : PhysicalSizeY³⁸⁰⁶
- Pixels : SizeC³⁸⁰⁷
- Pixels : SizeT³⁸⁰⁸
- Pixels : SizeX³⁸⁰⁹
- Pixels : SizeY³⁸¹⁰
- Pixels : SizeZ³⁸¹¹
- Pixels : Type³⁸¹²
- Plane : TheC³⁸¹³
- Plane : TheT³⁸¹⁴
- Plane : TheZ³⁸¹⁵

Total supported: 20

Total unknown or missing: 453

19.2.121 BMPReader

This page lists supported metadata fields for the Bio-Formats Windows Bitmap format reader.

- ³⁷⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID
- ³⁷⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel
- ³⁷⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate
- ³⁷⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description
- ³⁸⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID
- ³⁸⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name
- ³⁸⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian
- ³⁸⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder
- ³⁸⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID
- ³⁸⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX
- ³⁸⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY
- ³⁸⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC
- ³⁸⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT
- ³⁸⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX
- ³⁸¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY
- ³⁸¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ
- ³⁸¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type
- ³⁸¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC
- ³⁸¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT
- ³⁸¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

These fields are from the [OME data model](#)³⁸¹⁶. 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 473 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 Windows Bitmap format reader:

- Channel : ID³⁸¹⁷
- Channel : SamplesPerPixel³⁸¹⁸
- Image : AcquisitionDate³⁸¹⁹
- Image : ID³⁸²⁰
- Image : Name³⁸²¹
- Pixels : BinDataBigEndian³⁸²²
- Pixels : DimensionOrder³⁸²³
- Pixels : ID³⁸²⁴
- Pixels : PhysicalSizeX³⁸²⁵
- Pixels : PhysicalSizeY³⁸²⁶
- Pixels : SizeC³⁸²⁷
- Pixels : SizeT³⁸²⁸
- Pixels : SizeX³⁸²⁹
- Pixels : SizeY³⁸³⁰
- Pixels : SizeZ³⁸³¹
- Pixels : Type³⁸³²
- Plane : TheC³⁸³³
- Plane : TheT³⁸³⁴
- Plane : TheZ³⁸³⁵

Total supported: 19

Total unknown or missing: 454

³⁸¹⁶<http://www.openmicroscopy.org/site/support/ome-model/>

³⁸¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁸¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁸¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁸²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁸²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁸²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁸²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁸²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁸²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁸²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁸²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁸²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁸²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁸³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁸³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁸³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁸³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁸³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁸³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.122 ZeissTIFFReader

This page lists supported metadata fields for the Bio-Formats Zeiss AxioVision TIFF format reader.

These fields are from the [OME data model](#)³⁸³⁶. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Zeiss AxioVision TIFF format reader:

- Channel : ID³⁸³⁷
- Channel : SamplesPerPixel³⁸³⁸
- Image : AcquisitionDate³⁸³⁹
- Image : ID³⁸⁴⁰
- Image : Name³⁸⁴¹
- Pixels : BinDataBigEndian³⁸⁴²
- Pixels : DimensionOrder³⁸⁴³
- Pixels : ID³⁸⁴⁴
- Pixels : SizeC³⁸⁴⁵
- Pixels : SizeT³⁸⁴⁶
- Pixels : SizeX³⁸⁴⁷
- Pixels : SizeY³⁸⁴⁸
- Pixels : SizeZ³⁸⁴⁹
- Pixels : Type³⁸⁵⁰
- Plane : TheC³⁸⁵¹
- Plane : TheT³⁸⁵²
- Plane : TheZ³⁸⁵³

Total supported: 17

Total unknown or missing: 456

³⁸³⁶<http://www.openmicroscopy.org/site/support/ome-model/>

³⁸³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁸³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁸³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁸⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁸⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁸⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁸⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁸⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁸⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁸⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁸⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁸⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁸⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁸⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁸⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁸⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁸⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.123 ZeissZVIReader

This page lists supported metadata fields for the Bio-Formats Zeiss Vision Image (ZVI) format reader.

These fields are from the [OME data model](#)³⁸⁵⁴. 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 17 of them (3%).
- Of those, Bio-Formats fully or partially converts 17 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Zeiss Vision Image (ZVI) format reader:

- Channel : ID³⁸⁵⁵
- Channel : SamplesPerPixel³⁸⁵⁶
- Image : AcquisitionDate³⁸⁵⁷
- Image : ID³⁸⁵⁸
- Image : Name³⁸⁵⁹
- Pixels : BinDataBigEndian³⁸⁶⁰
- Pixels : DimensionOrder³⁸⁶¹
- Pixels : ID³⁸⁶²
- Pixels : SizeC³⁸⁶³
- Pixels : SizeT³⁸⁶⁴
- Pixels : SizeX³⁸⁶⁵
- Pixels : SizeY³⁸⁶⁶
- Pixels : SizeZ³⁸⁶⁷
- Pixels : Type³⁸⁶⁸
- Plane : TheC³⁸⁶⁹
- Plane : TheT³⁸⁷⁰
- Plane : TheZ³⁸⁷¹

Total supported: 17

Total unknown or missing: 456

³⁸⁵⁴<http://www.openmicroscopy.org/site/support/ome-model/>

³⁸⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁸⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁸⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁸⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁸⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁸⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

³⁸⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁸⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁸⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁸⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁸⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁸⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁸⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁸⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁸⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

³⁸⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

³⁸⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

19.2.124 ZeissCZIReader

This page lists supported metadata fields for the Bio-Formats Zeiss CZI format reader.

These fields are from the [OME data model](#)³⁸⁷². 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 149 of them (31%).
- Of those, Bio-Formats fully or partially converts 149 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Zeiss CZI format reader:

- Arc : LotNumber³⁸⁷³
- Arc : Manufacturer³⁸⁷⁴
- Arc : Model³⁸⁷⁵
- Arc : Power³⁸⁷⁶
- Arc : SerialNumber³⁸⁷⁷
- Channel : Color³⁸⁷⁸
- Channel : EmissionWavelength³⁸⁷⁹
- Channel : ExcitationWavelength³⁸⁸⁰
- Channel : ID³⁸⁸¹
- Channel : Name³⁸⁸²
- Channel : PinholeSize³⁸⁸³
- Channel : SamplesPerPixel³⁸⁸⁴
- Detector : AmplificationGain³⁸⁸⁵
- Detector : Gain³⁸⁸⁶
- Detector : ID³⁸⁸⁷
- Detector : LotNumber³⁸⁸⁸
- Detector : Manufacturer³⁸⁸⁹
- Detector : Model³⁸⁹⁰

³⁸⁷²<http://www.openmicroscopy.org/site/support/ome-model/>

³⁸⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁸⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁸⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁸⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power

³⁸⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁸⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Color

³⁸⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_EmissionWavelength

³⁸⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ExcitationWavelength

³⁸⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

³⁸⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

³⁸⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PinholeSize

³⁸⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

³⁸⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_AmplificationGain

³⁸⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Gain

³⁸⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

³⁸⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁸⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁸⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

- Detector : Offset³⁸⁹¹
- Detector : SerialNumber³⁸⁹²
- Detector : Type³⁸⁹³
- Detector : Zoom³⁸⁹⁴
- DetectorSettings : Binning³⁸⁹⁵
- DetectorSettings : ID³⁸⁹⁶
- Dichroic : ID³⁸⁹⁷
- Dichroic : LotNumber³⁸⁹⁸
- Dichroic : Manufacturer³⁸⁹⁹
- Dichroic : Model³⁹⁰⁰
- Dichroic : SerialNumber³⁹⁰¹
- Ellipse : ID³⁹⁰²
- Ellipse : RadiusX³⁹⁰³
- Ellipse : RadiusY³⁹⁰⁴
- Ellipse : Text³⁹⁰⁵
- Ellipse : X³⁹⁰⁶
- Ellipse : Y³⁹⁰⁷
- Experimenter : Email³⁹⁰⁸
- Experimenter : FirstName³⁹⁰⁹
- Experimenter : ID³⁹¹⁰
- Experimenter : Institution³⁹¹¹
- Experimenter : LastName³⁹¹²
- Experimenter : MiddleName³⁹¹³
- Experimenter : UserName³⁹¹⁴
- Filament : LotNumber³⁹¹⁵
- Filament : Manufacturer³⁹¹⁶

³⁸⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Offset

³⁸⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁸⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

³⁸⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Zoom

³⁸⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

³⁸⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

³⁸⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dichroic_ID

³⁸⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁸⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

³⁹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusX

³⁹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusY

³⁹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

³⁹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_X

³⁹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_Y

³⁹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_Email

³⁹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_FirstName

³⁹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_ID

³⁹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_Institution

³⁹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_LastName

³⁹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_MiddleName

³⁹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_UserName

³⁹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

- Filament : Model³⁹¹⁷
- Filament : Power³⁹¹⁸
- Filament : SerialNumber³⁹¹⁹
- Filter : FilterWheel³⁹²⁰
- Filter : ID³⁹²¹
- Filter : LotNumber³⁹²²
- Filter : Manufacturer³⁹²³
- Filter : Model³⁹²⁴
- Filter : SerialNumber³⁹²⁵
- Filter : Type³⁹²⁶
- FilterSet : DichroicRef³⁹²⁷
- FilterSet : EmissionFilterRef³⁹²⁸
- FilterSet : ExcitationFilterRef³⁹²⁹
- FilterSet : ID³⁹³⁰
- FilterSet : LotNumber³⁹³¹
- FilterSet : Manufacturer³⁹³²
- FilterSet : Model³⁹³³
- FilterSet : SerialNumber³⁹³⁴
- Image : AcquisitionDate³⁹³⁵
- Image : ExperimenterRef³⁹³⁶
- Image : ID³⁹³⁷
- Image : Name³⁹³⁸
- Image : ROIRef³⁹³⁹
- ImagingEnvironment : AirPressure³⁹⁴⁰
- ImagingEnvironment : CO2Percent³⁹⁴¹
- ImagingEnvironment : Humidity³⁹⁴²

³⁹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power

³⁹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_FilterWheel

³⁹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_ID

³⁹²²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁹²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁹²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁹²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁹²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_Type

³⁹²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DichroicRef_ID

³⁹²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

³⁹²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

³⁹³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterSet_ID

³⁹³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁹³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁹³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁹³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁹³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

³⁹³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ExperimenterRef_ID

³⁹³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

³⁹³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

³⁹³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

³⁹⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_AirPressure

³⁹⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_CO2Percent

³⁹⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Humidity

- ImagingEnvironment : Temperature³⁹⁴³
- Instrument : ID³⁹⁴⁴
- Laser : LotNumber³⁹⁴⁵
- Laser : Manufacturer³⁹⁴⁶
- Laser : Model³⁹⁴⁷
- Laser : Power³⁹⁴⁸
- Laser : SerialNumber³⁹⁴⁹
- LightEmittingDiode : LotNumber³⁹⁵⁰
- LightEmittingDiode : Manufacturer³⁹⁵¹
- LightEmittingDiode : Model³⁹⁵²
- LightEmittingDiode : Power³⁹⁵³
- LightEmittingDiode : SerialNumber³⁹⁵⁴
- Line : ID³⁹⁵⁵
- Line : Text³⁹⁵⁶
- Line : X1³⁹⁵⁷
- Line : X2³⁹⁵⁸
- Line : Y1³⁹⁵⁹
- Line : Y2³⁹⁶⁰
- Microscope : LotNumber³⁹⁶¹
- Microscope : Manufacturer³⁹⁶²
- Microscope : Model³⁹⁶³
- Microscope : SerialNumber³⁹⁶⁴
- Microscope : Type³⁹⁶⁵
- Objective : CalibratedMagnification³⁹⁶⁶
- Objective : Correction³⁹⁶⁷
- Objective : ID³⁹⁶⁸

³⁹⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ImagingEnvironment_Temperature

³⁹⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

³⁹⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁹⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁹⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁹⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power

³⁹⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁹⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁹⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁹⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁹⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_Power

³⁹⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁹⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

³⁹⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

³⁹⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X1

³⁹⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X2

³⁹⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y1

³⁹⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y2

³⁹⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁹⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁹⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁹⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁹⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Microscope_Type

³⁹⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_CalibratedMagnification

³⁹⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

³⁹⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

- Objective : Immersion³⁹⁶⁹
- Objective : Iris³⁹⁷⁰
- Objective : LensNA³⁹⁷¹
- Objective : LotNumber³⁹⁷²
- Objective : Manufacturer³⁹⁷³
- Objective : Model³⁹⁷⁴
- Objective : NominalMagnification³⁹⁷⁵
- Objective : SerialNumber³⁹⁷⁶
- Objective : WorkingDistance³⁹⁷⁷
- ObjectiveSettings : CorrectionCollar³⁹⁷⁸
- ObjectiveSettings : ID³⁹⁷⁹
- ObjectiveSettings : Medium³⁹⁸⁰
- ObjectiveSettings : RefractiveIndex³⁹⁸¹
- Pixels : BinDataBigEndian³⁹⁸²
- Pixels : DimensionOrder³⁹⁸³
- Pixels : ID³⁹⁸⁴
- Pixels : PhysicalSizeX³⁹⁸⁵
- Pixels : PhysicalSizeY³⁹⁸⁶
- Pixels : PhysicalSizeZ³⁹⁸⁷
- Pixels : SizeC³⁹⁸⁸
- Pixels : SizeT³⁹⁸⁹
- Pixels : SizeX³⁹⁹⁰
- Pixels : SizeY³⁹⁹¹
- Pixels : SizeZ³⁹⁹²
- Pixels : Type³⁹⁹³
- Plane : DeltaT³⁹⁹⁴

³⁹⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

³⁹⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Iris

³⁹⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

³⁹⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_LotNumber

³⁹⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Manufacturer

³⁹⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

³⁹⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

³⁹⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_SerialNumber

³⁹⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_WorkingDistance

³⁹⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_CorrectionCollar

³⁹⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

³⁹⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_Medium

³⁹⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_RefractiveIndex

³⁹⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#BinaryFile_xsd.html#BinData_BigEndian

³⁹⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

³⁹⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

³⁹⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

³⁹⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

³⁹⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

³⁹⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

³⁹⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

³⁹⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

³⁹⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

³⁹⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

³⁹⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

³⁹⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

- Plane : ExposureTime³⁹⁹⁵
- Plane : PositionX³⁹⁹⁶
- Plane : PositionY³⁹⁹⁷
- Plane : PositionZ³⁹⁹⁸
- Plane : TheC³⁹⁹⁹
- Plane : TheT⁴⁰⁰⁰
- Plane : TheZ⁴⁰⁰¹
- Polygon : ID⁴⁰⁰²
- Polygon : Points⁴⁰⁰³
- Polygon : Text⁴⁰⁰⁴
- Polyline : ID⁴⁰⁰⁵
- Polyline : Points⁴⁰⁰⁶
- Polyline : Text⁴⁰⁰⁷
- ROI : Description⁴⁰⁰⁸
- ROI : ID⁴⁰⁰⁹
- ROI : Name⁴⁰¹⁰
- Rectangle : Height⁴⁰¹¹
- Rectangle : ID⁴⁰¹²
- Rectangle : Text⁴⁰¹³
- Rectangle : Width⁴⁰¹⁴
- Rectangle : X⁴⁰¹⁵
- Rectangle : Y⁴⁰¹⁶
- TransmittanceRange : CutIn⁴⁰¹⁷
- TransmittanceRange : CutInTolerance⁴⁰¹⁸
- TransmittanceRange : CutOut⁴⁰¹⁹
- TransmittanceRange : CutOutTolerance⁴⁰²⁰

³⁹⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_ExposureTime

³⁹⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

³⁹⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

³⁹⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

³⁹⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁴⁰⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁴⁰⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁴⁰⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

⁴⁰⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polygon_Points

⁴⁰⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

⁴⁰⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

⁴⁰⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polyline_Points

⁴⁰⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

⁴⁰⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_Description

⁴⁰⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

⁴⁰¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_Name

⁴⁰¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Height

⁴⁰¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

⁴⁰¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

⁴⁰¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Width

⁴⁰¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_X

⁴⁰¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Y

⁴⁰¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutIn

⁴⁰¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutInTolerance

⁴⁰¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutOut

⁴⁰²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutOutTolerance

- TransmittanceRange : Transmittance⁴⁰²¹

Total supported: 149

Total unknown or missing: 324

19.2.125 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](#)⁴⁰²². 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 473 fields documented in the *metadata summary table*:

- The file format itself supports 99 of them (20%).
- Of those, Bio-Formats fully or partially converts 99 (100%).

Supported fields

These fields are fully supported by the Bio-Formats Zeiss Laser-Scanning Microscopy format reader:

- Channel : Color⁴⁰²³
- Channel : ID⁴⁰²⁴
- Channel : Name⁴⁰²⁵
- Channel : PinholeSize⁴⁰²⁶
- Channel : SamplesPerPixel⁴⁰²⁷
- Detector : AmplificationGain⁴⁰²⁸
- Detector : Gain⁴⁰²⁹
- Detector : ID⁴⁰³⁰
- Detector : Type⁴⁰³¹
- Detector : Zoom⁴⁰³²
- DetectorSettings : Binning⁴⁰³³
- DetectorSettings : ID⁴⁰³⁴
- Dichroic : ID⁴⁰³⁵
- Dichroic : Model⁴⁰³⁶
- Ellipse : FontSize⁴⁰³⁷
- Ellipse : ID⁴⁰³⁸

⁴⁰²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_Transmittance

⁴⁰²²<http://www.openmicroscopy.org/site/support/ome-model/>

⁴⁰²³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Color

⁴⁰²⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_ID

⁴⁰²⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_Name

⁴⁰²⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_PinholeSize

⁴⁰²⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Channel_SamplesPerPixel

⁴⁰²⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_AmplificationGain

⁴⁰²⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Gain

⁴⁰³⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_ID

⁴⁰³¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Type

⁴⁰³²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Detector_Zoom

⁴⁰³³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_Binning

⁴⁰³⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DetectorSettings_ID

⁴⁰³⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Dichroic_ID

⁴⁰³⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁰³⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

⁴⁰³⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

- Ellipse : RadiusX⁴⁰³⁹
- Ellipse : RadiusY⁴⁰⁴⁰
- Ellipse : StrokeWidth⁴⁰⁴¹
- Ellipse : Transform⁴⁰⁴²
- Ellipse : X⁴⁰⁴³
- Ellipse : Y⁴⁰⁴⁴
- Experimenter : ID⁴⁰⁴⁵
- Experimenter : UserName⁴⁰⁴⁶
- Filter : ID⁴⁰⁴⁷
- Filter : Model⁴⁰⁴⁸
- Filter : Type⁴⁰⁴⁹
- Image : AcquisitionDate⁴⁰⁵⁰
- Image : Description⁴⁰⁵¹
- Image : ID⁴⁰⁵²
- Image : InstrumentRef⁴⁰⁵³
- Image : Name⁴⁰⁵⁴
- Image : ROIRef⁴⁰⁵⁵
- Instrument : ID⁴⁰⁵⁶
- Label : FontSize⁴⁰⁵⁷
- Label : ID⁴⁰⁵⁸
- Label : StrokeWidth⁴⁰⁵⁹
- Label : Text⁴⁰⁶⁰
- Label : X⁴⁰⁶¹
- Label : Y⁴⁰⁶²
- Laser : ID⁴⁰⁶³
- Laser : LaserMedium⁴⁰⁶⁴

⁴⁰³⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusX

⁴⁰⁴⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_RadiusY

⁴⁰⁴¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

⁴⁰⁴²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Transform

⁴⁰⁴³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_X

⁴⁰⁴⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Ellipse_Y

⁴⁰⁴⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_ID

⁴⁰⁴⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Experimenter_UserName

⁴⁰⁴⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_ID

⁴⁰⁴⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁰⁴⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Filter_Type

⁴⁰⁵⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_AcquisitionDate

⁴⁰⁵¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Description

⁴⁰⁵²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_ID

⁴⁰⁵³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#InstrumentRef_ID

⁴⁰⁵⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Image_Name

⁴⁰⁵⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROIRef_ID

⁴⁰⁵⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Instrument_ID

⁴⁰⁵⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

⁴⁰⁵⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

⁴⁰⁵⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

⁴⁰⁶⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_Text

⁴⁰⁶¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Label_X

⁴⁰⁶²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Label_Y

⁴⁰⁶³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#LightSource_ID

⁴⁰⁶⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_LaserMedium

- Laser : Model⁴⁰⁶⁵
- Laser : Type⁴⁰⁶⁶
- Laser : Wavelength⁴⁰⁶⁷
- LightPath : DichroicRef⁴⁰⁶⁸
- LightPath : EmissionFilterRef⁴⁰⁶⁹
- Line : FontSize⁴⁰⁷⁰
- Line : ID⁴⁰⁷¹
- Line : StrokeWidth⁴⁰⁷²
- Line : X1⁴⁰⁷³
- Line : X2⁴⁰⁷⁴
- Line : Y1⁴⁰⁷⁵
- Line : Y2⁴⁰⁷⁶
- Objective : Correction⁴⁰⁷⁷
- Objective : ID⁴⁰⁷⁸
- Objective : Immersion⁴⁰⁷⁹
- Objective : Iris⁴⁰⁸⁰
- Objective : LensNA⁴⁰⁸¹
- Objective : NominalMagnification⁴⁰⁸²
- ObjectiveSettings : ID⁴⁰⁸³
- Pixels : BinDataBigEndian⁴⁰⁸⁴
- Pixels : DimensionOrder⁴⁰⁸⁵
- Pixels : ID⁴⁰⁸⁶
- Pixels : PhysicalSizeX⁴⁰⁸⁷
- Pixels : PhysicalSizeY⁴⁰⁸⁸
- Pixels : PhysicalSizeZ⁴⁰⁸⁹
- Pixels : SizeC⁴⁰⁹⁰

⁴⁰⁶⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ManufacturerSpec_Model

⁴⁰⁶⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Type

⁴⁰⁶⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Laser_Wavelength

⁴⁰⁶⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#DichroicRef_ID

⁴⁰⁶⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#FilterRef_ID

⁴⁰⁷⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

⁴⁰⁷¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

⁴⁰⁷²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

⁴⁰⁷³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X1

⁴⁰⁷⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_X2

⁴⁰⁷⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y1

⁴⁰⁷⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Line_Y2

⁴⁰⁷⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Correction

⁴⁰⁷⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_ID

⁴⁰⁷⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Immersion

⁴⁰⁸⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_Iris

⁴⁰⁸¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_LensNA

⁴⁰⁸²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Objective_NominalMagnification

⁴⁰⁸³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#ObjectiveSettings_ID

⁴⁰⁸⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/BinaryFile_xsd.html#BinData_BigEndian

⁴⁰⁸⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_DimensionOrder

⁴⁰⁸⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_ID

⁴⁰⁸⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeX

⁴⁰⁸⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeY

⁴⁰⁸⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_PhysicalSizeZ

⁴⁰⁹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeC

- [Pixels : SizeT⁴⁰⁹¹](#)
- [Pixels : SizeX⁴⁰⁹²](#)
- [Pixels : SizeY⁴⁰⁹³](#)
- [Pixels : SizeZ⁴⁰⁹⁴](#)
- [Pixels : TimeIncrement⁴⁰⁹⁵](#)
- [Pixels : Type⁴⁰⁹⁶](#)
- [Plane : DeltaT⁴⁰⁹⁷](#)
- [Plane : PositionX⁴⁰⁹⁸](#)
- [Plane : PositionY⁴⁰⁹⁹](#)
- [Plane : PositionZ⁴¹⁰⁰](#)
- [Plane : TheC⁴¹⁰¹](#)
- [Plane : TheT⁴¹⁰²](#)
- [Plane : TheZ⁴¹⁰³](#)
- [Polygon : FontSize⁴¹⁰⁴](#)
- [Polygon : ID⁴¹⁰⁵](#)
- [Polygon : Points⁴¹⁰⁶](#)
- [Polygon : StrokeWidth⁴¹⁰⁷](#)
- [Polyline : FontSize⁴¹⁰⁸](#)
- [Polyline : ID⁴¹⁰⁹](#)
- [Polyline : Points⁴¹¹⁰](#)
- [Polyline : StrokeWidth⁴¹¹¹](#)
- [ROI : ID⁴¹¹²](#)
- [Rectangle : FontSize⁴¹¹³](#)
- [Rectangle : Height⁴¹¹⁴](#)
- [Rectangle : ID⁴¹¹⁵](#)
- [Rectangle : StrokeWidth⁴¹¹⁶](#)

⁴⁰⁹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeT

⁴⁰⁹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeX

⁴⁰⁹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeY

⁴⁰⁹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_SizeZ

⁴⁰⁹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_TimeIncrement

⁴⁰⁹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Pixels_Type

⁴⁰⁹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_DeltaT

⁴⁰⁹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionX

⁴⁰⁹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionY

⁴¹⁰⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_PositionZ

⁴¹⁰¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheC

⁴¹⁰²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheT

⁴¹⁰³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#Plane_TheZ

⁴¹⁰⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

⁴¹⁰⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

⁴¹⁰⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polygon_Points

⁴¹⁰⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

⁴¹⁰⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

⁴¹⁰⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

⁴¹¹⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Polyline_Points

⁴¹¹¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

⁴¹¹²http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#ROI_ID

⁴¹¹³http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_FontSize

⁴¹¹⁴http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Height

⁴¹¹⁵http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_ID

⁴¹¹⁶http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Shape_StrokeWidth

- Rectangle : Width⁴¹¹⁷
- Rectangle : X⁴¹¹⁸
- Rectangle : Y⁴¹¹⁹
- TransmittanceRange : CutIn⁴¹²⁰
- TransmittanceRange : CutOut⁴¹²¹

Total supported: 99

Total unknown or missing: 374

The version 4 releases use the *June 2012* release of the OME-Model⁴¹²²

⁴¹¹⁷http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Width

⁴¹¹⁸http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_X

⁴¹¹⁹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ROI_xsd.html#Rectangle_Y

⁴¹²⁰http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutIn

⁴¹²¹http://www.openmicroscopy.org/Schemas/Documentation/Generated/OME-2012-06/ome_xsd.html#TransmittanceRange_CutOut

⁴¹²²<http://www.openmicroscopy.org/site/support/ome-model/>

INDEX

Symbols

.1sc, 109
.2, 166
.2fl, 180
.3, 166
.4, 166
.acff, 185
.afm, 170
.aim, 100
.al3d, 101
.am, 102
.amiramesh, 102
.apl, 157
.arf, 107
.avi, 106
.bip, 141
.bmp, 126, 186
.c01, 113
.cfg, 170
.cr2, 113
.crw, 113
.cxd, 174
.czi, 189
.dat, 137, 160, 182
.dcm, 115
.dicom, 115
.dm2, 121
.dm3, 120
.dti, 183
.dv, 114
.eps, 117
.epsi, 117
.exp, 107
.fdf, 182
.fff, 127
.ffr, 180
.fits, 120
.flex, 118
.fli, 142
.frm, 134
.gel, 102
.gif, 122
.grey, 102
.hdr, 103, 154, 182
.hed, 129
.his, 123
.htd, 105
.html, 183
.hx, 102
.ics, 126
.ids, 126
.img, 103, 112, 119, 129, 137, 154
.ims, 110
.inr, 134
.ipl, 135
.ipm, 136
.ipw, 128
.jp2, 138
.jpg, 126, 137, 180
.jpk, 139
.jpx, 140
.l2d, 145
.labels, 102
.lei, 142
.lif, 143
.liff, 131
.lim, 146
.lsm, 189
.mdb, 189
.mea, 118
.mnc, 149
.mng, 151
.mod, 130
.mov, 171
.mrc, 152
.mrw, 150
.mtb, 157
.mvd2, 184
.naf, 123
.nd, 147
.nd2, 156
.ndpi, 124
.nef, 153
.nhdr, 157
.nrrd, 157
.obsep, 157
.oib, 158
.oif, 158
.ome, 162
.ome.tiff, 161
.par, 137
.pcx, 164
.pds, 164
.pgm, 166
.pic, 109
.pict, 168

.png, 104, 169
 .pnl, 105
 .pr3, 181
 .ps, 117
 .psd, 167
 .r3d, 114
 .raw, 109, 132, 157
 .res, 118
 .scn, 144, 145
 .sdt, 108
 .seq, 128
 .sld, 99, 180
 .sm2, 172
 .sm3, 172
 .spi, 176
 .stk, 147, 176
 .stp, 152
 .svs, 104
 .sxm, 145
 .tfr, 180
 .tga, 177
 .tif, 100, 107, 126, 132, 133, 142, 145, 148, 149, 153, 157, 159, 160, 166, 168, 170, 178, 180
 .tiff, 119, 147, 155, 161, 165, 168, 175, 187
 .tnb, 157
 .top, 163
 .txt, 126, 149, 157, 178
 .v, 116
 .vms, 125
 .vsi, 114
 .vws, 179
 .wat, 186
 .xdce, 133
 .xml, 109, 149, 160, 165, 170, 187
 .xqd, 174
 .xqf, 174
 .xv, 140
 .xys, 183
 .zfp, 180
 .zfr, 180
 .zvi, 188
 3i SlideBook, 99

A

Adobe Photoshop PSD, 167
 AIM, 100
 Alicona 3D, 101
 Amersham Biosciences Gel, 102
 Amira Mesh, 102
 Analyze 7.5, 103
 Andor Bio-Imaging Division (ABD) TIFF, 100
 Animated PNG, 104
 Aperio SVS TIFF, 104
 Applied Precision CellWorX, 105
 AVI (Audio Video Interleave), 106
 Axon Raw Format, 107

B

BD Pathway, 107
 Becker & Hickl SPCImage, 108
 bfconvert, 43

Bio-Rad Gel, 109
 Bio-Rad PIC, 109
 Bitplane Imaris, 110
 Bruker MRI, 111
 Burleigh, 112

C

Canon DNG, 113
 Cellomics, 113
 cellSens VSI, 114
 CLASSPATH, 58

D

DeltaVision, 114
 DICOM, 115

E

ECAT7, 116
 environment variable
 CLASSPATH, 58
 EPS (Encapsulated PostScript), 117
 Evotec/PerkinElmer Opera Flex, 118
 Export, 99

F

FEI, 119
 FEI TIFF, 119
 FITS (Flexible Image Transport System), 120
 formatlist, 43

G

Gatan Digital Micrograph, 120
 Gatan Digital Micrograph 2, 121
 GIF (Graphics Interchange Format), 122

H

Hamamatsu Aquacosmos NAF, 123
 Hamamatsu HIS, 123
 Hamamatsu ndpi, 124
 Hamamatsu VMS, 125
 Hitachi S-4800, 126

I

ICS (Image Cytometry Standard), 126
 ijview, 43
 Imacon, 127
 ImagePro Sequence, 128
 ImagePro Workspace, 128
 IMAGIC, 129
 IMOD, 130
 Improvion Openlab LIFF, 131
 Improvion Openlab Raw, 132
 Improvion TIFF, 132
 InCell 1000, 133
 InCell 3000, 134
 INR, 134
 IPLab, 135
 IPLab-Mac, 136

J

JEOL, 137

JPEG, 137
 JPEG 2000, 138
 JPK, 139
 JPX, 140

K

Khoros VIFF (Visualization Image File Format) Bitmap, 140
 Kodak BIP, 141

L

Lambert Instruments FLIM, 142
 Leica LAS AF LIF (Leica Image File Format), 143
 Leica LCS LEI, 142
 Leica SCN, 144
 LEO, 145
 Li-Cor L2D, 145
 LIM (Laboratory Imaging/Nikon), 146

M

Metadata, 98
 MetaMorph 7.5 TIFF, 147
 MetaMorph Stack (STK), 147
 MIAS (Maia Scientific), 148
 Micro-Manager, 149
 MINC MRI, 149
 Minolta MRW, 150
 MNG (Multiple-image Network Graphics), 151
 Molecular Imaging, 152
 MRC (Medical Research Council), 152

N

NEF (Nikon Electronic Format), 153
 NIFTI, 154
 Nikon Elements TIFF, 155
 Nikon EZ-C1 TIFF, 155
 Nikon NIS-Elements ND2, 156
 NRRD (Nearly Raw Raster Data), 157

O

Olympus CellIR/APL, 157
 Olympus FluoView FV1000, 158
 Olympus FluoView TIFF, 159
 Olympus ScanR, 160
 Olympus SIS TIFF, 161
 OME-TIFF, 161
 OME-XML, 162
 omeul, 43
 Openness, 99
 Oxford Instruments, 163

P

PCX (PC Paintbrush), 164
 Perkin Elmer Densitometer, 164
 PerkinElmer Operetta, 165
 PerkinElmer UltraView, 166
 PGM (Portable Gray Map), 166
 Photoshop TIFF, 168
 PICT (Macintosh Picture), 168
 Pixels, 98
 PNG (Portable Network Graphics), 169

Prairie Technologies TIFF, 170
 Presence, 99

Q

Quesant, 170
 QuickTime Movie, 171

R

Ratings legend and definitions, 98
 RHK, 172

S

SBIG, 173
 SCIFIO, 99
 Seiko, 174
 showinf, 43
 SimplePCI & HCImage, 174
 SimplePCI & HCImage TIFF, 175
 SM Camera, 176
 SPIDER, 176

T

Targa, 177
 Text, 178
 TIFF (Tagged Image File Format), 178
 tiffcomment, 43
 TillPhotonics TillVision, 179
 Topometrix, 180
 Trestle, 180

U

UBM, 181
 Unisoku, 182
 Utility, 99

V

Varian FDF, 182
 VG SAM, 183
 VisiTech XYX, 183
 Volocity, 184
 Volocity Library Clipping, 185

W

WA-TOP, 186
 Windows Bitmap, 186

X

xmllindent, 43
 xmllvalid, 43

Z

Zeiss AxioVision TIFF, 187
 Zeiss AxioVision ZVI (Zeiss Vision Image), 188
 Zeiss CZI, 189
 Zeiss LSM (Laser Scanning Microscope) 510/710, 189