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## Snowbound Software - TIFF Tags

This document describes the *tags* in the header and in Image File Directories (IFDs) used by TIFF (tagged image file format) files to declare and describe their content. Each TIFF file begins with a image file header which points to one or more image file directories which contain the image data and image information.

To call the TIFF tags in RasterMaster Java, use the [IMGLOW\\_get\\_tiff\\_tag\(\)](#) method. This function reads a TIFF tag from the file specified by `bm_name`. To set the TIFF tags in RasterMaster Java, use the [IMGLOW\\_set\\_tiff\\_tag\(\)](#) method. This method reads a TIFF tag from the file specified by `bm_name`. This function writes new tags as well as all current tags.

The TIFF file format was created by an independent group and was supported by Aldus. .TIF files can be any number of bits per pixel, planes and several compression algorithms. The byte order may be Intel or Motorola format. The bytes may also be filled from right to left or left to right. Compression may be uncompressed, pack bits, LZW, modified Huffman, CCITT G4, CCITT G3, CCITT G3-2D or JPEG. The CCITT G4 file format only saves to black and white.

If you have any questions about the TIFF file format and the tags described below, you may contact Snowbound Technical support on the web at <http://support.snowbound.com>

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### Sources for Tag Specifications

The following are descriptions of the types of the sources of the tags:

**TIFF Baseline:** The baseline set of tags were documented in TIFF 5.0 and carried over on pages 11-47 of the 1992 TIFF 6.0 specification.

**TIFF Extended:** The extended set includes some additional tags and added values for existing tags, as documented on pages 48-115 of the TIFF 6.0 specification.

**TIFF Private:** Originally, the term private meant just that. The TIFF 6.0 specification (page 8) states, "An organization might wish to store information meaningful to only that organization . . . . Tags numbered 32768 or higher, sometimes called private tags, are reserved for that purpose. Upon request, the TIFF administrator . . . will allocate and register one or more private tags for an organization . . . . You do not need to tell the TIFF administrator what you plan to use them for, but giving us this information may help other developers to avoid some duplication of effort." Over time, however, many private tags have become well established and well documented, e.g., tag 34675 for the ICC profile, dubbed `InterColorProfile` in the TIFF/EP standard. Thus, many members of the private tag class can be viewed as open extensions rather than as containers for secret information.

**TIFF/EP, TIFF/IT, and DNG:** A number of tags, some of which may once have been *private*, have been defined in TIFF/EP (ISO 12234-2, 2001), TIFF/IT (ISO 12639, 2004), and DNG\_1\_1, an Adobe-sponsored extension of the TIFF 6.0 specification.

**TIFF Private IFD:** The TIFF 6.0 specification (page 9) states, "If you need more than 10 tags, we suggest that you reserve a single private tag, define it as a LONG TIFF data type, and use its value as a pointer (offset) to a private IFD [image file directory] or other data structure of your

choosing. Within that IFD, you can use whatever tags you want, since no one else will know that it is an IFD unless you tell them.” As with private tags, we can understand private IFDs as an extension to TIFF, often very public and well documented.

The private IFD tags of greatest interest to the Library of Congress are those associated with the EXIF\_2\_2 specification, pertaining to image generation by digital still cameras. Exif is an abbreviation for EXchangeable Image File format, although Exif does not relate to TIFF as, say, JFIF relates to JPEG\_DCT. The Exif IFD is pointed to by the Private Exif IFD tag 34665. This and other Exif tags are listed in the numerical table below.

For the Exif specification and other related information, see Exif.org. There are actually three private IFDs specified by the Exif standard. The other two are the GPS IFD, for positioning information, and the Interoperability IFD, used to encode compability information. With numerical sequences of their own, the GPS and interoperability tags are not included in the table below.

**HD Photo tags:** Although not a true TIFF implementation, WMP\_1\_0 (originally called Windows Media Photo) is a 2006 specification with a container format that borrows heavily from TIFF and adds a few new tags of interest. Included in the table.

## Descriptions of Tags in Numerical Order

Table C.1: TIFF Tags in Numerical Order<sup>1</sup>

Code		Name	Description	Source of Tag
Dec	Hex			
254	00FE	NewSubfileType	<p>A general indication of the kind of data that is contained in this subfile. This field is made up of a set of 32 flag bits. Unused bits are expected to be 0. Bit 0 is the low-order bit.</p> <p>Currently defined values for the bit-map are:</p> <p>0 - Image is reduced of another TIFF image in this file</p> <p>1 - Image is a single page of a multi-page</p> <p>2 - Image is a transparency mask for another image in this file.</p> <p>The default is 0.</p>	Baseline
255	00FF	SubfileType	<p>A general indication of the kind of data that is contained in this subfile.</p> <p>Currently defined values are:</p> <p>A general indication of the kind of</p>	Baseline

Code		Name	Description	Source of Tag
Dec	Hex			
			<p>data that is contained in this subfile.</p> <p>Currently defined values are:</p> <p>1 = full resolution image data - ImageWidth, ImageLength, and StripOffsets are required fields.</p> <p>2 = reduced resolution image data - ImageWidth, ImageLength, and StripOffsets are required fields. It is further assumed that a reduced resolution image is a reduced version of the entire extent of the corresponding full resolution data.</p> <p>3 = single page of a multi-page image (see the PageNumber tag description).</p> <p>Continued use of this field is not recommended. Writers should instead use the new and more general NewSubfileType field.</p>	
256	0100	ImageWidth	The image's width, in pixels (X:horizontal). The number of columns in the image.	Baseline
257	0101	ImageLength	The image's length (height) in pixels (Y:vertical). The number of rows (sometimes described as "scan lines") in the image.	Baseline
258	0102	BitsPerSample	<p>Number of bits per sample. Note that this tag allows a different number of bits per sample for each sample corresponding to a pixel. For example, RGB color data could use a different number of bits per sample for each of the three color planes.</p> <p>The default is 1.</p>	Baseline
259	0103	Compression	<p>1 = No compression, but pack data into bytes as tightly as possible, with no unused bits except at the end of a row. The bytes are stored as an array of bytes, for BitsPerSample &lt;= 8, word if BitsPerSample &gt; 8 and &lt;= 16, and dword if BitsPerSample &gt; 16 and</p>	Baseline

Code		Name	Description	Source of Tag
Dec	Hex			
			<p>&lt;= 32. The byte ordering of data &gt;8 bits must be consistent with that specified in the TIFF file header (bytes 0 and 1). Rows are required to begin on byte boundaries.</p> <p>2 = CCITT Group 3 1-Dimensional Modified Huffman run length encoding. See ALGRTHMS.txt Bit-sPerSample must be 1, since this type of compression is defined only for bilevel images (like FAX images...)</p> <p>3 = Facsimile-compatible CCITT Group 3, exactly as specified in "Standardization of Group 3 facsimile apparatus for document transmission," Recommendation T.4, Volume VII, Fascicle VII.3, Terminal Equipment and Protocols for Telematic Services, The International Telegraph and Telephone Consultative Committee (CCITT), Geneva, 1985, pages 16 through 31. Each strip must begin on a byte boundary. (But recall that an image can be a single strip.) Rows that are not the first row of a strip are not required to begin on a byte boundary. The data is stored as bytes, not words - byte-reversal is not allowed. See the Group3Options field for Group 3 options such as 1D vs 2D coding.</p> <p>4 = Facsimile-compatible CCITT Group 4, exactly as specified in "Facsimile Coding Schemes and Coding Control Functions for Group 4 Facsimile Apparatus," Recommendation T.6, Volume VII, Fascicle VII.3, Terminal Equipment and Protocols for Telematic Services, The International Telegraph and Telephone Consultative Committee (CCITT),</p>	

Code		Name	Description	Source of Tag
Dec	Hex			
262	0106	PhotometricInterpretation	<p>Geneva, 1985, pages 40 through 48. Each strip must begin on a byte boundary. Rows that are not the first row of a strip are not required to begin on a byte boundary. The data is stored as bytes, not words. See the Group4Options field for Group 4 options.</p> <p>5 = LZW Compression, for gray-scale, mapped color, and full color images. See ALGRTHMS.txt</p> <p>32773 = PackBits compression, a simple byte oriented run length scheme for 1-bit images.</p> <p>Data compression only applies to raster image data, as pointed to by StripOffsets.</p> <p>The default value is 1.</p> <p>0 = For bilevel and grayscale images: 0 is imaged as white. 2**BitsPerSample-1 is imaged as black. If GrayResponseCurve exists, it overrides the PhotometricInterpretation value.</p> <p>1 = For bilevel and grayscale images: 0 is imaged as black. 2**BitsPerSample-1 is imaged as white. If GrayResponseCurveexists, it overrides the PhotometricInterpretation value.</p> <p>2 = RGB. In the RGB model, a color is described as a combination of the three primary colors of light (red, green, and blue) in particular concentrations. For each of the three samples, 0 represents minimum intensity, and 2**BitsPerSample - 1 represents maximum intensity. For PlanarConfiguration = 1, the samples are stored in the indicated order: first Red, hen Green, then Blue. For</p>	Baseline

Code		Name	Description	Source of Tag
Dec	Hex			
			<p>PlanarConfiguration = 2, the StripOffsets for the sample planes are stored in the indicated order: first the Red sample plane StripOffsets, then the Green plane StripOffsets, then the Blue plane StripOffsets.</p> <p>3 = "Palette color." In this mode, a color is described with a single sample. The sample is used as an index into ColorMap. The sample is used to index into each of the red, green and blue curve tables to retrieve an RGB triplet defining an actual color. When this PhotometricInterpretation value is used, the color response curves must also be supplied. SamplesPerPixel must be 1.</p> <p>4 = Transparency Mask. This means that the image is used to define an irregularly shaped region of another image in the same TIFF file. SamplesPerPixel and BitsPerSample must be 1. PackBits compression is recommended. The 1-bits define the interior of the region; the 0-bits define interior of the region; the 0-bits define the exterior of the region. The Transparency Mask must have the same ImageLength and ImageWidth as the main image.</p>	
263	0107	Thresholding	<p>1 = a bilevel "line art" scan. BitsPerSample must be 1.</p> <p>2 = a "dithered" scan, usually of continuous tone data such as photographs. BitsPerSample must be 1.</p> <p>3 = Error Diffused.</p>	Baseline
264	0108	CellWidth	The width of the dithering or halftoning matrix used to create a dithered or halftoned bilevel file.	Baseline
265	0109	CellLength	The length of the dithering or halftoning matrix used to create a dithered or halftoned bilevel file.	Baseline

Code Dec	Hex	Name	Description	Source of Tag
266	010A	FillOrder	The logical order of bits within a byte.	Baseline
269	010D	DocumentName	The name of the document from which this image was scanned.	Extended
270	010E	ImageDescription	A string that describes the subject of the image. For example, a user may wish to attach a comment such as "1988 company picnic" to an image.	Baseline
271	010F	Make	Manufacturer of the scanner, video digitizer. Mandatory for TIFF/EP.	Baseline
272	0110	Model	The model name/number of the scanner, video digitizer. This tag is intended for user information only so format is arbitrary. Mandatory for TIFF/EP.	Baseline
273	0111	StripOffsets	For each strip, the byte offset of that strip. The offset is specified with respect to the beginning of the TIFF file. Note that this implies that each strip has a location independent of the locations of other strips. This feature may be useful for editing applications. This field is the only way for a reader to find the image data, and hence must exist.	Baseline
274	0112	Orientation	The orientation of the image with respect to the rows and columns.  1 = The 0th row represents the visual top of the image, and the 0th column represents the visual left hand side.  2 = The 0th row represents the visual top of the image, and the 0th column represents the visual right hand side.  3 = The 0th row represents the visual bottom of the image, and the 0th column represents the visual right hand side.  4 = The 0th row represents the visual bottom of the image, and the 0th column represents the visual left hand side.	Baseline

Code		Name	Description	Source of Tag
Dec	Hex			
			<p>5 = The 0th row represents the visual left hand side of the image, and the 0th column represents the visual top.</p> <p>6 = The 0th row represents the visual right hand side of the image, and the 0th column represents the visual top.</p> <p>7 = The 0th row represents the visual right hand side of the image, and the 0th column represents the visual bottom.</p> <p>8 = The 0th row represents the visual left hand side of the image, and the 0th column represents the visual bottom.</p> <p>It is extremely costly for most readers to perform image rotation "on the fly", i.e., when importing and printing; and users of most desktop publishing applications do not expect a file imported by the application to be altered permanently in any way.</p> <p>The default value is 1.</p>	
277	0115	SamplesPerPixel	<p>The number of samples per pixel. SamplesPerPixel is 1 for bilevel, grayscale, and palette color images. SamplesPerPixel is 3 for RGB images.</p>	Baseline
278	0116	RowsPerStrip	<p>The number of rows per strip. The image data is organized into strips for fast access to individual rows when the data is compressed - though this field is valid even if the data is not compressed.</p> <p>The default is <math>2^{32} - 1</math>, which is effectively infinity. That is, the entire image is one strip. Recommended is a strip size of 8K.</p>	Baseline
279	0117	StripByteCounts	<p>For each strip, the number of bytes in that strip. The existence of this field greatly simplifies the chore of buffering compressed data, if the strip</p>	Baseline

Code Dec	Hex	Name	Description	Source of Tag
			size is reasonable.	
280	0118	MinSampleValue	The minimum component value used.	Baseline
281	0119	MaxSampleValue	The maximum component value used.	Baseline
282	011A	XResolution	The number of pixels per ResolutionUnit in the X direction, i.e., in the ImageWidth direction.	Baseline
283	011B	YResolution	The number of pixels per ResolutionUnit in the Y direction, i.e., in the ImageLength direction.	Baseline
			1 = The sample values for each pixel are stored contiguously, so that there is a single image plane. See PhotometricInterpretation to determine the order of the samples within the pixel data. So, for RGB data, the data is stored RGBRGBRGB...and so on.	
			2 = The samples are stored in separate "sample planes." The values in StripOffsets and StripByteCounts are then arranged as a 2-dimensional array, with SamplesPerPixel rows and StripsPerImage columns. (All of the columns for row 0 are stored first, followed by the columns of row 1, and so on.) PhotometricInterpretation describes the type of data that is stored in each sample plane. For example, RGB data is stored with the Red samples in one sample plane, the Green in another, and the Blue in another.	
284	011C	PlanarConfiguration	If SamplesPerPixel is 1, PlanarConfiguration is irrelevant, and should not be included.  The default is 1.	Baseline
285	011D	PageName	The name of the page from which this image was scanned.	Extended
286	011E	XPosition	The X offset of the left side of the image, with respect to the left side of the page, in ResolutionUnits.	Extended
287	011F	YPosition	The Y offset of the top of the image,	Extended

Code		Name	Description	Source of Tag
Dec	Hex			
			with respect to the top of the page, in ResolutionUnits. In the TIFF coordinate scheme, the positive Y direction is down, so that YPosition is always positive.	
288	0120	FreeOffsets	For each string of contiguous unused bytes in a TIFF file, the byte offset of the string.	Baseline
289	0121	FreeByteCounts	For each string of contiguous unused bytes in a TIFF file, the number of bytes in the string.	Baseline
			The precision of the information contained in the GrayResponseCurve.	
			1 = Number represents tenths of a unit.	
			2 = Number represents hundredths of a unit.	
290	0122	GrayResponseUnit	3 = Number represents thousandths of a unit.	Baseline
			4 = Number represents ten-thousandths of a unit.	
			5 = Number represents hundred-thousandths of a unit.	
			For historical reasons, the default is 2. However, for greater accuracy, 3 is recommended.	
291	0123	GrayResponseCurve	For grayscale data, the optical density of each possible pixel value.  The purpose of the gray response curve and the gray units is to provide more exact photometric interpretation information for gray scale image data, in terms of optical density.	Baseline
			Those options are for fax-images stored in TIFF format. This field is made up of a set of 32 flag bits.	
292	0124	Group3Options	Unused bits are expected to be 0. It is probably not safe to try to read the file if any bit of this field is set that you don't know the meaning of.	Extended

Code		Name	Description	Source of Tag
Dec	Hex			
			<p>Bit map:</p> <p>0 - 2-dimensional coding used.</p> <p>1 - Image is uncompressed</p> <p>2 - Fill bits have been added before EOL codes, so that EOL always ends on a byte boundary.</p>	
293	0125	Group4Options	<p>This field is made up of a set of 32 flag bits and is used for the images with fax group 4 compression. Unused bits are expected to be 0. It is probably not safe to try to read the file if any bit of this field is set that you don't know the meaning of. Gray scale and color coding schemes are under study, and will be added when finalized.</p> <p>For 2-D coding, each strip is encoded as if it were a separate image. In particular, each strip begins on a byte boundary; and the coding for the first row of a strip is encoded independently of the previous row, using horizontal codes, as if the previous row is entirely white. Each strip ends with the 24-bit end-of-facsimile block (EOFB).</p> <p>Bit map:</p> <p>0 - reserved (unused)</p> <p>1 - uncompressed mode is used</p> <p>2-31 - reserved</p>	Extended
296	0128	ResolutionUnit	<p>To be used with XResolution and YResolution.</p> <p>1 = No absolute unit of measurement. Used for images that may have a non-square aspect ratio, but no meaningful absolute dimensions. The drawback of ResolutionUnit=1 is that different applications will import the image at different sizes. Even if</p>	Baseline

Code Dec	Hex	Name	Description	Source of Tag
			<p>the decision is quite arbitrary, it might be better to use dots per inch or dots per centimeter, and pick XResolution and YResolution such that the aspect ratio is correct and the maximum dimension of the image is about four inches (the "four" is quite arbitrary.)</p> <p>2 = Inch.</p> <p>3 = Centimeter.</p> <p>The default is 2.</p>	
297	0129	PageNumber	This tag is used to specify page numbers of a multiple page (e.g. facsimile) document. Two word values are specified. The first value is the page number; the second value is the Extended total number of pages in the document. Note that pages need not appear in numerical order. The first page is 0 (zero).	
301	012D	TransferFunction	Describes a transfer function for the image in tabular style.	Extended
305	0131	Software	Name and release number of the software package that created the image. User information only.	Baseline
306	0132	DateTime	Date and time of image creation. Uses the format "YYYY:MM:DD HH:MM:SS", with hours on a 24-hour clock, and one space character between the date and the time. The length of the string, including the null, is 20 bytes.	Baseline
315	013B	Artist	Person who created the image. Copyright notice.	Baseline
316	013C	HostComputer	The computer and/or operating system in use at the time of image creation.	Baseline
			ENIAC.	
317	013D	Predictor	A mathematical operator that is applied to the image data before an encoding scheme is applied.	Extended
			To be used when Compression=5	

Code		Name	Description	Source of Tag
Dec	Hex			
			(LZW). 1 = No prediction scheme used before coding. 2 = Horizontal differencing. Gives TIFF color image readers a better idea of what kind of color image it is. There will be borderline cases. 1 = Continuous tone, natural image.	
318	013E	ColorImageType	2 = Synthetic image, using a greatly restricted range of colors.  Such images are produced by most color paint programs. See ColorList for a list of colors used in this image.  The default value is 1.	Extended
319	013F	ColorList	A list of colors that are used in this image. Use of this field is only practical for images containing a greatly restricted (usually less than or equal to 256) range of colors. ColorImageType should be 2. See ColorImageType.  The list is organized as an array of RGB triplets, with no pad. The RGB triplets are not guaranteed to be in any particular order. Note that the red, green, and blue components can either be a BYTE or a word in length. BYTE should be sufficient for most applications.	Extended
320	0140	ColorMap	This tag defines a Red-Green-Blue color map for palette color images. The palette color pixel value is used to index into all 3 subcurves. The subcurves are stored sequentially. The Red entries come first, followed by the Green entries, followed by the Blue entries. The width of each entry is 16 bits, as implied by the type of word. 0 represents the minimum intensity, and 65535 represents the maximum intensity.	Baseline

Code Dec	Hex	Name	Description	Source of Tag
			ColorMap must be included in all palette color images.	
321	0141	HalftoneHints	Conveys to the halftone function the range of gray levels within a colorimetrically-specified image that should retain tonal detail.	Extended
322	0142	TileWidth	The tile width in pixels. This is the number of columns in each tile.	Extended
323	0143	TileLength	The tile length (height) in pixels. This is the number of rows in each tile.	Extended
324	0144	TileOffsets	For each tile, the byte offset of that tile, as compressed and stored on disk.	Extended
325	0145	TileByteCounts	For each tile, the number of (compressed) bytes in that tile.	Extended
326	0146	BadFaxLines	Used in the TIFF-F standard, denotes the number of 'bad' scan lines encountered by the facsimile device.	Extended
327	0147	CleanFaxData	Used in the TIFF-F standard, indicates if 'bad' lines encountered during reception are stored in the data, or if 'bad' lines have been replaced by the receiver.	Extended
328	0148	ConsecutiveBadFaxLines	Used in the TIFF-F standard, denotes the maximum number of consecutive 'bad' scanlines received.	Extended
330	014A	SubIFDs	Offset to child IFDs.	Extended
332	014C	InkSet	The set of inks used in a separated (PhotometricInterpretation=5) image.	Extended
333	014D	InkNames	The name of each ink used in a separated image.	Extended
334	014E	NumberOfInks	The number of inks.	Extended
336	0150	DotRange	The component values that correspond to a 0% dot and 100% dot.	Extended
337	0151	TargetPrinter	A description of the printing environment for which this separation is intended.	Extended
338	0152	ExtraSamples	Description of extra components.	Baseline
339	0153	SampleFormat	Specifies how to interpret each data sample in a pixel.	Extended
340	0154	SMinSampleValue	Specifies the minimum sample value.	Extended
341	0155	SMaxSampleValue	Specifies the maximum sample	Extended

Code Dec	Hex	Name	Description	Source of Tag
			value.	
342	0156	TransferRange	Expands the range of the TransferFunction.	Extended
343	0157	ClipPath	Mirrors the essentials of PostScript's path creation functionality.	Extended
344	0158	XClipPathUnits	The number of units that span the width of the image, in terms of integer ClipPath coordinates.	Extended
345	0159	YClipPathUnits	The number of units that span the height of the image, in terms of integer ClipPath coordinates.	Extended
346	015A	Indexed	Aims to broaden the support for indexed images to include support for any color space.	Extended
347	015B	JPEGTables	JPEG quantization and/or Huffman tables.	Extended
351	015F	OPIProxy	OPI-related.	Extended
400	0190	GlobalParametersIFD	Used in the TIFF-FX standard to point to an IFD containing tags that are globally applicable to the complete TIFF file.	Extended
401	0191	ProfileType	Used in the TIFF-FX standard, denotes the type of data stored in this file or IFD.	Extended
402	0192	FaxProfile	Used in the TIFF-FX standard, denotes the 'profile' that applies to this file.	Extended
403	0193	CodingMethods	Used in the TIFF-FX standard, indicates which coding methods are used in the file.	Extended
404	0194	VersionYear	Used in the TIFF-FX standard, denotes the year of the standard specified by the FaxProfile field.	Extended
405	0195	ModeNumber	Used in the TIFF-FX standard, denotes the mode of the standard specified by the FaxProfile field.	Extended
433	01B1	Decode	Used in the TIFF-F and TIFF-FX standards, holds information about the ITULAB (PhotometricInterpretation = 10) encoding.	Extended
434	01B2	DefaultImageColor	Defined in the Mixed Raster Content part of RFC 2301, is the default color needed in areas where no image is	Extended

Code Dec	Hex	Name	Description	Source of Tag
			available.	
512	0200	JPEGProc	Old-style JPEG compression field. TechNote2 invalidates this part of the Extended specification.	
513	0201	JPEGInterchangeFormat	Old-style JPEG compression field. TechNote2 invalidates this part of the Extended specification.	
514	0202	JPEGInterchangeFormatLength	Old-style JPEG compression field. TechNote2 invalidates this part of the Extended specification.	
515	0203	JPEGRestartInterval	Old-style JPEG compression field. TechNote2 invalidates this part of the Extended specification.	
517	0205	JPEGLosslessPredictors	Old-style JPEG compression field. TechNote2 invalidates this part of the Extended specification.	
518	0206	JPEGPointTransforms	Old-style JPEG compression field. TechNote2 invalidates this part of the Extended specification.	
519	0207	JPEGQTables	Old-style JPEG compression field. TechNote2 invalidates this part of the Extended specification.	
520	0208	JPEGDCTables	Old-style JPEG compression field. TechNote2 invalidates this part of the Extended specification.	
521	0209	JPEGACTables	Old-style JPEG compression field. TechNote2 invalidates this part of the Extended specification.	
529	0211	YCbCrCoefficients	The transformation from RGB to YCbCr image data. Mandatory for TIFF/EP YCbCr images.	Extended
530	0212	YCbCrSubSampling	Specifies the subsampling factors used for the chrominance components of a YCbCr image.	Extended
531	0213	YCbCrPositioning	Specifies the positioning of subsampled chrominance components relative to luminance samples.	Extended
532	0214	ReferenceBlackWhite	Specifies a pair of headroom and foot-room image data values (codes) for each pixel component.	Extended
559	022F	StripRowCounts	Defined in the Mixed Raster Content part of RFC 2301, used to replace RowsPerStrip for IFDs with variable-	Extended

Code Dec	Hex	Name	Description	Source of Tag
			sized strips.	
700	02BC	XMP	XML packet containing XMP metadata	Extended
32781	800D	ImageID	OPI-related.	Extended
32932	80A4	Wang Annotation	Annotation data, as used in 'Imaging for Windows.	Private
33421	828D	CFARRepeatPatternDim	For camera raw files from sensors with CFA overlay.	TIFF/EP spec, p. 23
33422	828E	CFAPattern	For camera raw files from sensors with CFA overlay.	TIFF/EP spec, p. 23
33423	828F	BatteryLevel	Encodes camera battery level at time of image capture.	TIFF/EP spec, p. 45
33432	8298	Copyright	Copyright notice.	Baseline
33434	829A	ExposureTime	Exposure time given in seconds.	Exif Private IFD TIFF/EP spec, p. 38
33437	829D	FNumber	The F number.	Exif Private IFD TIFF/EP spec, p. 39
33445	82A5	MD FileTag	Specifies the pixel data format encoding in the Molecular Dynamics GEL file format.	Private
33446	82A6	MD ScalePixel	Specifies a scale factor in the Molecular Dynamics GEL file format.	Private
33447	82A7	MD ColorTable	Used to specify the conversion from 16bit to 8bit in the Molecular Dynamics GEL file format.	Private
33448	82A8	MD LabName	Name of the lab that scanned this file, as used in the Molecular Dynamics GEL file format.	Private
33449	82A9	MD SampleInfo	Information about the sample, as used in the Molecular Dynamics GEL file format.	Private
33450	82AA	MD PrepDate	Date the sample was prepared, as used in the Molecular Dynamics GEL file format.	Private

Code Dec	Hex	Name	Description	Source of Tag
33451	82AB	MD PrepTime	Time the sample was prepared, as used in the Molecular Dynamics GEL file format.	Private
33452	82AC	MD FileUnits	Units for data in this file, as used in the Molecular Dynamics GEL file format.	Private
33550	830E	ModelPixelScaleTag	Used in interchangeable GeoTIFF_1_0 files.	Private
33723	83BB	IPTC/NAA	IPTC-NAA (International Press Telecommunications Council-Newspaper spec, p. Association of America) metadata.	TIFF/EP 33
33918	847E	INGR Packet Data Tag	Intergraph Application specific storage.	Private
33919	847F	INGR Flag Registers	Intergraph Application specific flags.	Private
33920	8480	IrasB Transformation Matrix	Originally part of Intergraph's GeoTIFF tags, but likely understood by IrasB only.	Private
33922	8482	ModelTiepointTag	Originally part of Intergraph's GeoTIFF tags, but now used in interchangeable GeoTIFF_1_0 files. In GeoTIFF_1_0, either this tag or 34264 must be defined, but not both	Private
34016		Site	Site where image created.	TIFF/IT spec, 7.2.3
34017		ColorSequence	Sequence of colors if other than CMYK.	TIFF/IT spec, 7.2.8.3.2
34018		IT8Header	Certain inherited headers.	TIFF/IT spec, 7.2.3
34019		RasterPadding	Type of raster padding used, if any.	TIFF/IT spec, 7.2.6
34020		BitsPerRunLength	Number of bits for short run length encoding.	TIFF/IT spec, 7.2.6
34021		BitsPerExtendedRunLength	Number of bits for long run length encoding.	TIFF/IT spec, 7.2.6
34022		ColorTable	Color value in a color palette.	TIFF/IT spec, 7.2.8.4
34023		ImageColorIndicator	Indicates if image (foreground) color	TIFF/IT

Code Dec	Hex	Name	Description	Source of Tag
			or transparency is specified.	spec, 7.2.9
34024		BackgroundColorIndicator	Background color specification.	TIFF/IT spec, 7.2.9
34025		ImageColorValue	Specifies image (foreground) color.	TIFF/IT spec, 7.2.8.4
34026		BackgroundColorValue	Specifies background color.	TIFF/IT spec, 7.2.8.4
34027		PixelIntensityRange	Specifies data values for 0 percent and 100 percent pixel intensity.	TIFF/IT spec, 7.2.8.4
34028		TransparencyIndicator	Specifies if transparency is used in HC file.	TIFF/IT spec, 7.2.8.4
34029		ColorCharacterization	Specifies ASCII table or other reference per ISO 12641 and ISO 12642.	TIFF/IT spec, 7.2.8.4
34030		HCUsage	Indicates the type of information in an HC file.	TIFF/IT spec, 7.2.6
34031		TrapIndicator	Indicates whether or not trapping has been applied to the file.	TIFF/IT spec, 7.2.6
34032		CMYKEquivalent	Specifies CMYK equivalent for specific separations.	TIFF/IT spec, 7.2.8.3.4
34033		Reserved	For future TIFF/IT use	TIFF/IT spec
34034		Reserved	For future TIFF/IT use	TIFF/IT spec
34035		Reserved	For future TIFF/IT use	TIFF/IT spec
34264	85D8	ModelTransformationTag	Used in interchangeable GeoTIFF_1_0 files. In GeoTIFF_1_0, either this tag or 33922 must be defined, but not both	Private
34377	8649	Photoshop	Collection of Photoshop 'Image Resource Blocks.	Private
34665	8769	Exif IFD	A pointer to the Exif IFD.	Private
34675	8773	InterColorProfile	ICC profile data.	TIFF/EP spec, p.

Code Dec	Hex	Name	Description	Source of Tag
				47
34732	87AC	ImageLayer	Defined in the Mixed Raster Content part of RFC 2301, used to denote the particular function of this Image in the mixed raster scheme.	Extended
34735	87AF	GeoKeyDirectoryTag	Used in interchangeable GeoTIFF_1_0 files. Mandatory in GeoTIFF_1_0.	Private
34736	87B0	GeoDoubleParamsTag	Used in interchangeable GeoTIFF_1_0 files.	Private
34737	87B1	GeoAsciiParamsTag	Used in interchangeable GeoTIFF_1_0 files.	Private
34850	8822	ExposureProgram	The class of the program used by the camera to set exposure when the picture is taken.	Exif Private IFD TIFF/EP spec, p. 41
34852	8824	SpectralSensitivity	Indicates the spectral sensitivity of each channel of the camera used.	Exif Private IFD TIFF/EP spec, p. 48
34853	8825	GPSInfo	A pointer to the Exif-related GPS Info IFD.	TIFF/EP spec, p. 34
34855	8827	ISOSpeedRatings	Indicates the ISO Speed and ISO Latitude of the camera or input device as specified in ISO 12232.	Exif Private IFD TIFF/EP spec, p. 47
34856	8828	OECF	Indicates the Opto-Electric Conversion Function (OECF) specified in ISO 14524.	Exif Private IFD TIFF/EP spec, p. 48
34857	8829	Interlace	Indicates the field number of multiframe images.	TIFF/EP spec, p. 22
34858	882A	TimeZoneOffset	Encodes time zone of camera clock relative to GMT.	TIFF/EP spec, p. 38
34859	882B	SelfTimeMode	Number of seconds image capture	TIFF/EP

Code Dec	Hex	Name	Description	Source of Tag
			was delayed from button press.	spec, p. 45
34908	885C	HylaFAX FaxRecvParams	Used by HylaFAX.	Private
34909	885D	HylaFAX FaxSubAddress	Used by HylaFAX.	Private
34910	885E	HylaFAX FaxRecvTime	Used by HylaFAX.	Private
36864	9000	ExifVersion	The version of the supported Exif standard. Mandatory in the Exif IFD.	Exif Private IFD
36867	9003	DateTimeOriginal	The date and time when the original image data was generated. Mandatory for TIFF/EP.	Exif Private IFD TIFF/EP spec, p. 37
36868	9004	DateTimeDigitized	The date and time when the image was stored as digital data.	Exif Private IFD
37121	9101	ComponentsConfiguration	Specific to compressed data; specifies the channels and complements PhotometricInterpretation	Exif Private IFD
37122	9102	CompressedBitsPerPixel	Specific to compressed data; states the compressed bits per pixel.	Exif Private IFD TIFF/EP spec, p. 27
37377	9201	ShutterSpeedValue	Shutter speed.	Exif Private IFD TIFF/EP spec, p. 39
37378	9202	ApertureValue	The lens aperture.	Exif Private IFD TIFF/EP spec, p. 39
37379	9203	BrightnessValue	The value of brightness.	Exif Private IFD TIFF/EP spec, p. 40
37380	9204	ExposureBiasValue	The exposure bias.	Exif Private IFD TIFF/EP spec, p.

Code Dec	Hex	Name	Description	Source of Tag
				40
37381	9205	MaxApertureValue	The smallest F number of the lens.	Exif Private IFD TIFF/EP spec, p. 40
37382	9206	SubjectDistance	The distance to the subject, given in meters.	Exif Private IFD TIFF/EP spec, p. 44
37383	9207	MeteringMode	The metering mode.	Exif Private IFD TIFF/EP spec, p. 41
37384	9208	LightSource	The kind of light source.	Exif Private IFD TIFF/EP spec, p. 46
37385	9209	Flash	Indicates the status of flash when the image was shot.	Exif Private IFD TIFF/EP spec, p. 42
37386	920A	FocalLength	The actual focal length of the lens, in mm.	Exif Private IFD TIFF/EP spec, p. 44
37387	920B	FlashEnergy	Amount of flash energy (BCPS).	TIFF/EP spec, p. 43
37388	920C	SpatialFrequencyResponse	SFR of the camera.	TIFF/EP spec, p. 49
37389	920D	Noise	Noise measurement values.	TIFF/EP spec, p. 49
37390	920E	FocalPlaneXResolution	Number of pixels per FocalPlaneRes-	TIFF/EP

Code Dec	Name Hex	Description	Source of Tag
		olutionUnit (37392) in ImageWidth direction for main image.	dir-spec, p. 18
37391	920F	FocalPlaneYResolution	Number of pixels per FocalPlaneResolutionUnit (37392) in ImageLength direction for main image. TIFF/EP spec, p. 19
37392	9210	FocalPlaneResolutionUnit	Unit of measurement for FocalPlaneXResolution(37390) and FocalPlaneYResolution(37391). TIFF/EP spec, p. 19
37393	9211	ImageNumber	Number assigned to an image, e.g., in a chained image burst. TIFF/EP spec, p. 32
37394	9212	SecurityClassification	Security classification assigned to the image. TIFF/EP spec, p. 33
37395	9213	ImageHistory	Record of what has been done to the image. TIFF/EP spec, p. 33
			Exif Private IFD
37396	9214	SubjectLocation	Indicates the location and area of the main subject in the overall scene. TIFF/EP spec, p. 45
37397	9215	ExposureIndex	Encodes the camera exposure index setting when image was captured. TIFF/EP spec, p. 47
37398	9216	TIFF/EPStandardID	For current spec, tag value equals 1000. TIFF/EP spec, p. 16
			Mandatory in TIFF/EP.
37399	9217	SensingMethod	Type of image sensor. TIFF/EP spec, p. 22
			Mandatory in TIFF/EP.
37500	927C	MakerNote	Manufacturer specific information. Exif Private IFD
37510	9286	UserComment	Keywords or comments on the image; complements ImageDescription. Exif Private IFD
37520	9290	SubsecTime	A tag used to record fractions of seconds for the DateTime tag. Exif Private IFD
37521	9291	SubsecTimeOriginal	A tag used to record fractions of seconds for the DateTimeOriginal tag. Exif Private IFD
37522	9292	SubsecTimeDigitized	A tag used to record fractions of seconds for the DateTimeDigitized tag. Exif Private IFD

Code Dec	Hex	Name	Description	Source of Tag
			tag.	
37724	935C	ImageSourceData	Used by Adobe Photoshop.	Private
40960	A000	FlashpixVersion	The Flashpix format version supported by a FPXR file., Mandatory in the Exif IFD	Exif Private IFD
40961	A001	ColorSpace	The color space information tag is always recorded as the color space specifier. Mandatory in the Exif IFD.	Exif Private IFD
40962	A002	PixelXDimension	Specific to compressed data; the valid width of the meaningful image.	Exif Private IFD
40963	A003	PixelYDimension	Specific to compressed data; the valid height of the meaningful image.	Exif Private IFD
40964	A004	RelatedSoundFile	Used to record the name of an audio file related to the image data.	Exif Private IFD
40965	A005	Interoperability IFD	A pointer to the Exif-related Interoperability IFD.	Private
41483	A20B	FlashEnergy	Indicates the strobe energy at the time the image is captured, as measured in Beam Candle Power Seconds	Exif Private IFD
41484	A20C	SpatialFrequencyResponse	Records the camera or input device spatial frequency table and SFR values in the direction of image width, image height, and diagonal direction, as specified in ISO 12233.	Exif Private IFD
41486	A20E	FocalPlaneXResolution	Indicates the number of pixels in the image width (X) direction per FocalPlaneResolutionUnit on the camera focal plane.	Exif Private IFD
41487	A20F	FocalPlaneYResolution	Indicates the number of pixels in the image height (Y) direction per FocalPlaneResolutionUnit on the camera focal plane.	Exif Private IFD
41488	A210	FocalPlaneResolutionUnit	Indicates the unit for measuring FocalPlaneXResolution and FocalPlaneYResolution.	Exif Private IFD
41492	A214	SubjectLocation	Indicates the location of the main subject in the scene.	Exif Private IFD
41493	A215	ExposureIndex	Indicates the exposure index selected on the camera or input device at the time the image is captured.	Exif Private IFD
41495	A217	SensingMethod	Indicates the image sensor type on the camera or input device.	Exif Private IFD

Code		Name	Description	Source of Tag
Dec	Hex			
41728	A300	FileSource	Indicates the image source.	Exif Private IFD
41729	A301	SceneType	Indicates the image source.	Exif Private IFD
41730	A302	CFAPattern	Indicates the color filter array (CFA) geometric pattern of the image sensor when a one-chip color area sensor is used.	Exif Private IFD
41985	A401	CustomRendered	Indicates the use of special processing on image data, such as rendering geared to output.	Exif Private IFD
41986	A402	ExposureMode	Indicates the exposure mode set when the image was shot.	Exif Private IFD
41987	A403	WhiteBalance	Indicates the white balance mode set when the image was shot.	Exif Private IFD
41988	A404	DigitalZoomRatio	Indicates the digital zoom ratio when the image was shot.	Exif Private IFD
41989	A405	FocalLengthIn35mmFilm	Indicates the equivalent focal length assuming a 35mm film camera, in mm.	Exif Private IFD
41990	A406	SceneCaptureType	Indicates the type of scene that was shot.	Exif Private IFD
41991	A407	GainControl	Indicates the degree of overall image gain adjustment.	Exif Private IFD
41992	A408	Contrast	Indicates the direction of contrast processing applied by the camera when the image was shot.	Exif Private IFD
41993	A409	Saturation	Indicates the direction of saturation processing applied by the camera when the image was shot.	Exif Private IFD
41994	A40A	Sharpness	Indicates the direction of sharpness processing applied by the camera when the image was shot.	Exif Private IFD
41995	A40B	DeviceSettingDescription	This tag indicates information on the picture-taking conditions of a particular camera model.	Exif Private IFD
41996	A40C	SubjectDistanceRange	Indicates the distance to the subject.	Exif Private IFD
42016	A420	ImageUniqueID	Indicates an identifier assigned uniquely to each image.	Exif Private IFD
42112	A480	GDAL_METADATA	Used by the GDAL library, holds an XML list of name=value 'metadata' values about the image as a whole, and about specific samples.	Private

Code Dec	Hex	Name	Description	Source of Tag
42113	A481	GDAL_NODATA	Used by the GDAL library, contains an ASCII encoded nodata or background pixel value.	Private
48129	BC01	PixelFormat	A 128-bit Globally Unique Identifier (GUID) that identifies the image pixel format.	HD Photo Feature Spec, p. 17
48130	BC02	Transformation	Specifies the transformation to be applied when decoding the image to present the desired representation.	HD Photo Feature Spec, p. 23
48131	BC03	Uncompressed	Specifies that image data is uncompressed.	HD Photo Feature Spec, p. 23
48132	BC04	ImageType	Specifies the image type of each individual frame in a multi-frame file.	HD Photo Feature Spec, p. 27
48256	BC80	ImageWidth	The image's width, in pixels (X:horizontal). The number of columns in the image.	HD Photo Feature Spec, p. 21
48257	BC81	ImageHeight	Specifies the number of pixels or scan lines in the transformed photo.	HD Photo Feature Spec, p. 21
48258	BC82	WidthResolution	Specifies the horizontal resolution of a transformed image expressed in pixels per inch.	HD Photo Feature Spec, p. 21
48259	BC83	HeightResolution	Specifies the vertical resolution of a transformed image expressed in pixels per inch.	HD Photo Feature Spec, p. 21
48320	BCC0	ImageOffset	Specifies the byte offset pointer to the beginning of the photo data, relative to the beginning of the file.	HD Photo Feature Spec, p. 22
48321	BCC1	ImageByteCount	Specifies the size of the photo in bytes.	HD Photo Feature Spec, p. 22
48322	BCC2	AlphaOffset	Specifies the byte offset pointer the	HD Photo

Code Dec	Hex	Name	Description	Source of Tag
			beginning of the planar alpha channel data, relative to the beginning of the file.	Feature Spec, p. 22
48323	BCC3	AlphaByteCount	Specifies the size of the alpha channel data in bytes.	HD Photo Feature Spec, p. 23
48324	BCC4	ImageDataDiscard	Signifies the level of data that has been discarded from the image as a result of a compressed domain transcode to reduce the file size.	HD Photo Feature Spec, p. 25
48325	BCC5	AlphaDataDiscard	Signifies the level of data that has been discarded from the planar alpha channel as a result of a compressed domain transcode to reduce the file size.	HD Photo Feature Spec, p. 26
48132	BC04	ImageType	Specifies the image type of each individual frame in a multi-frame file.	HD Photo Feature Spec, p. 27
50215	C427	Oce Scanjob Description	Used in the Oce scanning process.	Private
50216	C428	Oce Application Selector	Used in the Oce scanning process.	Private
50217	C429	Oce Identification Number	Used in the Oce scanning process.	Private
50218	C42A	Oce ImageLogic Characteristics	Used in the Oce scanning process.	Private
50706	C612	DNGVersion	Encodes DNG four-tier version number; for version 1.1.0.0, the tag contains the bytes 1, 1, 0, 0. Used in IFD 0 of DNG files.	DNG spec, p. 17
50707	C613	DNGBackwardVersion	Defines oldest version of spec with which file is compatible. Used in IFD 0 of DNG files.	DNG spec, p. 17
50708	C614	UniqueCameraModel	Unique, non-localized name for camera model. Used in IFD 0 of DNG files.	DNG spec, p. 18
50709	C615	LocalizedCameraModel	Similar to 50708, with localized camera name. Used in IFD 0 of DNG files.	DNG spec, p. 19
50710	C616	CFAPlaneColor	Mapping between values in the CFAPattern tag and the plane numbers in LinearRaw space. Used in Raw IFD of DNG files.	DNG spec, p. 19
50711	C617	CFALayout	Required for non-RGB CFA images. Spatial layout of the CFA. Used in	DNG

Code Dec	Hex	Name	Description	Source of Tag
			Raw IFD of DNG files.	spec, p. 20
50712	C618	LinearizationTable	Lookup table that maps stored values to linear values. Used in Raw IFD of DNG files.	DNG spec, p. 20
50713	C619	BlackLevelRepeatDim	Repeat pattern size for BlackLevel tag. Used in Raw IFD of DNG files.	DNG spec, p. 21
50714	C61A	BlackLevel	Specifies the zero light encoding level. Used in Raw IFD of DNG files.	DNG spec, p. 21
50715	C61B	BlackLevelDeltaH	Specifies the difference between zero light encoding level for each column and the baseline zero light encoding level. Used in Raw IFD of DNG files.	DNG spec, p. 22
50716	C61C	BlackLevelDeltaV	Specifies the difference between zero light encoding level for each row and the baseline zero light encoding level. Used in Raw IFD of DNG files.	DNG spec, p. 23
50717	C61D	WhiteLevel	Specifies the fully saturated encoding level for the raw sample values. Used in Raw IFD of DNG files.	DNG spec, p. 23
50718	C61E	DefaultScale	For cameras with non-square pixels, specifies the default scale factors for each direction to convert the image to square pixels. Used in Raw IFD of DNG files.	DNG spec, p. 24
50719	C61F	DefaultCropOrigin	Specifies the origin of the final image area, ignoring the extra pixels at edges used to prevent interpolation artifacts. Used in Raw IFD of DNG files.	DNG spec, p. 25
50720	C620	DefaultCropSize	Specifies size of final image area in raw image coordinates. Used in Raw IFD of DNG files.	DNG spec, p. 25
50721	C621	ColorMatrix1	Defines a transformation matrix that converts XYZ values to reference camera native color space values, under the first calibration illuminant. Used in IFD 0 of DNG files.	DNG spec, p. 27
50722	C622	ColorMatrix2	Defines a transformation matrix that converts XYZ values to reference camera native color space values,	DNG spec, p. 28

Code		Name	Description	Source of Tag
Dec	Hex			
			under the second calibration illuminant. Used in IFD 0 of DNG files.	
50723	C623	CameraCalibration1	Defines a calibration matrix that transforms reference camera native space values to individual camera native space values under the first calibration illuminant. Used in IFD 0 of DNG files.	DNG spec, p. 28
50724	C624	CameraCalibration2	Defines a calibration matrix that transforms reference camera native space values to individual camera native space values under the second calibration illuminant. Used in IFD 0 of DNG files.	DNG spec, p. 29
50725	C625	ReductionMatrix1	Defines a dimensionality reduction matrix for use as the first stage in converting color camera native space values to XYZ values, under the first calibration illuminant. Used in IFD 0 of DNG files.	DNG spec, p. 30
50726	C626	ReductionMatrix2	Defines a dimensionality reduction matrix for use as the first stage in converting color camera native space values to XYZ values, under the second calibration illuminant. Used in IFD 0 of DNG files.	DNG spec, p. 30
50727	C627	AnalogBalance	Pertaining to white balance, defines the gain, either analog or digital, that has been applied to the stored raw values. Used in IFD 0 of DNG files.	DNG spec, p. 31
50728	C628	AsShotNeutral	Specifies the selected white balance at the time of capture, encoded as the coordinates of a perfectly neutral color in linear reference space values. Used in IFD 0 of DNG files.	DNG spec, p. 31
50729	C629	AsShotWhiteXY	Specifies the selected white balance at the time of capture, encoded as x-y chromaticity coordinates. Used in IFD 0 of DNG files.	DNG spec, p. 32
50730	C62A	BaselineExposure	Specifies in EV units how much to move the zero point for exposure compensation. Used in IFD 0 of DNG files.	DNG spec, p. 32
50731	C62B	BaselineNoise	Specifies the relative noise of the	DNG spec, p.

Code Dec	Hex	Name	Description	Source of Tag
			camera model at a baseline ISO value of 100, compared to reference camera model. Used in IFD 0 of DNG files.	33
50732	C62C	BaselineSharpness	Specifies the relative amount of sharpening required for this camera model, compared to reference camera model. Used in IFD 0 of DNG files.	DNG spec, p. 33
50733	C62D	BayerGreenSplit	For CFA images, specifies, in arbitrary units, how closely the values of the green pixels in the blue/green rows track the values of the green pixels in the red/green rows. Used in Raw IFD of DNG files.	DNG spec, p. 34
50734	C62E	LinearResponseLimit	Specifies the fraction of the encoding range above which the response may become significantly non-linear. Used in IFD 0 of DNG files.	DNG spec, p. 34
50735	C62F	CameraSerialNumber	Serial number of camera. Used in IFD 0 of DNG files.	DNG spec, p. 35
50736	C630	LensInfo	Information about the lens. Used in IFD 0 of DNG files.	DNG spec, p. 35
50737	C631	ChromaBlurRadius	Normally for non-CFA images, provides a hint about how much chroma blur ought to be applied. Used in Raw IFD of DNG files.	DNG spec, p. 36
50738	C632	AntiAliasStrength	Provides a hint about the strength of the camera's anti-aliasing filter. Used in Raw IFD of DNG files.	DNG spec, p. 36
50739		ShadowScale	Used by Adobe Camera Raw to control sensitivity of its shadows slider. Used in IFD 0 of DNG files.	DNG spec, p. 38
50740	C634	DNGPrivateData	Provides a way for camera manufacturers to store private data in DNG files for use by their own raw converters. Used in IFD 0 of DNG files.	DNG spec, p. 37
50741	C635	MakerNoteSafety	Lets the DNG reader know whether the Exif MakerNote tag is safe to preserve. Used in IFD 0 of DNG files.	DNG spec, p. 38
50778	C65A	CalibrationIlluminant1	Illuminant used for first set of cal-	DNG

Code Dec	Hex	Name	Description	Source of Tag
			ibration tags. Used in IFD 0 of DNG files.	spec, p. 26
50779	C65B	CalibrationIlluminant2	Illuminant used for second set of calibration tags. Used in IFD 0 of DNG files.	DNG spec, p. 26
50780	C65C	BestQualityScale	Specifies the amount by which the values of the DefaultScale tag need to be multiplied to achieve best quality image size. Used in Raw IFD of DNG files.	DNG spec, p. 24
50781		RawDataUniqueID	Contains a 16-byte unique identifier for the raw image file in the DNG file. Used in IFD 0 of DNG files.	DNG spec, p. 39
50784	C660	Alias Layer Metadata	Alias Sketchbook Pro layer usage description.	Private
50827		OriginalRawFileName	Name of original file if the DNG file results from conversion from a non-DNG raw file. Used in IFD 0 of DNG files.	DNG spec, p. 39
50828		OriginalRawFileData	If the DNG file was converted from a non-DNG raw file, then this tag contains the original raw data. Used in IFD 0 of DNG files.	DNG spec, p. 40
50829		ActiveArea	Defines the active (non-masked) pixels of the sensor. Used in Raw IFD of DNG files.	DNG spec, p. 41
50830		MaskedAreas	List of non-overlapping rectangle coordinates of fully masked pixels, which can optimally be used by DNG readers to measure the black encoding level. Used in Raw IFD of DNG files.	DNG spec, p. 42
50831		AsShotICCProfile	Contains ICC profile that, in conjunction with the AsShotPreProfileMatrix tag, specifies a default color rendering from camera color space coordinates (linear reference values) into the ICC profile connection space. Used in IFD 0 of DNG files.	DNG spec, p. 42
50832		AsShotPreProfileMatrix	Specifies a matrix that should be applied to the camera color space coordinates before processing the values through the ICC profile specified in the AsShotICCProfile tag.	DNG spec, p. 43

Code		Name	Description	Source of Tag
Dec	Hex			
			Used in IFD 0 of DNG files.	
50833		CurrentICCProfile	The CurrentICCProfile and CurrentPreProfileMatrix tags have the same purpose and usage as the AsShotICCProfile and AsShotPreProfileMatrix tag pair, except they are for use by raw file editors rather than camera manufacturers. Used in IFD 0 of DNG files.	DNG spec, p. 44
50834		CurrentPreProfileMatrix	The CurrentICCProfile and CurrentPreProfileMatrix tags have the same purpose and usage as the AsShotICCProfile and AsShotPreProfileMatrix tag pair, except they are for use by raw file editors rather than camera manufacturers. Used in IFD 0 of DNG files.	DNG spec, p. 44

<sup>1</sup>Content for base and extended tags used by permission of the author, Max Maischein.

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