Tag (dec)	IFD	Key	Type	Tag description
11	Image	Exif.Image.ProcessingSoftware	Ascii	The name and version of the software used to post-process the picture.
254	Image	Exif.Image.NewSubfileType	Long	A general indication of the kind of data contained in this subfile.
255	Image	Exif.Image.SubfileType	Short	A general indication of the kind of data contained in this subfile. This field is deprecated. The NewSubfileType field should be
256	Image	Exif.Image.ImageWidth	Long	The number of columns of image data, equal to the number of pixels per row. In JPEG compressed data a JPEG marker is used instead of
257	Image	Exif.Image.ImageLength	Long	The number of rows of image data. In JPEG compressed data a JPEG marker is used instead of this tag.
258	Image	Exif.Image.BitsPerSample	Short	The number of bits per image component. In this standard each component of the image is 8 bits, so the value for this tag is 8. See
259	Image	Exif.Image.Compression	Short	The compression scheme used for the image data. When a primary image is JPEG compressed, this designation is not necessary and is
262	Image	Exif.Image.PhotometricInterpretation	Short	The pixel composition. In JPEG compressed data a JPEG marker is used instead of this tag.
263	Image	Exif.Image.Thresholding	Short	For black and white TIFF files that represent shades of gray, the technique used to convert from gray to black and white pixels.
264	Image	Exif.Image.CellWidth	Short	The width of the dithering or halftoning matrix used to create a dithered or halftoned bilevel file.
265	Image	Exif.Image.CellLength	Short	The length of the dithering or halftoning matrix used to create a dithered or halftoned bilevel file.
266	Image	Exif.Image.FillOrder	Short	The logical order of bits within a byte
269	Image	Exif.Image.DocumentName	Ascii	The name of the document from which this image was scanned.
270	Image	Exif.Image.ImageDescription	Ascii	A character string giving the title of the image. It may be a comment such as "1988 company picnic" or the like. Two-bytes character codes

271 Image	Exif.Image.Make	Ascii	The manufacturer of the recording equipment. This is the manufacturer of the DSC, scanner, video digitizer or other equipment
272 Image	Exif.Image.Model	Ascii	The model name or model number of the equipment. This is the model name or number of the DSC, scanner, video digitizer or other
273 Image	Exif.Image.StripOffsets	Long	For each strip, the byte offset of that strip. It is recommended that this be selected so the number of strip bytes does not exceed 64
274 Image	Exif.Image.Orientation	Short	The image orientation viewed in terms of rows and columns.
277 Image	Exif.Image.SamplesPerPixel	Short	The number of components per pixel. Since this standard applies to RGB and YCbCr images, the value set for this tag is 3. In JPEG
278 Image	Exif.Image.RowsPerStrip	Long	The number of rows per strip. This is the number of rows in the image of one strip when an image is divided into strips. With JPEG
279 Image	Exif.Image.StripByteCounts	Long	The total number of bytes in each strip. With JPEG compressed data this designation is not needed and is omitted.
282 Image	Exif.Image.XResolution	Rational	The number of pixels per <ResolutionUnit> in the <ImageWidth> direction. When the image resolution is unknown, 72
283 Image	Exif.Image.YResolution	Rational	The number of pixels per <ResolutionUnit> in the <ImageLength> direction. The same value as <XResolution> is
284 Image	Exif.Image.PlanarConfiguration	Short	Indicates whether pixel components are recorded in a chunky or planar format. In JPEG compressed files a JPEG marker is
285 Image	Exif.Image.PageName	Ascii	The name of the page from which this image was scanned.
286 Image	Exif.Image.XPosition	Rational	X position of the image. The X offset in ResolutionUnits of the left side of the image, with respect to the left side of the page.
287 Image	Exif.Image.YPosition	Rational	Y position of the image. The Y offset in ResolutionUnits of the top of the image, with respect to the top of the page. In the TIFF
290 Image	Exif.Image.GrayResponseUnit	Short	The precision of the information contained in the GrayResponseCurve.
291 Image	Exif.Image.GrayResponseCurve	Short	For grayscale data, the optical density of each possible pixel value.

292 Image	Exif.Image.T4 Options	Long	T.4-encoding options.
293 Image	Exif.Image.T6 Options	Long	T.6-encoding options.
296 Image	Exif.Image.ResolutionUnit	Short	The unit for measuring <XResolution> and <YResolution>. The same unit is used for both <XResolution> and <YResolution>. If
297 Image	Exif.Image.PageNumber	Short	The page number of the page from which this image was scanned.
301 Image	Exif.Image.TransferFunction	Short	A transfer function for the image, described in tabular style. Normally this tag is not necessary, since color space is specified in the color
305 Image	Exif.Image.Software	Ascii	This tag records the name and version of the software or firmware of the camera or image input device used to generate the image. The
306 Image	Exif.Image.DateTime	Ascii	The date and time of image creation. In Exif standard, it is the date and time the file was changed.
315 Image	Exif.Image.Artist	Ascii	This tag records the name of the camera owner, photographer or image creator. The detailed format is not specified, but it is
316 Image	Exif.Image.HostComputer	Ascii	This tag records information about the host computer used to generate the image.
317 Image	Exif.Image.Predictor	Short	A predictor is a mathematical operator that is applied to the image data before an encoding scheme is applied.
318 Image	Exif.Image.WhitePoint	Rational	The chromaticity of the white point of the image. Normally this tag is not necessary, since color space is specified in the colorspace
319 Image	Exif.Image.PrimaryChromaticities	Rational	The chromaticity of the three primary colors of the image. Normally this tag is not necessary, since colorspace is specified in the
320 Image	Exif.Image.ColorMap	Short	A color map for palette color images. This field defines a Red-Green-Blue color map (often called a lookup table) for palette-color
321 Image	Exif.Image.HalftoneHints	Short	The purpose of the HalftoneHints field is to convey to the halftone function the range of gray levels within a colorimetrically-specified
322 Image	Exif.Image.TileWidth	Long	The tile width in pixels. This is the number of columns in each tile.

323 Image	Exif.Image.Tile Length	Long	The tile length (height) in pixels. This is the number of rows in each tile.
324 Image	Exif.Image.Tile Offsets	Short	For each tile, the byte offset of that tile, as compressed and stored on disk. The offset is specified with respect to the beginning of the TIFF
325 Image	Exif.Image.Tile ByteCounts	Long	For each tile, the number of (compressed) bytes in that tile. See TileOffsets for a description of how the byte counts are ordered.
330 Image	Exif.Image.Su bIFDs	Long	Defined by Adobe Corporation to enable TIFF Trees within a TIFF file.
332 Image	Exif.Image.Ink Set	Short	The set of inks used in a separated (PhotometricInterpretation=5) image.
333 Image	Exif.Image.Ink Names	Ascii	The name of each ink used in a separated (PhotometricInterpretation=5) image.
334 Image	Exif.Image.Nu mberOfInks	Short	The number of inks. Usually equal to SamplesPerPixel, unless there are extra samples.
336 Image	Exif.Image.Dot Range	Byte	The component values that correspond to a 0% dot and 100% dot.
337 Image	Exif.Image.Tar getPrinter	Ascii	A description of the printing environment for which this separation is intended.
338 Image	Exif.Image.Ext raSamples	Short	Specifies that each pixel has m extra components whose interpretation is defined by one of the values listed below.
339 Image	Exif.Image.Sa mpleFormat	Short	This field specifies how to interpret each data sample in a pixel.
340 Image	Exif.Image.SM inSampleValu e	Short	This field specifies the minimum sample value.
341 Image	Exif.Image.SM axSampleValu e	Short	This field specifies the maximum sample value.
342 Image	Exif.Image.Tra nsferRange	Short	Expands the range of the TransferFunction
343 Image	Exif.Image.Cli pPath	Byte	A TIFF ClipPath is intended to mirror the essentials of PostScript's path creation functionality.

344 Image	Exif.Image.XCl ipPathUnits	SShort		The number of units that span the width of the image, in terms of integer ClipPath coordinates.
345 Image	Exif.Image.YCl ipPathUnits	SShort		The number of units that span the height of the image, in terms of integer ClipPath coordinates.
346 Image	Exif.Image.Ind exed	Short		Indexed images are images where the 'pixels' do not represent color values, but rather an index (usually 8-bit) into a separate color table,
347 Image	Exif.Image.JP EGTables	Undefined		This optional tag may be used to encode the JPEG quantization and Huffman tables for subsequent use by the JPEG decompression
351 Image	Exif.Image.OPI Proxy	Short		OPIProxy gives information concerning whether this image is a low-resolution proxy of a high-resolution image (Adobe OPI).
512 Image	Exif.Image.JP EGProc	Long		This field indicates the process used to produce the compressed data
513 Image	Exif.Image.JP EGInterchange Format	Long		The offset to the start byte (SOI) of JPEG compressed thumbnail data. This is not used for primary image JPEG data.
514 Image	Exif.Image.JP EGInterchange FormatLength	Long		The number of bytes of JPEG compressed thumbnail data. This is not used for primary image JPEG data. JPEG thumbnails are not
515 Image	Exif.Image.JP EGRestartInter val	Short		This Field indicates the length of the restart interval used in the compressed image data.
517 Image	Exif.Image.JP EGLosslessPr edictors	Short		This Field points to a list of lossless predictor-selection values, one per component.
518 Image	Exif.Image.JP EGPointTransf orms	Short		This Field points to a list of point transform values, one per component.
519 Image	Exif.Image.JP EGQTables	Long		This Field points to a list of offsets to the quantization tables, one per component.
520 Image	Exif.Image.JP EGDCTables	Long		This Field points to a list of offsets to the DC Huffman tables or the lossless Huffman tables, one per component.
521 Image	Exif.Image.JP EGACTables	Long		This Field points to a list of offsets to the Huffman AC tables, one per component.
529 Image	Exif.Image.YC bCrCoefficient s	Rational		The matrix coefficients for transformation from RGB to YCbCr image data. No default is given in TIFF; but here the value given in

530 Image	Exif.Image.YCbCrSubSampling	Short		The sampling ratio of chrominance components in relation to the luminance component. In JPEG compressed data a JPEG marker is
531 Image	Exif.Image.YCbCrPositioning	Short		The position of chrominance components in relation to the luminance component. This field is designated only for JPEG
532 Image	Exif.Image.ReferenceBlackWhite	Rational		The reference black point value and reference white point value. No defaults are given in TIFF, but the values below are given as defaults
700 Image	Exif.Image.XMLPacket	Byte		XMP Metadata (Adobe technote 9-14-02)
18246 Image	Exif.Image.Rating	Short		Rating tag used by Windows
18249 Image	Exif.Image.RatingPercent	Short		Rating tag used by Windows, value in percent
28722 Image	Exif.Image.VignettingCorrParams	SShort		Sony vignetting correction parameters
28725 Image	Exif.Image.ChromaticAberrationCorrParams	SShort		Sony chromatic aberration correction parameters
28727 Image	Exif.Image.DistortionCorrParams	SShort		Sony distortion correction parameters
32781 Image	Exif.Image.ImageID	Ascii		ImageID is the full pathname of the original, high-resolution image, or any other identifying string that uniquely identifies the original
33421 Image	Exif.Image.CFARepeatPatternDim	Short		Contains two values representing the minimum rows and columns to define the repeating patterns of the color filter array
33422 Image	Exif.Image.CFAPattern	Byte		Indicates the color filter array (CFA) geometric pattern of the image sensor when a one-chip color area sensor is used. It does not apply to
33423 Image	Exif.Image.BatteryLevel	Rational		Contains a value of the battery level as a fraction or string
33432 Image	Exif.Image.Copyright	Ascii		Copyright information. In this standard the tag is used to indicate both the photographer and editor copyrights. It is the copyright notice
33434 Image	Exif.Image.ExposureTime	Rational		Exposure time, given in seconds.

33437 Image	Exif.Image.FN umber	Rational	The F number.	
33723 Image	Exif.Image.IPT CNAA	Long	Contains an IPTC/NAA record	
34377 Image	Exif.Image.Im ageResources	Byte	Contains information embedded by the Adobe Photoshop application	
34665 Image	Exif.Image.Exi fTag	Long	A pointer to the Exif IFD. Interoperability, Exif IFD has the same structure as that of the IFD specified in TIFF. ordinarily,	
34675 Image	Exif.Image.Int erColorProfile	Undefined	Contains an InterColor Consortium (ICC) format color space characterization/profile	
34850 Image	Exif.Image.Exp osureProgram	Short	The class of the program used by the camera to set exposure when the picture is taken.	
34852 Image	Exif.Image.Sp ectralSensitivit y	Ascii	Indicates the spectral sensitivity of each channel of the camera used.	
34853 Image	Exif.Image.GP STag	Long	A pointer to the GPS Info IFD. The Interoperability structure of the GPS Info IFD, like that of Exif IFD, has no image data.	
34855 Image	Exif.Image.ISO SpeedRatings	Short	Indicates the ISO Speed and ISO Latitude of the camera or input device as specified in ISO 12232.	
34856 Image	Exif.Image.OE CF	Undefined	Indicates the Opto-Electric Conversion Function (OECF) specified in ISO 14524.	
34857 Image	Exif.Image.Int erlace	Short	Indicates the field number of multifield images.	
34858 Image	Exif.Image.Ti meZoneOffset	SShort	This optional tag encodes the time zone of the camera clock (relative to Greenwich Mean Time) used to create the DataTimeOriginal tag-	
34859 Image	Exif.Image.Sel fTimerMode	Short	Number of seconds image capture was delayed from button press.	
36867 Image	Exif.Image.Dat eTimeOriginal	Ascii	The date and time when the original image data was generated.	
37122 Image	Exif.Image.Co mpressedBits PerPixel	Rational	Specific to compressed data; states the compressed bits per pixel.	

37377 Image	Exif.Image.ShutterSpeedValue	SRational	Shutter speed.
37378 Image	Exif.Image.ApertureValue	Rational	The lens aperture.
37379 Image	Exif.Image.BrightnessValue	SRational	The value of brightness.
37380 Image	Exif.Image.ExposureBiasValue	SRational	The exposure bias.
37381 Image	Exif.Image.MaxApertureValue	Rational	The smallest F number of the lens.
37382 Image	Exif.Image.SubjectDistance	SRational	The distance to the subject, given in meters.
37383 Image	Exif.Image.MeteringMode	Short	The metering mode.
37384 Image	Exif.Image.LightSource	Short	The kind of light source.
37385 Image	Exif.Image.Flash	Short	Indicates the status of flash when the image was shot.
37386 Image	Exif.Image.FocalLength	Rational	The actual focal length of the lens, in mm.
37387 Image	Exif.Image.FlashEnergy	Rational	Amount of flash energy (BCPS).
37388 Image	Exif.Image.SpatialFrequencyResponse	Undefined	SFR of the camera.
37389 Image	Exif.Image.Noise	Undefined	Noise measurement values.
37390 Image	Exif.Image.FocalPlaneXResolution	Rational	Number of pixels per FocalPlaneResolutionUnit (37392) in ImageWidth direction for main image.
37391 Image	Exif.Image.FocalPlaneYResolution	Rational	Number of pixels per FocalPlaneResolutionUnit (37392) in ImageLength direction for main image.

37392 Image	Exif.Image.Foc alPlaneResolu tionUnit	Short	Unit of measurement for FocalPlaneXResolution(37390) and FocalPlaneYResolution(37391).
37393 Image	Exif.Image.Im ageNumber	Long	Number assigned to an image, e.g., in a chained image burst.
37394 Image	Exif.Image.Se curityClassific ation	Ascii	Security classification assigned to the image.
37395 Image	Exif.Image.Im ageHistory	Ascii	Record of what has been done to the image.
37396 Image	Exif.Image.Su bjectLocation	Short	Indicates the location and area of the main subject in the overall scene.
37397 Image	Exif.Image.Exp osureIndex	Rational	Encodes the camera exposure index setting when image was captured.
37398 Image	Exif.Image.TIF FEPStandardI D	Byte	Contains four ASCII characters representing the TIFF/EP standard version of a TIFF/EP file, eg '1', '0', '0', '0'
37399 Image	Exif.Image.Se nsingMethod	Short	Type of image sensor.
40091 Image	Exif.Image.XP Title	Byte	Title tag used by Windows, encoded in UCS2
40092 Image	Exif.Image.XP Comment	Byte	Comment tag used by Windows, encoded in UCS2
40093 Image	Exif.Image.XP Author	Byte	Author tag used by Windows, encoded in UCS2
40094 Image	Exif.Image.XP Keywords	Byte	Keywords tag used by Windows, encoded in UCS2
40095 Image	Exif.Image.XP Subject	Byte	Subject tag used by Windows, encoded in UCS2
50341 Image	Exif.Image.Pri ntImageMatch ing	Undefined	Print Image Matching, description needed.
50706 Image	Exif.Image.DN GVersion	Byte	This tag encodes the DNG four-tier version number. For files compliant with version 1.1.0.0 of the DNG specification, this tag should

50707 Image	Exif.Image.DN GBackwardVer sion	Byte	This tag specifies the oldest version of the Digital Negative specification for which a file is compatible. Readers shouldnot
50708 Image	Exif.Image.Uni queCameraMo del	Ascii	Defines a unique, non-localized name for the camera model that created the image in the raw file. This name should include the
50709 Image	Exif.Image.Loc alizedCamera Model	Byte	Similar to the UniqueCameraModel field, except the name can be localized for different markets to match the localization of the
50710 Image	Exif.Image.CF APlaneColor	Byte	Provides a mapping between the values in the CFAPattern tag and the plane numbers in LinearRaw space. This is a required tag for non-
50711 Image	Exif.Image.CF ALayout	Short	Describes the spatial layout of the CFA.
50712 Image	Exif.Image.Lin earizationTabl e	Short	Describes a lookup table that maps stored values into linear values. This tag is typically used to increase compression ratios by
50713 Image	Exif.Image.Bla ckLevelRepeat Dim	Short	Specifies repeat pattern size for the BlackLevel tag.
50714 Image	Exif.Image.Bla ckLevel	Rational	Specifies the zero light (a.k.a. thermal black or black current) encoding level, as a repeating pattern. The origin of this pattern is
50715 Image	Exif.Image.Bla ckLevelDeltaH	SRational	If the zero light encoding level is a function of the image column, BlackLevelDeltaH specifies the difference between the zero light
50716 Image	Exif.Image.Bla ckLevelDeltaV	SRational	If the zero light encoding level is a function of the image row, this tag specifies the difference between the zero light encoding level for
50717 Image	Exif.Image.Wh iteLevel	Long	This tag specifies the fully saturated encoding level for the raw sample values. Saturation is caused either by the sensor itself becoming
50718 Image	Exif.Image.Def aultScale	Rational	DefaultScale is required for cameras with non-square pixels. It specifies the default scale factors for each direction to convert the
50719 Image	Exif.Image.Def aultCropOrigin	Long	Raw images often store extra pixels around the edges of the final image. These extra pixels help prevent interpolation artifacts near
50720 Image	Exif.Image.Def aultCropSize	Long	Raw images often store extra pixels around the edges of the final image. These extra pixels help prevent interpolation artifacts near
50721 Image	Exif.Image.Col orMatrix1	SRational	ColorMatrix1 defines a transformation matrix that converts XYZ values to reference camera native color space values, under the

50722 Image	Exif.Image.ColorMatrix2	SRational	ColorMatrix2 defines a transformation matrix that converts XYZ values to reference camera native color space values, under the
50723 Image	Exif.Image.CameraCalibration1	SRational	CameraCalibration1 defines a calibration matrix that transforms reference camera native space values to individual camera native
50724 Image	Exif.Image.CameraCalibration2	SRational	CameraCalibration2 defines a calibration matrix that transforms reference camera native space values to individual camera native
50725 Image	Exif.Image.ReductionMatrix1	SRational	ReductionMatrix1 defines a dimensionality reduction matrix for use as the first stage in converting color camera native space values to
50726 Image	Exif.Image.ReductionMatrix2	SRational	ReductionMatrix2 defines a dimensionality reduction matrix for use as the first stage in converting color camera native space values to
50727 Image	Exif.Image.AnalogBalance	Rational	Normally the stored raw values are not white balanced, since any digital white balancing will reduce the dynamic range of the final image if
50728 Image	Exif.Image.AsShotNeutral	Short	Specifies the selected white balance at time of capture, encoded as the coordinates of a perfectly neutral color in linear reference
50729 Image	Exif.Image.AsShotWhiteXY	Rational	Specifies the selected white balance at time of capture, encoded as x-y chromaticity coordinates. The inclusion of this tag precludes
50730 Image	Exif.Image.BaselineExposure	SRational	Camera models vary in the trade-off they make between highlight headroom and shadow noise. Some leave a significant amount of
50731 Image	Exif.Image.BaselineNoise	Rational	Specifies the relative noise level of the camera model at a baseline ISO value of 100, compared to a reference camera model. Since
50732 Image	Exif.Image.BaselineSharpness	Rational	Specifies the relative amount of sharpening required for this camera model, compared to a reference camera model. Camera models
50733 Image	Exif.Image.BayerGreenSplit	Long	Only applies to CFA images using a Bayer pattern filter array. This tag specifies, in arbitrary units, how closely the values of the green
50734 Image	Exif.Image.LinearResponseLimit	Rational	Some sensors have an unpredictable non-linearity in their response as they near the upper limit of their encoding range. This
50735 Image	Exif.Image.CameraSerialNumber	Ascii	CameraSerialNumber contains the serial number of the camera or camera body that captured the image.
50736 Image	Exif.Image.LensInfo	Rational	Contains information about the lens that captured the image. If the minimum f-stops are unknown, they should be encoded as 0/0.

50737 Image	Exif.Image.Chr omaBlurRadiu s	Rational	ChromaBlurRadius provides a hint to the DNG reader about how much chroma blur should be applied to the image. If this tag is omitted, the
50738 Image	Exif.Image.Ant iAliasStrength	Rational	Provides a hint to the DNG reader about how strong the camera's anti-alias filter is. A value of 0.0 means no anti-alias filter (i.e., the camera
50739 Image	Exif.Image.Sh adowScale	SRational	This tag is used by Adobe Camera Raw to control the sensitivity of its 'Shadows' slider.
50740 Image	Exif.Image.DN GPrivateData	Byte	Provides a way for camera manufacturers to store private data in the DNG file for use by their own raw converters, and to have that
50741 Image	Exif.Image.Ma kerNoteSafety	Short	MakerNoteSafety lets the DNG reader know whether the EXIF MakerNote tag is safe to preserve along with the rest of the EXIF data.
50778 Image	Exif.Image.Cal ibrationIllumin ant1	Short	The illuminant used for the first set of color calibration tags (ColorMatrix1, CameraCalibration1, ReductionMatrix1). The legal values
50779 Image	Exif.Image.Cal ibrationIllumin ant2	Short	The illuminant used for an optional second set of color calibration tags (ColorMatrix2, CameraCalibration2, ReductionMatrix2). The legal values
50780 Image	Exif.Image.Be stQualityScale	Rational	For some cameras, the best possible image quality is not achieved by preserving the total pixel count during conversion. For
50781 Image	Exif.Image.Ra wDataUniqueI D	Byte	This tag contains a 16-byte unique identifier for the raw image data in the DNG file. DNG readers can use this tag to recognize a particular
50827 Image	Exif.Image.Ori ginalRawFileN ame	Byte	If the DNG file was converted from a non-DNG raw file, then this tag contains the file name of that original raw file.
50828 Image	Exif.Image.Ori ginalRawFileD ata	Undefined	If the DNG file was converted from a non-DNG raw file, then this tag contains the compressed contents of that original raw file. The
50829 Image	Exif.Image.Act iveArea	Long	This rectangle defines the active (non-masked) pixels of the sensor. The order of the rectangle coordinates is: top, left, bottom,
50830 Image	Exif.Image.Ma skedAreas	Long	This tag contains a list of non-overlapping rectangle coordinates of fully masked pixels, which can be optionally used by DNG readers to
50831 Image	Exif.Image.As ShotICCProfile	Undefined	This tag contains an ICC profile that, in conjunction with the AsShotPreProfileMatrix tag, provides the camera manufacturer
50832 Image	Exif.Image.As ShotPreProfile Matrix	SRational	This tag is used in conjunction with the AsShotICCProfile tag. It specifies a matrix that should be applied to the camera color space

50833	Image	Exif.Image.CurrentICCProfile	Undefined	This tag is used in conjunction with the CurrentPreProfileMatrix tag. The CurrentICCProfile and CurrentPreProfileMatrix tags have
50834	Image	Exif.Image.CurrentPreProfileMatrix	SRational	This tag is used in conjunction with the CurrentICCProfile tag. The CurrentICCProfile and CurrentPreProfileMatrix tags have
50879	Image	Exif.Image.ColorimetricReference	Short	The DNG color model documents a transform between camera colors and CIE XYZ values. This tag describes the colorimetric
50931	Image	Exif.Image.CameraCalibrationSignature	Byte	A UTF-8 encoded string associated with the CameraCalibration1 and CameraCalibration2 tags. The CameraCalibration1 and
50932	Image	Exif.Image.ProfileCalibrationSignature	Byte	A UTF-8 encoded string associated with the camera profile tags. The CameraCalibration1 and CameraCalibration2 tags should
50933	Image	Exif.Image.ExtraCameraProfiles	Long	A list of file offsets to extra Camera Profile IFDs. Note that the primary camera profile tags should be stored in IFD 0, and the
50934	Image	Exif.Image.AsShotProfileName	Byte	A UTF-8 encoded string containing the name of the "as shot" camera profile, if any.
50935	Image	Exif.Image.NoiseReductionApplied	Rational	This tag indicates how much noise reduction has been applied to the raw data on a scale of 0.0 to 1.0. A 0.0 value indicates that no noise
50936	Image	Exif.Image.ProfileName	Byte	A UTF-8 encoded string containing the name of the camera profile. This tag is optional if there is only a single camera profile stored in the
50937	Image	Exif.Image.ProfileHueSatMapDims	Long	This tag specifies the number of input samples in each dimension of the hue/saturation/value mapping tables. The data for these tables
50938	Image	Exif.Image.ProfileHueSatMapData1	Float	This tag contains the data for the first hue/saturation/value mapping table. Each entry of the table contains three 32-bit IEEE floating-
50939	Image	Exif.Image.ProfileHueSatMapData2	Float	This tag contains the data for the second hue/saturation/value mapping table. Each entry of the table contains three 32-bit IEEE
50940	Image	Exif.Image.ProfileToneCurve	Float	This tag contains a default tone curve that can be applied while processing the image as a starting point for user adjustments. The
50941	Image	Exif.Image.ProfileEmbedPolicy	Long	This tag contains information about the usage rules for the associated camera profile.
50942	Image	Exif.Image.ProfileCopyright	Byte	A UTF-8 encoded string containing the copyright information for the camera profile. This string always should be preserved along with the

50964 Image	Exif.Image.For wardMatrix1	SRational	This tag defines a matrix that maps white balanced camera colors to XYZ D50 colors.
50965 Image	Exif.Image.For wardMatrix2	SRational	This tag defines a matrix that maps white balanced camera colors to XYZ D50 colors.
50966 Image	Exif.Image.Pre viewApplicatio nName	Byte	A UTF-8 encoded string containing the name of the application that created the preview stored in the IFD.
50967 Image	Exif.Image.Pre viewApplicatio nVersion	Byte	A UTF-8 encoded string containing the version number of the application that created the preview stored in the IFD.
50968 Image	Exif.Image.Pre viewSettingsN ame	Byte	A UTF-8 encoded string containing the name of the conversion settings (for example, snapshot name) used for the preview stored in the IFD.
50969 Image	Exif.Image.Pre viewSettingsDi gest	Byte	A unique ID of the conversion settings (for example, MD5 digest) used to render the preview stored in the IFD.
50970 Image	Exif.Image.Pre viewColorSpac e	Long	This tag specifies the color space in which the rendered preview in this IFD is stored. The default value for this tag is sRGB for color previews
50971 Image	Exif.Image.Pre viewDateTime	Ascii	This tag is an ASCII string containing the name of the date/time at which the preview stored in the IFD was rendered. The
50972 Image	Exif.Image.Ra wImageDigest	Undefined	This tag is an MD5 digest of the raw image data. All pixels in the image are processed in row-scan order. Each pixel is zero padded to 16 or
50973 Image	Exif.Image.Ori ginalRawFileDi gest	Undefined	This tag is an MD5 digest of the data stored in the OriginalRawFileData tag.
50974 Image	Exif.Image.Su bTileBlockSize	Long	Normally, the pixels within a tile are stored in simple row-scan order. This tag specifies that the pixels within a tile should be grouped first
50975 Image	Exif.Image.Ro wInterleaveFa ctor	Long	This tag specifies that rows of the image are stored in interleaved order. The value of the tag specifies the number of interleaved fields.
50981 Image	Exif.Image.Pro fileLookTable Dims	Long	This tag specifies the number of input samples in each dimension of a default "look" table. The data for this table is stored in the
50982 Image	Exif.Image.Pro fileLookTable Data	Float	This tag contains a default "look" table that can be applied while processing the image as a starting point for user adjustment. This
51008 Image	Exif.Image.Op codeList1	Undefined	Specifies the list of opcodes that should be applied to the raw image, as read directly from the file.

51009 Image	Exif.Image.Op codeList2	Undefined	Specifies the list of opcodes that should be applied to the raw image, just after it has been mapped to linear reference values.
51022 Image	Exif.Image.Op codeList3	Undefined	Specifies the list of opcodes that should be applied to the raw image, just after it has been demosaiced.
51041 Image	Exif.Image.Noi seProfile	Double	NoiseProfile describes the amount of noise in a raw image. Specifically, this tag models the amount of signal-dependent photon
51043 Image	Exif.Image.Ti meCodes	Byte	The optional TimeCodes tag shall contain an ordered array of time codes. All time codes shall be 8 bytes long and in binary format. The
51044 Image	Exif.Image.Fra meRate	SRational	The optional FrameRate tag shall specify the video frame rate in number of image frames per second, expressed as a signed
51058 Image	Exif.Image.TSt op	SRational	The optional TStop tag shall specify the T-stop of the actual lens, expressed as an unsigned rational number. T-stop is also known as T-
51081 Image	Exif.Image.Re elName	Ascii	The optional ReelName tag shall specify a name for a sequence of images, where each image in the sequence has a unique image
51105 Image	Exif.Image.Ca meraLabel	Ascii	The optional CameraLabel tag shall specify a text label for how the camera is used or assigned in this clip. This tag is similar to
51089 Image	Exif.Image.Ori ginalDefaultFi nalSize	Long	If this file is a proxy for a larger original DNG file, this tag specifics the default final size of the larger original file from which this proxy
51090 Image	Exif.Image.Ori ginalBestQuali tyFinalSize	Long	If this file is a proxy for a larger original DNG file, this tag specifics the best quality final size of the larger original file from which this
51091 Image	Exif.Image.Ori ginalDefaultCr opSize	Long	If this file is a proxy for a larger original DNG file, this tag specifics the DefaultCropSize of the larger original file from which this proxy
51107 Image	Exif.Image.Pro fileHueSatMap Encoding	Long	Provides a way for color profiles to specify how indexing into a 3D HueSatMap is performed during raw conversion. This tag is not
51108 Image	Exif.Image.Pro fileLookTableE ncoding	Long	Provides a way for color profiles to specify how indexing into a 3D LookTable is performed during raw conversion. This tag is not
51109 Image	Exif.Image.Ba selineExposur eOffset	SRational	Provides a way for color profiles to increase or decrease exposure during raw conversion. BaselineExposureOffset specifies
51110 Image	Exif.Image.Def aultBlackRend er	Long	This optional tag in a color profile provides a hint to the raw converter regarding how to handle the black point (e.g., flare subtraction) during

51111 Image	Exif.Image.Ne wRawImageDi gest	Byte	This tag is a modified MD5 digest of the raw image data. It has been updated from the algorithm used to compute the RawImageDigest tag
51112 Image	Exif.Image.Ra wToPreviewG ain	Double	The gain (what number the sample values are multiplied by) between the main raw IFD and the preview IFD containing this tag.
51125 Image	Exif.Image.Def aultUserCrop	Rational	Specifies a default user crop rectangle in relative coordinates. The values must satisfy: 0.0 <= top < bottom <= 1.0, 0.0 <= left < right
51177 Image	Exif.Image.De pthFormat	Short	Specifies the encoding of any depth data in the file. Can be unknown (apart from nearer distances being closer to zero, and farther distances
51178 Image	Exif.Image.De pthNear	Rational	Specifies distance from the camera represented by the zero value in the depth map. 0/0 means unknown.
51179 Image	Exif.Image.De pthFar	Rational	Specifies distance from the camera represented by the maximum value in the depth map. 0/0 means unknown. 1/0 means infinity, which
51180 Image	Exif.Image.De pthUnits	Short	Specifies the measurement units for the DepthNear and DepthFar tags.
51181 Image	Exif.Image.De pthMeasureTy pe	Short	Specifies the measurement geometry for the depth map. Can be unknown, measured along the optical axis, or measured along the
51182 Image	Exif.Image.En hanceParams	Ascii	A string that documents how the enhanced image data was processed.
52525 Image	Exif.Image.Pro fileGainTable Map	Undefined	Contains spatially varying gain tables that can be applied while processing the image as a starting point for user adjustments.
52526 Image	Exif.Image.Se manticName	Ascii	A string that identifies the semantic mask.
52528 Image	Exif.Image.Se manticInstanc eID	Ascii	A string that identifies a specific instance in a semantic mask.
52529 Image	Exif.Image.Cal ibrationIllumin ant3	Short	The illuminant used for an optional third set of color calibration tags (ColorMatrix3, CameraCalibration3, ReductionMatrix3). The legal values
52530 Image	Exif.Image.Ca meraCalibratio n3	SRational	CameraCalibration3 defines a calibration matrix that transforms reference camera native space values to individual camera native
52531 Image	Exif.Image.Col orMatrix3	SRational	ColorMatrix3 defines a transformation matrix that converts XYZ values to reference camera native color space values, under the

52532 Image	Exif.Image.For wardMatrix3	SRational	This tag defines a matrix that maps white balanced camera colors to XYZ D50 colors.
52533 Image	Exif.Image.Illu minantData1	Undefined	When the CalibrationIlluminant1 tag is set to 255 (Other), then the IlluminantData1 tag is required and specifies the data for the first
52534 Image	Exif.Image.Illu minantData2	Undefined	When the CalibrationIlluminant2 tag is set to 255 (Other), then the IlluminantData2 tag is required and specifies the data for the second
52535 Image	Exif.Image.Illu minantData3	Undefined	When the CalibrationIlluminant3 tag is set to 255 (Other), then the IlluminantData3 tag is required and specifies the data for the third
52536 Image	Exif.Image.Ma skSubArea	Long	This tag identifies the crop rectangle of this IFD's mask, relative to the main image.
52537 Image	Exif.Image.Pro fileHueSatMap Data3	Float	This tag contains the data for the third hue/saturation/value mapping table. Each entry of the table contains three 32-bit IEEE floating-
52538 Image	Exif.Image.Re ductionMatrix 3	SRational	ReductionMatrix3 defines a dimensionality reduction matrix for use as the first stage in converting color camera native space values to
52539 Image	Exif.Image.RG BTables	Undefined	This tag specifies color transforms that can be applied to masked image regions. Color transforms are specified using RGB-to-RGB
33434 Photo	Exif.Photo.Exp osureTime	Rational	Exposure time, given in seconds (sec).
33437 Photo	Exif.Photo.FN umber	Rational	The F number.
34850 Photo	Exif.Photo.Exp osureProgram	Short	The class of the program used by the camera to set exposure when the picture is taken.
34852 Photo	Exif.Photo.Spe ctralSensitivity	Ascii	Indicates the spectral sensitivity of each channel of the camera used. The tag value is an ASCII string compatible with the standard
34855 Photo	Exif.Photo.ISO SpeedRatings	Short	Indicates the ISO Speed and ISO Latitude of the camera or input device as specified in ISO 12232.
34856 Photo	Exif.Photo.OE CF	Undefined	Indicates the Opto-Electoric Conversion Function (OECF) specified in ISO 14524. <OECF> is the relationship between the
34864 Photo	Exif.Photo.Sen sitivityType	Short	The SensitivityType tag indicates which one of the parameters of ISO12232 is the PhotographicSensitivity tag.

34865	Photo	Exif.Photo.Sta ndardOutputS ensitivity	Long	This tag indicates the standard output sensitivity value of a camera or input device defined in ISO 12232. When recording this tag, the
34866	Photo	Exif.Photo.Rec ommendedEx posureIndex	Long	This tag indicates the recommended exposure index value of a camera or input device defined in ISO 12232. When
34867	Photo	Exif.Photo.ISO Speed	Long	This tag indicates the ISO speed value of a camera or input device that is defined in ISO 12232. When recording this tag, the
34868	Photo	Exif.Photo.ISO SpeedLatitude yyy	Long	This tag indicates the ISO speed latitude yyy value of a camera or input device that is defined in ISO 12232. However, this tag shall not
34869	Photo	Exif.Photo.ISO SpeedLatitude zzz	Long	This tag indicates the ISO speed latitude zzz value of a camera or input device that is defined in ISO 12232. However, this tag shall not
36864	Photo	Exif.Photo.Exif Version	Undefined	The version of this standard supported. Nonexistence of this field is taken to mean nonconformance to the standard.
36867	Photo	Exif.Photo.Dat eTimeOriginal	Ascii	The date and time when the original image data was generated. For a digital still camera the date and time the picture was taken are
36868	Photo	Exif.Photo.Dat eTimeDigitize d	Ascii	The date and time when the image was stored as digital data.
36880	Photo	Exif.Photo.Off setTime	Ascii	Time difference from Universal Time Coordinated including daylight saving time of DateTime tag.
36881	Photo	Exif.Photo.Off setTimeOrigin al	Ascii	Time difference from Universal Time Coordinated including daylight saving time of DateTimeOriginal tag.
36882	Photo	Exif.Photo.Off setTimeDigitiz ed	Ascii	Time difference from Universal Time Coordinated including daylight saving time of DateTimeDigitized tag.
37121	Photo	Exif.Photo.Co mponentsConf iguration	Undefined	Information specific to compressed data. The channels of each component are arranged in order from the 1st component to the 4th.
37122	Photo	Exif.Photo.Co mpressedBits PerPixel	Rational	Information specific to compressed data. The compression mode used for a compressed image is indicated in unit bits per pixel.
37377	Photo	Exif.Photo.Shu tterSpeedValu e	SRational	Shutter speed. The unit is the APEX (Additive System of Photographic Exposure) setting.
37378	Photo	Exif.Photo.Ape rtureValue	Rational	The lens aperture. The unit is the APEX value.

37379 Photo	Exif.Photo.BrightnessValue	SRational		The value of brightness. The unit is the APEX value. Ordinarily it is given in the range of -99.99 to 99.99.
37380 Photo	Exif.Photo.ExposureBiasValue	SRational		The exposure bias. The units is the APEX value. Ordinarily it is given in the range of -99.99 to 99.99.
37381 Photo	Exif.Photo.MaxApertureValue	Rational		The smallest F number of the lens. The unit is the APEX value. Ordinarily it is given in the range of 00.00 to 99.99, but it is not limited
37382 Photo	Exif.Photo.SubjectDistance	Rational		The distance to the subject, given in meters.
37383 Photo	Exif.Photo.MeteringMode	Short		The metering mode.
37384 Photo	Exif.Photo.LightSource	Short		The kind of light source.
37385 Photo	Exif.Photo.Flash	Short		This tag is recorded when an image is taken using a strobe light (flash).
37386 Photo	Exif.Photo.FocalLength	Rational		The actual focal length of the lens, in mm. Conversion is not made to the focal length of a 35 mm film camera.
37396 Photo	Exif.Photo.SubjectArea	Short		This tag indicates the location and area of the main subject in the overall scene.
37500 Photo	Exif.Photo.MakerNote	Undefined		A tag for manufacturers of Exif writers to record any desired information. The contents are up to the manufacturer.
37510 Photo	Exif.Photo.UserComment	Comment		A tag for Exif users to write keywords or comments on the image besides those in <ImageDescription>, and without
37520 Photo	Exif.Photo.SubSecTime	Ascii		A tag used to record fractions of seconds for the <DateTime> tag.
37521 Photo	Exif.Photo.SubSecTimeOriginal	Ascii		A tag used to record fractions of seconds for the <DateTimeOriginal> tag.
37522 Photo	Exif.Photo.SubSecTimeDigitized	Ascii		A tag used to record fractions of seconds for the <DateTimeDigitized> tag.
37888 Photo	Exif.Photo.Temperature	SRational		Temperature as the ambient situation at the shot, for example the room temperature where the photographer was holding the

37889 Photo	Exif.Photo.Humidity	Rational	Humidity as the ambient situation at the shot, for example the room humidity where the photographer was holding the camera. The unit is
37890 Photo	Exif.Photo.Pressure	Rational	Pressure as the ambient situation at the shot, for example the room atmosphere where the photographer was holding the
37891 Photo	Exif.Photo.WaterDepth	SRational	Water depth as the ambient situation at the shot, for example the water depth of the camera at underwater photography. The unit is
37892 Photo	Exif.Photo.Acceleration	Rational	Acceleration (a scalar regardless of direction) as the ambient situation at the shot, for example the driving acceleration of the vehicle which
37893 Photo	Exif.Photo.CameraElevationAngle	SRational	Elevation/depression. angle of the orientation of the camera(imaging optical axis) as the ambient situation at the shot. The unit is
40960 Photo	Exif.Photo.FlashpixVersion	Undefined	The FlashPix format version supported by a FPXR file.
40961 Photo	Exif.Photo.ColorSpace	Short	The color space information tag is always recorded as the color space specifier. Normally sRGB is used to define the color space based on the
40962 Photo	Exif.Photo.PixelXDimension	Long	Information specific to compressed data. When a compressed file is recorded, the valid width of the meaningful image must be
40963 Photo	Exif.Photo.PixelYDimension	Long	Information specific to compressed data. When a compressed file is recorded, the valid height of the meaningful image must be
40964 Photo	Exif.Photo.RelatedSoundFile	Ascii	This tag is used to record the name of an audio file related to the image data. The only relational information recorded here is the
40965 Photo	Exif.Photo.InteroperabilityTag	Long	Interoperability IFD is composed of tags which stores the information to ensure the Interoperability and pointed by the following tag located
41483 Photo	Exif.Photo.FlashEnergy	Rational	Indicates the strobe energy at the time the image is captured, as measured in Beam Candle Power Seconds (BCPS).
41484 Photo	Exif.Photo.SpatialFrequencyResponse	Undefined	This tag records the camera or input device spatial frequency table and SFR values in the direction of image width, image height, and
41486 Photo	Exif.Photo.FocalPlaneXResolution	Rational	Indicates the number of pixels in the image width (X) direction per <FocalPlaneResolutionUnit> on the camera focal plane.
41487 Photo	Exif.Photo.FocalPlaneYResolution	Rational	Indicates the number of pixels in the image height (V) direction per <FocalPlaneResolutionUnit> on the camera focal plane.

41488 Photo	Exif.Photo.Foc alPlaneResolu tionUnit	Short	Indicates the unit for measuring <FocalPlaneXResolution> and <FocalPlaneYResolution>. This value is the same as the
41492 Photo	Exif.Photo.Sub jectLocation	Short	Indicates the location of the main subject in the scene. The value of this tag represents the pixel at the center of the main subject relative
41493 Photo	Exif.Photo.Exp osureIndex	Rational	Indicates the exposure index selected on the camera or input device at the time the image is captured.
41495 Photo	Exif.Photo.Sen singMethod	Short	Indicates the image sensor type on the camera or input device.
41728 Photo	Exif.Photo.File Source	Undefined	Indicates the image source. If a DSC recorded the image, this tag value of this tag always be set to 3, indicating that the image was
41729 Photo	Exif.Photo.Sce neType	Undefined	Indicates the type of scene. If a DSC recorded the image, this tag value must always be set to 1, indicating that the image was
41730 Photo	Exif.Photo.CF APattern	Undefined	Indicates the color filter array (CFA) geometric pattern of the image sensor when a one-chip color area sensor is used. It does not apply to
41985 Photo	Exif.Photo.Cus tomRendered	Short	This tag indicates the use of special processing on image data, such as rendering geared to output. When special processing is performed,
41986 Photo	Exif.Photo.Exp osureMode	Short	This tag indicates the exposure mode set when the image was shot. In auto-bracketing mode, the camera shoots a series of frames
41987 Photo	Exif.Photo.Whi teBalance	Short	This tag indicates the white balance mode set when the image was shot.
41988 Photo	Exif.Photo.Digi talZoomRatio	Rational	This tag indicates the digital zoom ratio when the image was shot. If the numerator of the recorded value is 0, this indicates that digital zoom
41989 Photo	Exif.Photo.Foc alLengthIn35 mmFilm	Short	This tag indicates the equivalent focal length assuming a 35mm film camera, in mm. A value of 0 means the focal length is unknown. Note
41990 Photo	Exif.Photo.Sce neCaptureTyp e	Short	This tag indicates the type of scene that was shot. It can also be used to record the mode in which the image was shot. Note that this
41991 Photo	Exif.Photo.Gai nControl	Short	This tag indicates the degree of overall image gain adjustment.
41992 Photo	Exif.Photo.Con trast	Short	This tag indicates the direction of contrast processing applied by the camera when the image was shot.

41993 Photo	Exif.Photo.Saturation	Short		This tag indicates the direction of saturation processing applied by the camera when the image was shot.
41994 Photo	Exif.Photo.Sharpness	Short		This tag indicates the direction of sharpness processing applied by the camera when the image was shot.
41995 Photo	Exif.Photo.DeviceSettingDescription	Undefined		This tag indicates information on the picture-taking conditions of a particular camera model. The tag is used only to indicate the picture-
41996 Photo	Exif.Photo.SubjectDistanceRange	Short		This tag indicates the distance to the subject.
42016 Photo	Exif.Photo.ImageUniqueID	Ascii		This tag indicates an identifier assigned uniquely to each image. It is recorded as an ASCII string equivalent to hexadecimal notation
42032 Photo	Exif.Photo.CameraOwnerName	Ascii		This tag records the owner of a camera used in photography as an ASCII string.
42033 Photo	Exif.Photo.BodySerialNumber	Ascii		This tag records the serial number of the body of the camera that was used in photography as an ASCII string.
42034 Photo	Exif.Photo.LensSpecification	Rational		This tag notes minimum focal length, maximum focal length, minimum F number in the minimum focal length, and minimum F
42035 Photo	Exif.Photo.LensMake	Ascii		This tag records the lens manufactor as an ASCII string.
42036 Photo	Exif.Photo.LensModel	Ascii		This tag records the lens's model name and model number as an ASCII string.
42037 Photo	Exif.Photo.LensSerialNumber	Ascii		This tag records the serial number of the interchangeable lens that was used in photography as an ASCII string.
42080 Photo	Exif.Photo.CompositeImage	Short		Indicates whether the recorded image is a composite image or not.
42081 Photo	Exif.Photo.SourceImageNumberOfCompositeImage	Short		Indicates the number of the source images (tentatively recorded images) captured for a composite Image.
42082 Photo	Exif.Photo.SourceExposureTimesOfCompositeImage	Undefined		For a composite image, records the parameters relating exposure time of the exposures for generating the said composite image, such as
42240 Photo	Exif.Photo.Gamma	Rational		Indicates the value of coefficient gamma. The formula of transfer function used for image reproduction is expressed as

1 Iop	Exif.Iop.Intero perabilityIndex	Ascii	Indicates the identification of the Interoperability rule. Use "R98" for stating ExifR98 Rules. Four bytes used including the termination code
2 Iop	Exif.Iop.Intero perabilityVersi on	Undefined	Interoperability version
4096 Iop	Exif.Iop.Relate dImageFileFor mat	Ascii	File format of image file
4097 Iop	Exif.Iop.Relate dImageWidth	Long	Image width
4098 Iop	Exif.Iop.Relate dImageLength	Long	Image height
0 GPSInfo	Exif.GPSInfo.G PSVersionID	Byte	Indicates the version of <GPSInfoIFD>. The version is given as 2.0.0.0. This tag is mandatory when <GPSInfo> tag is present.
1 GPSInfo	Exif.GPSInfo.G PSLatitudeRef	Ascii	Indicates whether the latitude is north or south latitude. The ASCII value 'N' indicates north latitude, and 'S' is south latitude.
2 GPSInfo	Exif.GPSInfo.G PSLatitude	Rational	Indicates the latitude. The latitude is expressed as three RATIONAL values giving the degrees, minutes, and seconds, respectively. When
3 GPSInfo	Exif.GPSInfo.G PSLongitudeR ef	Ascii	Indicates whether the longitude is east or west longitude. ASCII 'E' indicates east longitude, and 'W' is west longitude.
4 GPSInfo	Exif.GPSInfo.G PSLongitude	Rational	Indicates the longitude. The longitude is expressed as three RATIONAL values giving the degrees, minutes, and seconds,
5 GPSInfo	Exif.GPSInfo.G PSAltitudeRef	Byte	Indicates the altitude used as the reference altitude. If the reference is sea level and the altitude is above sea level, 0 is given. If the altitude is
6 GPSInfo	Exif.GPSInfo.G PSAltitude	Rational	Indicates the altitude based on the reference in GPSAltitudeRef. Altitude is expressed as one RATIONAL value. The reference unit
7 GPSInfo	Exif.GPSInfo.G PSTimeStamp	Rational	Indicates the time as UTC (Coordinated Universal Time). <TimeStamp> is expressed as three RATIONAL values giving the hour,
8 GPSInfo	Exif.GPSInfo.G PSSatellites	Ascii	Indicates the GPS satellites used for measurements. This tag can be used to describe the number of satellites, their ID number, angle of
9 GPSInfo	Exif.GPSInfo.G PSStatus	Ascii	Indicates the status of the GPS receiver when the image is recorded. "A" means measurement is in progress, and "V" means the

10	GPSInfo	Exif.GPSInfo.G PSMeasureMo de	Ascii	Indicates the GPS measurement mode. "2" means two-dimensional measurement and "3" means three-dimensional measurement is in
11	GPSInfo	Exif.GPSInfo.G PSDOP	Rational	Indicates the GPS DOP (data degree of precision). An HDOP value is written during two-dimensional measurement, and PDOP during
12	GPSInfo	Exif.GPSInfo.G PSSpeedRef	Ascii	Indicates the unit used to express the GPS receiver speed of movement. "K" "M" and "N" represents kilometers per hour,
13	GPSInfo	Exif.GPSInfo.G PSSpeed	Rational	Indicates the speed of GPS receiver movement.
14	GPSInfo	Exif.GPSInfo.G PSTrackRef	Ascii	Indicates the reference for giving the direction of GPS receiver movement. "T" denotes true direction and "M" is magnetic
15	GPSInfo	Exif.GPSInfo.G PSTrack	Rational	Indicates the direction of GPS receiver movement. The range of values is from 0.00 to 359.99.
16	GPSInfo	Exif.GPSInfo.G PSImgDirectio nRef	Ascii	Indicates the reference for giving the direction of the image when it is captured. "T" denotes true direction and "M" is magnetic direction.
17	GPSInfo	Exif.GPSInfo.G PSImgDirectio n	Rational	Indicates the direction of the image when it was captured. The range of values is from 0.00 to 359.99.
18	GPSInfo	Exif.GPSInfo.G PSMapDatum	Ascii	Indicates the geodetic survey data used by the GPS receiver. If the survey data is restricted to Japan, the value of this tag is "TOKYO" or
19	GPSInfo	Exif.GPSInfo.G PSDestLatitud eRef	Ascii	Indicates whether the latitude of the destination point is north or south latitude. The ASCII value "N" indicates north latitude, and "S" is
20	GPSInfo	Exif.GPSInfo.G PSDestLatitud e	Rational	Indicates the latitude of the destination point. The latitude is expressed as three RATIONAL values giving the degrees, minutes,
21	GPSInfo	Exif.GPSInfo.G PSDestLongitu deRef	Ascii	Indicates whether the longitude of the destination point is east or west longitude. ASCII "E" indicates east longitude, and "W" is west
22	GPSInfo	Exif.GPSInfo.G PSDestLongitu de	Rational	Indicates the longitude of the destination point. The longitude is expressed as three RATIONAL values giving the degrees, minutes,
23	GPSInfo	Exif.GPSInfo.G PSDestBearin gRef	Ascii	Indicates the reference used for giving the bearing to the destination point. "T" denotes true direction and "M" is magnetic direction.
24	GPSInfo	Exif.GPSInfo.G PSDestBearin g	Rational	Indicates the bearing to the destination point. The range of values is from 0.00 to 359.99.

25	GPSInfo	Exif.GPSInfo.G PSDestDistan ceRef	Ascii	Indicates the unit used to express the distance to the destination point. "K", "M" and "N" represent kilometers, miles and nautical
26	GPSInfo	Exif.GPSInfo.G PSDestDistan ce	Rational	Indicates the distance to the destination point.
27	GPSInfo	Exif.GPSInfo.G PSProcessing Method	Comment	A character string recording the name of the method used for location finding. The string encoding is defined using the same
28	GPSInfo	Exif.GPSInfo.G PSAreaInform ation	Comment	A character string recording the name of the GPS area.The string encoding is defined using the same scheme as UserComment.
29	GPSInfo	Exif.GPSInfo.G PSDateStamp	Ascii	A character string recording date and time information relative to UTC (Coordinated Universal Time). The format is "YYYY:MM:DD.".
30	GPSInfo	Exif.GPSInfo.G PSDifferential	Short	Indicates whether differential correction is applied to the GPS receiver.
31	GPSInfo	Exif.GPSInfo.G PSHPositionin gError	Rational	This tag indicates horizontal positioning errors in meters.
45056	MpfInfo	Exif.MpfInfo.M PFVersion	Ascii	MPF Version
45057	MpfInfo	Exif.MpfInfo.M PFNumberOfI mages	Undefined	MPF Number of Images
45058	MpfInfo	Exif.MpfInfo.M PFImageList	Ascii	MPF Image List
45059	MpfInfo	Exif.MpfInfo.M PFImageUIDLi st	Long	MPF Image UID List
45060	MpfInfo	Exif.MpfInfo.M PFTotalFrame s	Long	MPF Total Frames
45313	MpfInfo	Exif.MpfInfo.M PFIndividualN um	Long	MPF Individual Num
45569	MpfInfo	Exif.MpfInfo.M PFPanOrientat ion	Long	MPFPanOrientation
45570	MpfInfo	Exif.MpfInfo.M PFPanOverlap H	Long	MPF Pan Overlap Horizonal

45571	MpfInfo	Exif.MpfInfo.M PFPanOverlap V	Long	MPF Pan Overlap Vertical
45572	MpfInfo	Exif.MpfInfo.M PFBaseViewp ointNum	Long	MPF Base Viewpoint Number
45573	MpfInfo	Exif.MpfInfo.M PFConvergenc eAngle	Long	MPF Convergence Angle
45574	MpfInfo	Exif.MpfInfo.M PFBaselineLen gth	Long	MPF Baseline Length
45575	MpfInfo	Exif.MpfInfo.M PFVerticalDive rgence	Long	MPF Vertical Divergence
45576	MpfInfo	Exif.MpfInfo.M PFAxisDistanc eX	Long	MPF Axis Distance X
45577	MpfInfo	Exif.MpfInfo.M PFAxisDistanc eY	Long	MPF Axis Distance Y
45578	MpfInfo	Exif.MpfInfo.M PFAxisDistanc eZ	Long	MPF Axis Distance Z
45579	MpfInfo	Exif.MpfInfo.M PFYawAngle	Long	MPF Yaw Angle
45580	MpfInfo	Exif.MpfInfo.M PFPitchAngle	Long	MPF Pitch Angle
45581	MpfInfo	Exif.MpfInfo.M PFRollAngle	Long	MPF Roll Angle