

# **TIFF InteropAnalyzer Test Specification**

**Version 1.0**

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## 1. Overview

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TIFF is a mature and widely adopted image file format. Typical usage for this format includes archiving, scanning, prepress, and faxing documents. TIFF's most important features are as follows:

- The ability to describe images in a variety of color spaces using various compression schemes
- The ability to store multiple images in the same file
- Images are stored in strips allowing rapid access to different sections of the image.
- A tag based scheme that enables a very extensible architecture

Version 6.0 of the TIFF standard defines a set of baseline capabilities for the TIFF image format, plus 13 optional TIFF extensions including things such as CCITT Bilevel Encodings, LZW Compression, Tiled Images, CMYK Images, and JPEG Compression.

In addition to these optional extensions, numerous organizations and companies have defined extensions to TIFF. A sample of these extensions include TIFF Class F for fax images, GeoTIFF for mapping applications, TIFF/IT for the prepress market, and EXIF for digital cameras.

All of these extensions to the baseline TIFF capabilities create an environment where numerous flavors of TIFF exist in the real world. Determining whether a device capable of rendering a TIFF image is interoperable with the wide diversity of TIFF files in the real world can be a significant challenge.

QualityLogic has developed a systematic approach to this testing problem through the analysis of TIFF documents in the real world, as well as the development of TIFF files from a selection of available TIFF creation and editing software packages. The focus of this test suite is on TIFF files that are likely to be sent to a printing device using the "Tiff Direct printing" capabilities supported by most wide format RIPs and Laser printers containing adapter cards that enable this capability.

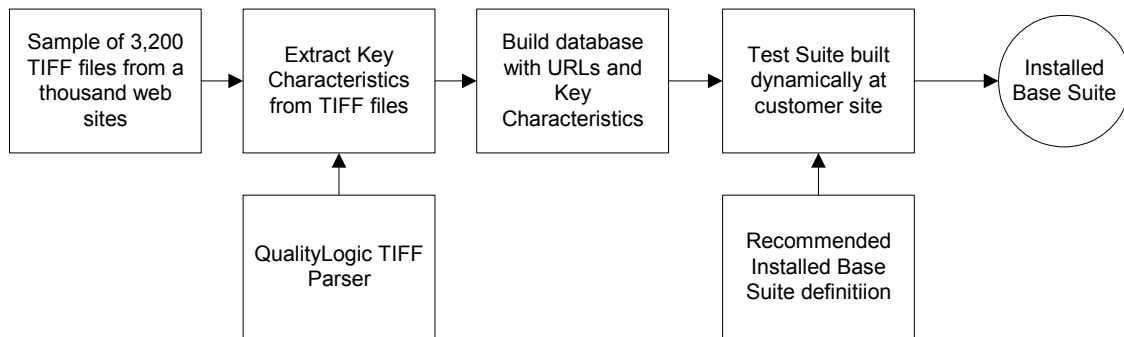
This test suite provides a cost-effective way for printer RIP manufacturers to test their TIFF rendering implementations. The balance of this document describes the architecture of the TIFF InteropAnalyzer Test Suite.

A separate document, the TIFF InteropAnalyzer User Manual, documents the installation of the test suite and the use of the Query Builder utility program.

## 2. Test Architecture

In order to test TIFF, you must deal with four separate and distinct challenges:

1. First, there is a wide diversity of TIFF files already in circulation both on the Internet and on corporate intranets. A printer manufacturer's TIFF implementation must be tested with a representative sampling of these files. We refer to this type of test as the Installed Base Suite. This suite is created by sampling approximately 1,000 web sites that contain downloadable TIFF files. From these sites we download and analyzed approximately 3,200 representative TIFF files using a parser developed by QualityLogic, which can identify approximately 140 Key Characteristics of the TIFF file. Links to these files are placed in a database, along with each TIFF file's Key Characteristics. A utility program called the Query Builder allows users to download the TIFF Files from the Internet
2. Second, the large sample of files from the Internet must be reduced to a manageable subset for testing. Using the smallest set analysis capability provided with this product, a recommended subset of approximately 150 TIFF files was selected based upon their key characteristics. Figure 1 illustrates the test methodology for the Installed Base Suite.

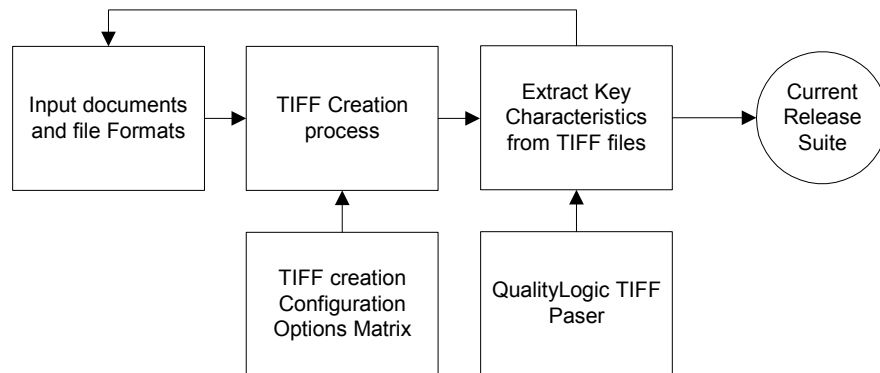


**Figure 1 – Installed Base Suite**

3. The Third challenge is to ensure that the printer's TIFF implementation will function correctly with the latest applications and TIFF creation tools on the market. Although TIFF is a mature file format, new releases of creation and editing software for TIFF create the potential for interoperability problems. Our approach to this testing requirement is to build a custom suite of TIFF test files based on newest releases of software/hardware tools that allow you to create or edit TIFF files. We refer to this type of test as the Current Release Suite.

The Current Release Suite is created by identifying a small set of source documents and file formats from which the TIFF files will be created. These documents are transformed into TIFF files using a selection of TIFF

creation tools or application options, using a variety of configuration settings that may influence the TIFF file characteristics. The files are analyzed using the QualityLogic TIFF Parser noted earlier to validate the range of Key Characteristics in the test files created for this suite. Figure 2 illustrates the test methodology used for the Current Release Suite.



**Figure 2 – Current Release Suite**

- The final challenge relative to testing TIFF is determining if the output produced by the printer or RIP under test is correct. While many large format printers support direct TIFF printing, there is no de facto standard for rendering these files. QualityLogic elected to use output produced by printing from Adobe PhotoShop through a HP PostScript or PCL driver as the baseline reference for TIFF Output. Hardcopy output is provided with the test suite for the Current Release Suite files.

The balance of this document provides detailed implementation specifications for the two suites that make up the TIFF InteropAnalyzer product.

### 3. Installed Base Suite

The intent of the installed base is to define a set of representative test files drawn from a broad sampling of the real world.

#### Sampling the Real World

The Installed Base Suite is based on a random sample of a thousand web sites. The process of building a representative set of TIFF files is accomplished as follows.

- We used Google to identify all web sites that contain the words "Download tif" or "Download TIFF". This results in a list of a little over 1000 web sites.

- We use a multithreaded application to scan approximately 250,000 links on these pages, resulting in a list of over 3,200 tiff files.
- The identified TIFF files are then downloaded.

### **Analysis of Key Characteristics**

Next, each of the 3,200 files is run through the QualityLogic TIFF Parser, which identifies approximately 140 key characteristics in each file. The data from parser analysis is placed in an SQL database.

Refer to section 5 for a detail listing of characteristics supported by the QualityLogic TIFF Parser and the frequency of occurrence in the test files provided with this product.

### **Recommended Subset**

From this database of characteristics, a recommended set of approximately 150 files has been identified based on the diversity of key characteristics in each file. The recommended subset is optimized to maximize the widest range of attribute coverage over the smallest set of files. The selection of files for the recommended subset was accomplished by using the Smallest Set utility contained in the Query Builder, with diversity set to 100% and no active query (i.e. all files selected). For more information on smallest set analysis, refer to the TIFF InteropAnalyzer User Manual.

### **Deliverables for Installed Base Suite**

Deliverables to the customer for the Installed Base Suite will include the following:

1. A database that contains key characteristics for all 3,200 TIFF files sampled from the Internet
2. The Query Builder utility program, which will allow the user to download the recommended subset. This utility also includes robust capability to mine the database for files with specific characteristics to facilitate the testing process (refer to the TIFF InteropAnalyzer User Manual).
3. QualityLogic also offers a free download service for customers who do not wish to download their own Installed Base files.

## **4. Current Release Suite**

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The composition of the Current Release suite is defined by the following variables:

- A set of source documents created using popular image editing applications.
- A list of TIFF creation and editing programs
- A list of TIFF creation utility features to be exercised

The Current Release Suite consists of 100 test files. This small number of files relative to the variables involved will require each file to fulfill multiple roles in the requirements outlined for this suite.

### TIFF Creation Methods

There are four basic ways in which a document is transformed into a TIFF file.

- **Export/Save to TIFF** – The application has a menu option that allows the user create an original image, and then transform its internal representation of the document into a TIFF file. Adobe Photoshop and CorelDraw are good examples of embedded TIFF creators.
- **Printer Driver to TIFF** - A printer driver that transforms the operating system's device independent representation of the page into a TIFF file. Products like the Office Document Image Driver are typical of this type of this solution, which translates GDI to TIFF.
- **Scan to TIFF** – This is a transform of a scanned bitmap to TIFF using a driver provided by a scanner manufacturer such as Microtek
- **File to TIFF** – There are countless utilities whose primary purpose is to transform one image type to another. ThumbsPlus is a good example, which will transform a variety of image formats.

### Source Applications and Transforms

The following table documents applications and file transforms that will be exercised with each of the available TIFF creation and editing tools used as part of this suite. All applications below will be Windows XP applications in the most current release available at the time of test development.

In general, we created five TIFF files from each application. Documents are typically letter size or smaller, with a few exception of larger document. Both grayscale and color images where created, assuming the application supported both formats.

Selection of these applications was based upon their appearance in our real-world sampling of TIFF files and their general popularity business environment.

Input Source	Export/Save to TIFF	Printer Driver to TIFF	Scan to TIFF	File to TIFF
Acrobat 7.0 beta	•			
Illustrator CS	•			
Image Ready CS	•			
PhotoShop CS	•			
CorelDraw 12	•			
PhotoPaint 12	•			
InfranView 3.92				•
Word 2003 (1)		•		
Excel 2003 (1)		•		
Project 2003 (1)		•		
PowerPoint 2003	•			
Visio 2003	•			
Paint 5.1	•			
PaintShop Pro 9	•			
Publisher 2003	•			
ThumbsPlus 7				•
HP ScanJet 4670 v4.1			•	
CanoScan 9900F v5			•	
MicroTek ScanMaker Pro 5			•	
ImageIt 10 v1.61		•		

(1) Via Microsoft's Office image writer driver

### TIFF File Creation Preferences

Each of the applications, utilities and drivers that create TIFF files have options that will impact the exact content of the TIFF file produced. The first step in the development process was to identify each of the application options the might influence the content of the TIFF file. Through an iterative process of creating TIFF files and parsing them to examine the content, we were able identify a reasonable subset of application setting which were used to create the Current Release Suite. The following table reflects the specific application settings used to create each file in the suite.

Acrobat Files				TA1BSJUA	TA1BCTUB	TA1BHFUC	TA1BCZUD	TA1GPZCE	TA1RCJUF
	monochrome								
		CCITT G3		•					
		CCITT G4			•				
		ZIP					•		
	Grayscale								
		ZIP						•	
		JPEG (quality medium)	•						
	Color								
		JPEG (quality medium)							•
	Color Management								
		RGB	Embed Profile	•				•	•
			Off	•					
		Grayscale	Off	•					

Illustrator Files				TB1RPNFA	TB1CHPLFB	TB1GPLUC	TB1CCLLD	TB1RSNFE	TB1RCLCF
Export Options	Color Model								
		RGB		•				•	•
		CMYK			•		•		
		GrayScale				•			
	Resolution								
		Screen						•	
		Medium	•						
		High				300			
		Other	amount		600		250		72
	Anti-Alias			•	•		•		
	LZW			•	•	•	•		•
	Byte Order								
		IBM		•	•		•		
		Mac				•		•	•

Image Ready Files				TC1RSNCA	TC1RCLCB	TC1RPZFC	TC1RHJCD	TC1RSNLE		
Tif Options	compression							•		
		packbits		•						
		lzw			•					
		zip				•				
		jpg					•			
		amount	small > large 1-C				3			

PhotoShop Files				TD1BSNFA	TD1GPLLB	TD1RPJLC	TD1RCZCD	TD1CHJFE	TD1LSZLF	TD1LPLCG
Save Options	alpha			N	N	Y	Y	N	Y	Y
	layers			N	Y	Y	Y	Y	Y	Y
	spot			N	N	N	N	Y	N	Y
	annotations			N	N	Y	Y	Y	N	N
	Profile			N	Y	N	Y	Y	N	Y
Tif Options	compression									
		none		•						
		lzw			•					•
		zip				•	•		•	
		jpg						•		
		amount	small > large 1-C					B		
	Byte order									
		ibm		•	•		•	•		•
		mac				•			•	
	save Image Pryamid			N	•	N	•	•	•	•
	Save Transparency			N	•	N	•	•	•	N
	Layer Compression									
		rle						•	•	•
		zip			•		•			
		discard layers		•		•				

Corel Draw Files			TE1BCTUA	TE1GSPLB	TE1RPHFC	TE1CPLUD	TE1CHLUE	TE1PCPLF	TE1BCFLG
	Compression type								
		LZW				•	•		
		PackBits		•				•	
		Huffman			•				
		CCITT G3 1Dim	•						
		CCITT G4							•
	Resolution								
		amount	150	96	300	300	600	400	400
	Color mode								
		B & W grayscale	•	•					•
		paletted 8 bit						•	
		RGB			•				
		CMYK				•	•		
	Anti-aliasing			•	•	•		•	
		Dithered	•		•	•		•	•
	Transparent Background			•	•	•		•	
	Apply ICC profile			•	•	•			
	Maintain aspect ratio					•			
	Maintain Layers					•			

PhotoPaint Files			TF1BSNLA	TF1GCLLB	TF1RPNLC	TF1CHLFD	TF1RCLCE	TF1PPPLF
	Compression Type							
		Uncompressed	•		•			
		LZW Compressed		•		•	•	
		Pack Bits						•

<b>InfranView Files</b>				TG1BSLCA	TG1GSPCB	TG3RCZCC	TG3RCLCD	TG1RCNCF			
Tif Options	compression										
		lzw					•				
		packbits		•	•						
		zip				•					

<b>Word Files</b>	Tiff Mono Fax			TH1BSFUA	TH2BCFUB	TH6BPFUC	THPBSFUD				
	Standard			•			•				
	Fine				•						
	Superfine					•					

<b>Excel Files</b>	Tiff Mono Fax			T11BSFUA	T1CBCFCB	T15BPFUC					
	Standard			•							
	Fine				•						
	Superfile					•					

<b>Project Files</b>	Tiff Mono Fax			TJ3BSFUA	TJ2BCFUB	TJ5BPFUC					
	Standard			•							
	Fine				•						
	Superfile					•					

PowerPoint Files				TK1RSLUA	TK1RSLUB	TK1RSLUB				
	No Options Available									

Visio Files				TL1RSLCA	TL1PSLCB	TL1BHFUC	TL1GSNUD	TL1BCTCE	TL1RPLCF	
Tif Options	compression									
		none					•			
		group 3						•		
		lzw		•	•				•	
		packbits								
		modified Hoffman				•				
	Color format									
		bi level				•		•		
		24 bit color		•						
		16 colors			•		•			
			color reduction							
		choose one	adaptive		•					
			diffusion			•		•		
			halftone							
		256 color								
		choose one	diffusion						•	
			adaptive				•			
	Background color									
		windows palette or RGB							•	
	Transformations									
		none		•		•				
		rotate left							•	
	Resolution									
		Screen		•	•					
		Prints							•	
		source				•				
		custom	amount					•		
			piXels, CM, In	iN	iN	iN				

				TM1RSLCA	TM1GSLCB	TM1RCLCC	TM1PSLCD			
<b>Paint Files</b>										
	No Options Available									

				TN1BPHCA	TN1RCNCB	TN1RPLCC	TN1CPLLD	TN1BSTLE		
<b>PaintShop Pro Files</b>										
	Compression type									
		Fax CCITT G3						•		
		Huffman		•						
		LZW				•	•			
		uncompressed			•					
	Color channel									
		RGB			•	•				
		CMYK					•			

				TO1RSLUA	TO1RCLUB	TO1RPLCC	TO1RCLCE			
<b>Publisher Files</b>										
	Resolution	dpi								
		96		•						
		150			•		•			
		300				•				

ThumbsPlus Files			TP1RSLCA	TP1BSLLB	TP1RPZCC	TP1PCPFD	TP1BPFCE		
	Compression								
		LZW	•	•		•			
		PackBits							
		Zip			•				
	jpeg quality	amount	20 > 100 1-C						
		CCITT G4					•		
	Resolution								
		amount	96	72	300	200	300		
		per Inch/ per centimeter							
	comments		Y	N	N	N	N		

HP ScanJet 4670 Files			TQ1RPNCA	TQ1GCLUB	TQ1RHNCC	TQ1RPLCD	TQ1RCLCE	TQ1BSLCF	
	Compression				•				
		Tiff Image	•						
		Tiff Image compressed		•		•	•	•	
	Resolution								
	75 > 9600	amount	0	200	600	300	1200	200	
	bitdepth	16/8			16				
	Output Type								
		Millions of Colors	•		•		•		
		256 8bit							
		256 Web palette				•			
		256 Grayscale		•					
		Black & White						•	

Canon CanoScan 9900F Files			TR1GCNCA	TR1CCNCB	TR1CCNCC	TR1BSNUD	TR1BSNUE		
	Color Mode								
		black & white					•		
		Grayscale	•						
		color		•					
		color 48 bit (not supported?)			•				
		teXt enhanced				•			
	Resolution								
		amount							
		50							
		100				•	•		
		200	•						
		400		•					
		800			•				

Microtek ScanMaker pro Files			TS1GPNCA	TS2RPNUB	TS3PSNCC	TS4GCNUD	TS1RCNCE		
	Color								
		true color		•			•		
		web color			•				
		gray	•						
		black & white				•			
	Resolution								
		onscreen 96			•				
		Ink Jet 200							
		Laser fine 150				•			
		custom	•	•			•		
		amount					600		
	Save Multiple Images in single file			2	3	4			

Imagelt Files			TT1BPPUA	TT9BPTUB	TT2BHFUC	TT1BCPUD	TTDBCNUJ		
Configuration for Port Imagelt									
Compression									
	Group 4				•				
	Group 3			•					
	Pack Bits					•			
	MODCCITT		•						
	None						•		
	IBM		•	•	•				
	Mac					•			
Resolution									
	300		•	•			•		
	600				•	•			
Halftone Setup									
	halftone Pattern								
	2X2		•						
	8X8 enhanced				•				
	16X16 enhanced					•			
	SuperCell enhanced			•					
	Device Default						•		
	Pixel Diameter	amount							
	600%>1/900					1/900			

### TIFF File Key Characteristics

Each file in the Current Release Suite will be analyzed with QualityLogic TIFF parser for the Installed Base Suite. This information will be used to ensure that the Current Release Suite exercises a wide variety of TIFF Tags and that the options selected in the applications create the intended results in the TIFF file. Files characteristics gathered with the parser will be placed in the database shipped with the product.

### Deliverables for Current Release Suite

Deliverables to the customer for the Current Release Suite will include the following:

1. A database that contains key characteristics for all 100 Current Release TIFF files.

2. DVD containing the Current Release Suite Test Files.
3. Hard copy reference output.
4. The Query Builder utility program which provide user with a robust capability to mine the database for files with specific characteristics to facilitate the testing process (refer to the TIFF InteropAnalyzer User Manual).

## 5. Combined Statistics

The following report was generated using the TIFF InteropAnalyzer Query Builder. It represents the combined statistics for both the Installed Base and Current Release Suites. Key Characteristics with a count of zero in there report represent items that the parser is capable of identifying, but there was no occurrence of the characteristic in the set of files.

Group	Search Term	Value	Count	%
Query	Name	Unnamed		
	Files Analyzed	3196		
	Current Release Suite			
	Installed Base Suite			
Document	ByteOrder	LITTLE_ENDIAN	2290	71%
		BIG_ENDIAN	906	28%
	NoOfImages	Single	3147	98%
		Multiple	49	1%
	DateAndTime	Y	1150	35%
	DocumentName	Y	9	0%
	FillOrder	LOWER_TO_LOWER	22	0%
		LOWER_TO_HIGHER	270	8%
	ImageDescription	Y	207	6%
	NewSubfileType	MASK	0	0%
		MASK_PAGE	0	0%
		MASK_PAGE_REDUCED	0	0%
		MASK_REDUCED	0	0%
		PAGE	264	8%
		PAGE_REDUCED	2	0%
		REDUCED	4	0%

		ZERO	2740	85%
	NumberOfPages	Y	7	0%
	PageNumber	Y	267	8%
	SubfileType	IMAGE	41	1%
		PAGE	0	0%
		REDUCED	0	0%
		ZERO	0	0%
Image Rendering	BitsPerSample	8	2757	86%
		1	427	13%
		4	4	0%
		16	11	0%
	BitsPerSampleSame	Y	3196	100%
		N	0	0%
	CellLength	Y	0	0%
	CellWidth	Y	0	0%
	HasColorMap	Y	85	2%
	HasColorRespUnit	Y	0	0%
	HasDotRange	Y	642	20%
	HasExtraSamplesUnspec	Y	34	1%
	HasExtraSamplesAssocAlpha	Y	10	0%
	HasExtraSamplesUnassocAlpha	Y	17	0%
	HasGrayRespCurve	Y	6	0%
	HasGrayRespUnit	Y	6	0%
	HasHalfToneHints	Y	0	0%
	HasInkNames	Y	0	0%
	HasInkSet	Y	0	0%
	HasNumberOfInks	Y	0	0%
	HasPrimaryCromaticities	Y	0	0%
	HasReferenceBlackWhite	Y	1	0%
	HasTargetPrinter	Y	1	0%
	HasTransferFunction	Y	0	0%
	HasTransferRange	Y	0	0%
	HasWhitePoint	Y	0	0%
	PhotometricInterpret	CIELAB	2	0%
		ICCLAB	0	0%
		ITULAB	0	0%
		LOGL	0	0%
		LOGLUV	0	0%
		MASK	0	0%

		MINISBLACK	352	11%
		MINISWHITE	396	12%
		PALETTE	84	2%
		RGB	1615	50%
		SEPARATED	733	22%
		YCBCR	15	0%
	ResolutionUnit	NONE	1	0%
		INCH	2907	90%
		CENTIMETER	184	5%
	SamplesPerPixel	3	1569	49%
		1	826	25%
		4	778	24%
		5	11	0%
		7	1	0%
		2	6	0%
		6	4	0%
		12	1	0%
		10	1	0%
	Thresholding	BILEVEL	1	0%
		HALFTONE	0	0%
		ERRORDIFFUSE	2	0%
	XResolution	Y	3174	99%
	YResolution	Y	3174	99%
Image Data	Compression	NONE	1899	59%
		ADOBE_DEFLATE	0	0%
		CCITT_T4	6	0%
		CCITT_T6	301	9%
		CCITTFAX3	0	0%
		CCITTFAX4	0	0%
		CCITTRLE	5	0%
		CCITTRLEW	0	0%
		DCS	0	0%
		DEFLATE	0	0%
		IT8CTPAD	0	0%
		IT8BL	0	0%
		IT8LW	0	0%
		IT8MP	0	0%
		JBIG	0	0%
		JP2000	0	0%

		JPEG	17	0%
		LZW	937	29%
		NEXT	0	0%
		OJPEG	0	0%
		PACKBITS	27	0%
		PIXARFILM	0	0%
		PIXARLOG	0	0%
		SGILOG	0	0%
		SGILOG24	0	0%
		THUNDERSCAN	0	0%
	HasJPEGACTables	Y	0	0%
	HasJPEGDCTables	Y	0	0%
	HasJPEGInterchangeFormat	Y	2	0%
	HasJPEGInterchangeFormatLength	Y	2	0%
	HasJPEGLosslessPredictors	Y	0	0%
	HasJPEGPointTransforms	Y	0	0%
	HasJPEGProc	Y	0	0%
	HasJPEGQTables	Y	0	0%
	HasJPEGRestartInterval	Y	0	0%
	HasJPEGTables	Y	17	0%
	HasSampleFormat	Y	0	0%
	HasSMaxSampleValue	Y	360	11%
	HasSMinSampleValue	Y	360	11%
	HasT4Options	Y	7	0%
	HasT6Options	Y	260	8%
	HasXMLPacket	Y	787	24%
	HasYbcrCoefficients	Y	1	0%
	HasYbcrPositioning	Y	20	0%
	HasYbcrSubSampling	Y	15	0%
	PlanarConfig	CHUNKY	2695	84%
		PLANAR	0	0%
	Predictor	NO_PREDICTION	119	3%
		HORIZ_DIFFER	804	25%
Image Geometry	ImageLength	Y	3196	100%
	ImageWidth	Y	3196	100%
	Orientation	TOPLEFT	466	14%
		TOPRIGHT	0	0%
		BOTRIGHT	0	0%
		BOTLEFT	0	0%

		LEFTTOP	0	0%
		RIGHTTOP	0	0%
		RIGHTBOT	0	0%
		LEFTBOT	0	0%
	StripsPerImage	Y	3190	99%
	TilesPerImage	Y	1	0%
Miscellaneous	ProfilerVersion	1.00	3196	100%
Adobe Tags	HasAnyAdobe	Y	2321	72%
	HasClipPath	Y	0	0%
	HasICCPProfile	Y	1109	34%
	HasImageSourceData	Y	359	11%
	HasIndexed	Y	0	0%
	HasOPIImageId	Y	0	0%
	HasOPIProxy	Y	0	0%
	HasPhotoshop	Y	2311	72%
	HasXClipPathUnits	Y	0	0%
	HasYClipPathUnits	Y	0	0%
Exif Tags	HasExifIfdPtr	Y	805	25%
Fedex Tags	HasFedexEDR	Y	0	0%
Intergraph Tags	HasAnyIntergraph	Y	7	0%
	HasIntergraphMatrix	Y	0	0%
	HasModelTiePoint	Y	7	0%
Island Graphics Tags	HasAnyIslandGraphics	Y	0	0%
	HasRefPts	Y	0	0%
	HasRegionAffine	Y	0	0%
	HasRegionTackPoint	Y	0	0%
	HasRegionWarpCorners	Y	0	0%
IT8 Tags	HasAnyIT8	Y	14	0%
	HasIT8BitsPerRunLength	Y	14	0%
	HasIT8BitsPerExtRunLength	Y	14	0%
	HasIT8BkgColorIndicator	Y	14	0%
	HasIT8BkgColorValue	Y	14	0%
	HasIT8CmykEquivalent	Y	0	0%
	HasIT8ColorCharacterization	Y	14	0%
	HasIT8ColorSequence	Y	14	0%
	HasIT8ColorTable	Y	14	0%
	HasIT8HCUsage	Y	14	0%
	HasIT8Header	Y	14	0%
	HasIT8ImageColorIndicator	Y	14	0%

	HasIT8ImageColorValue	Y	14	0%
	HasIT8PixelIntensityRange	Y	14	0%
	HasIT8RasterPadding	Y	14	0%
	HasIT8Site	Y	14	0%
	HasIT8TransparencyIndicator	Y	14	0%
	HasIT8TrapIndicator	Y	0	0%
JPL Cartographic Tags	HasModelTransform	Y	0	0%
Kodak Tags	HasAnyKodak	Y	0	0%
	HasDCSHueShiftValues	Y	0	0%
	HasWriterSerialNumber	Y	0	0%
Pixar Tags	HasAnyPixar	Y	0	0%
	HasPixarFovcot	Y	0	0%
	HasPixarImageFullLength	Y	0	0%
	HasPixarImageFullWidth	Y	0	0%
	HasPixarMatrixWorld2Camera	Y	0	0%
	HasPixarMatrixWorld2Screen	Y	0	0%
	HasPixarTextureFormat	Y	0	0%
	HasPixarWrapModes	Y	0	0%
Pixel Magic Tags	HasJBIGOptions	Y	0	0%
SGI Tags	HasAnySGI	Y	0	0%
	HasDataType	Y	0	0%
	HasImageDepth	Y	0	0%
	HasMatteing	Y	0	0%
	HasSToNits	Y	0	0%
	HasTileDepth	Y	0	0%
SoftDesk Tags	HasModelPixelScale	Y	7	0%
SPOT Tags	HasAnySPOT	Y	7	0%
	HasGeoAsciiParams	Y	7	0%
	HasGeoDoubleParams	Y	5	0%
	HasGeoKeyDirectory	Y	7	0%
Texas Instruments Tags	HasFrameCount	Y	0	0%