Product Information
Version 1.1

ZEISS Axiocam 512 color

Your 12 Megapixel Microscope Camera for Imaging
of Large Sample Areas – Fast, in True Color, and High Resolution

Technical Specifications

› Technology and Details
› Service

ZEISS Axiocam 512 color	
Sensor Model	Sony ICX 834, EXview HAD CCD II ™
	Progressive Scan
	Quad-Port Readout
	Selected sensor quality
Sensor Pixel Count	12 Megapixel: 4250 (H) × 2838 (V)
Pixel Size	3,1 µm x 3,1 µm
Sensor Size	Effective sensor size: 13,2 mm x 8,8 mm; image diagonal 16 mm, equivalent to 1" sensor format
Spectral Sensitivity	Approx. 400 nm - 720 nm, coated Hoya C5000 IR Cut Filter
	RGB Bayer color filter mask
Max Full Well Capacity (typical)	9.000 e-
Signal Amplification	analog amplification: 1×, 2×, 3×
Readout Speed	39 MHz, 13 Mhz
Readout Noise (typical)	6,8 e- at 39 Mhz
	6,5 e- at 13 Mhz
Dynamic Range (typical)	1:1380 (63 dB)
Digitization	14 Bit / Pixel
Dark Current (typical)	<0,1 e-/p/s at 23 °C sensor temperature
Cooling	Regulated Peltier-cooling (power supply via USB 3.0 and USB 2.0)
	Sensor temperature 23 °C
Dark Current Compensation	Digital dark current compensation for optimum low light performance at long exposure times
	Automatic hot pixel correction
Exposure Time Range	250 µs to 60 s

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Binning Modes and Frame Rates	Binning	Pixel Count (H x V)	Mode	FPS @ 1 ms
	1x1	4248 x 2832	Color/Mono	10
	2x2	2120 x 1416	Mono	19
	3x3	1416 x 944	Color/Mono	26
	4x4	1056 x 708	Mono	31
	5x5	848 x 564	Color/Mono	35
	ROI	1936 x 1080	Color/Mono	22
	ROI	1936 x 512	Color/Mono	36
	(exposure time = 1ms)			
Color Interpolation Modes	High Speed: optimum speed color interpolation			
	High Quality: optimum quality color interpolation			

Live Frame Rates	Max. Frame Rate	Binning Factor / Mode	Resolution / Pixel
Maximum ratings at optimum hardware settings	10 frames/s	1 / slow	4248 x 2832
	26 frames/s	2 / medium	1416 x 944
	35 frames/s	3 / fast	848 x 564
Data-Post Processing (optional)	Objective specific shading correction		
	Sharpening		
	Black reference, dark current compensation		
	Color enhancement		
Special Features	Time stamp from camera for precise acquisition time point		
	Auto Switch Mode for Single Port / Dual Port / Quad Port Readout		
	Adjustable intensity of status LED		
	Dual Port / Quad Port Readout		
Special Preset Modes	Eight pre-loadable sets of imaging parameters for speed optimized multi modal image acquisition		
	Overlapping exposure and readout for fast time lapse imaging		

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Switchable Sensor Output Amplifier	Single Port Readout for long exposure times for maximum signal quality
	Dual Port or Quad Port Readout for improved readout speed at full resolution
	Automatic port activation mode or full manual mode
Region of Interest (ROI)	User defined imaging sub area for improvement of readout speed and reduction of amount of data
Hardware Trigger	Galvanic isolated I/O-signals
	Three output signals: exposure time, readout time, trigger ready, i.e. for controlling external mechanical shutters
	One trigger input for exposure control, 5V auxiliary voltage, GND
Status LED	Top LED: camera status (acquisition, power, cooling, speed)
	Back LED: trigger status
Interface	USB 3.0 SuperSpeed (5 Gbit/s)
	Bandwidth max. 240 Mbytes/s
	USB 2.0 optional, with lower speed
Optical Interface	C-Mount
Max. File Size per Image	Approx. 72,4 MB per image with 4248 x 2208 Pixel at 3 x 14 Bit/Pixel
Size (W x H x D) / Weight	10.8 cm x 4.3 cm x 7.8 cm / 500 g
Housing	Blue anodized aluminum
	¼" thread for camera equipment
	Zero vibration by convection-cooling, optimized cooling finns
	Teflon coated C-Mount thread
	Coated IR filter
Certificates	CE
Power Supply	7 W power consumption, power supply camera: USB 3.0, power supply Peltier-cooling: USB 2.0
	For maximum performance connection to USB 3.0 and USB 2.0 required
	Dual connection cabling provided with delivery

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Ambient Conditions (Operation)	+5 °C ... +35 °C
	Max. 80% relative humidity, non-condensing
	Free air circulation required
Ambient Conditions (Storage)	-15 °C ... +60 °C
	90% relative humidity at +40 °C, 80% relative humidity at +20 °C, non-condensing
Operating System	Windows 7 ×64 Ultimate/Professional
Software	ZEN 2 starter/lite/core/pro/system, AxioVision SE64 4.9.1 SP2 or higher

All frame rates are maximum values at short exposure times below readout time of the sensor. Exposure time, computer hardware operating system and software can reduce the maximum achievable frame rates. By using binning or sensor sub regions (ROI), the frame rates can be further increased. Technical data is subject to changes due to technical progress.

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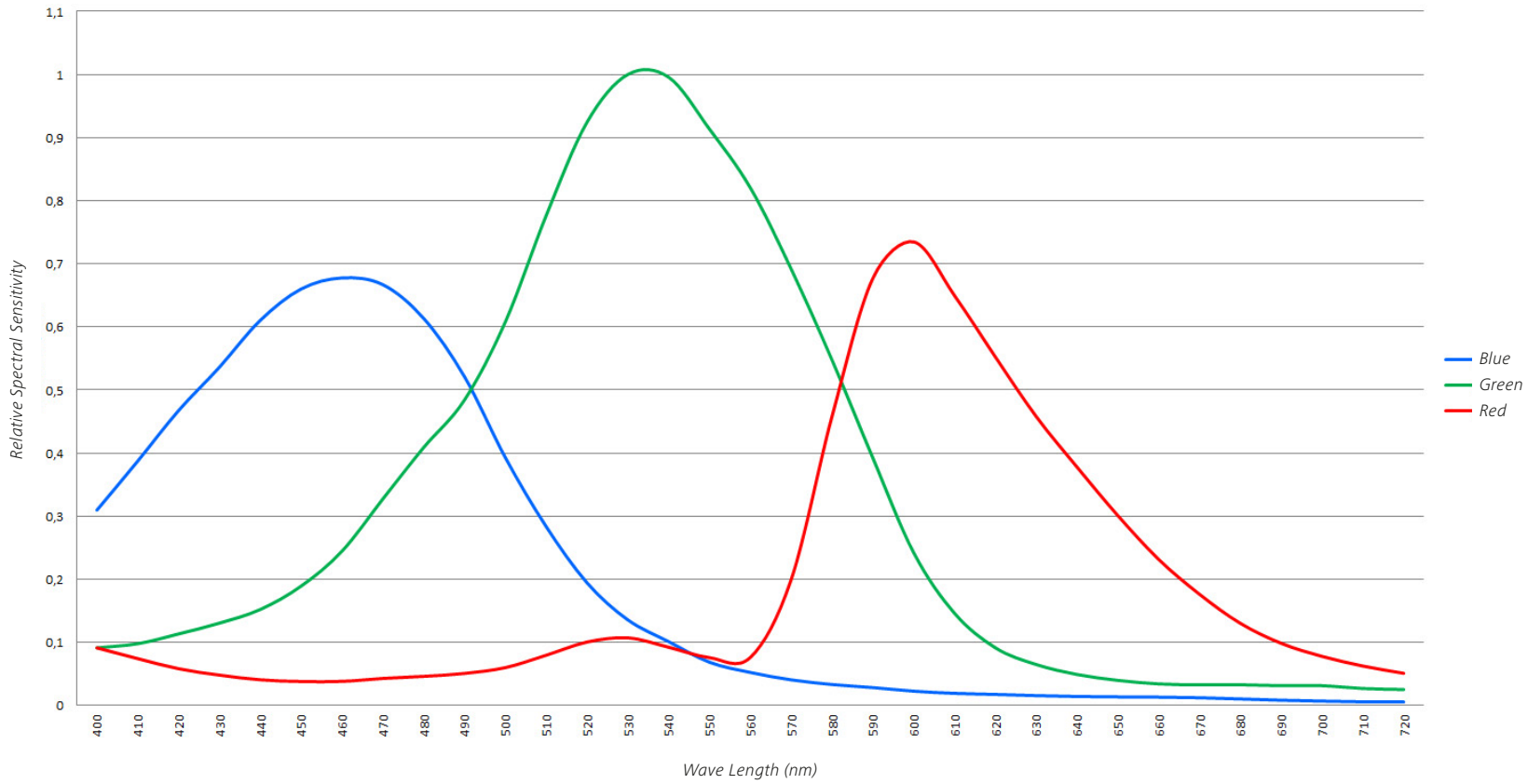
Spectral Sensitivity Axiocam 512 color
incl. IR Filter Hoya 5000



Count on Service in the True Sense of the Word

› Technology and Details
› **Service**

Because the ZEISS microscope system is one of your most important tools, we make sure it is always ready to perform. What's more, we'll see to it that you are employing all the options that get the best from your microscope. You can choose from a range of service products, each delivered by highly qualified ZEISS specialists who will support you long beyond the purchase of your system. Our aim is to enable you to experience those special moments that inspire your work.

Repair. Maintain. Optimize.
Attain maximum uptime with your microscope. A ZEISS Protect Service Agreement lets you budget for operating costs, all the while reducing costly downtime and achieving the best results through the improved performance of your system. Choose from service agreements designed to give you a range of options and control levels. We'll work with you to select the service program that addresses your system needs and usage requirements, in line with your organization's standard practices.

Our service on-demand also brings you distinct advantages. ZEISS service staff will analyze issues at hand and resolve them – whether using remote maintenance software or working on site.

Enhance Your Microscope System.
Your ZEISS microscope system is designed for a variety of updates: open interfaces allow you to maintain a high technological level at all times. As a result you'll work more efficiently now, while extending the productive lifetime of your microscope as new update possibilities come on stream.

Profit from the optimized performance of your microscope system with services from ZEISS – now and for years to come.

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