

Product Information
Version 1.1

ZEISS Axiocam 503 mono

Your Flexible and Sensitive 3 Megapixel Microscope Camera for Live Cell Imaging

We make it visible.

Technical Specifications

› Technology and Details
› Service

ZEISS Axiocam 503 mono	
Sensor Model	Sony ICX 674, EXview HAD CCD II ™
	Progressive Scan
	Quad-Port Readout
	Selected sensor quality
Sensor Pixel Count	2.83 Megapixel: 1936 (H) x 1460 (V)
Pixel Size	4.54 µm x 4.54 µm
Sensor Size	Image diagonal 11 mm, equivalent to ⅔" sensor format
Spectral Sensitivity	Approx. 400 nm – 1000 nm, annealed BK 7 protective glass
Max Full Well Capacity (typical)	15.000 e- per pixel
Signal Amplification	Adjustable analog amplification: 1x, 2x, 3x
Digitization	14 Bit / Pixel
Readout Speed	39 Mhz, 13 Mhz, switchable readout clock speed
Readout Noise (typical)	6.5 e- at 39 Mhz
	6.0 e- at 13 Mhz
Dynamic Range (typical)	1:2500 (68 dB)
Dark Current (typical)	< 0,06 e-/p/s at 18 °C sensor temperature
Cooling	Regulated thermoelectric cooling (power supplied through USB 3.0 and USB 2.0 ports)
	Delta-T 20 °C, sensor temperature 18 °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	1936 x 1460	Mono	38
	2x2	968 x 728	Mono	61
	3x3	640 x 484	Mono	76
	4x4	480 x 364	Mono	87
	5x5	384 x 292	Mono	93
	ROI	1936 x 1080	Mono/Center	45
	ROI	1936 x 512	Mono/Center	69
	(exposure time < readout time)			
Color Interpolation Modes	n.a.			

Live Frame Rates	Max. Frame Rate	Binning factor / Mode	Resolution / Pixel
Max. Ratings at optimum settings	38 frames/s	1/slow	1936 x 1460
Hardware and Color Enhancement Off	61 frames/s	2/medium	968 x 728
	76 frames/s	3/fast	640 x 484
Data-Post Processing (optional)	Lens specific shading correction		
	Sharpening		
	Black reference, dark current compensation		
	Noise filter		
Special Features	Timing from camera for precise acquisition timing		
	Auto Switch Mode fur Single Port / Dual Port / Quad Port Readout		
	Adjustable intensity of status LED		
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		
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		

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Region of Interest (ROI)	User defined imaging sub area for improvement of readout speed and reduction of amount of data
Hardware Trigger	Galvanically 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, 5 V 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 MB/s
	USB 2.0 optional, with lower speed
Optical Interface	C-Mount (17.5 mm)
Max. File Size per Image	Approx. 5.6 MB per image with 1936 x 1460 Pixels at 14 Bit/Pixel
Operating Systems	Windows 7 Prof./Ultimate 64-bit
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" standard camera mount screw thread
	Zero vibration by convection-cooling, optimized cooling fins
	Teflon coated C-Mount thread
Certificates	CE
Power Supply	Max. 7 W power consumption power by USB 2.0 and USB 3.0-Bus from PC
	For maximum performance connection to USB 3.0 and USB 2.0 required, dual connection cabling provided with camera

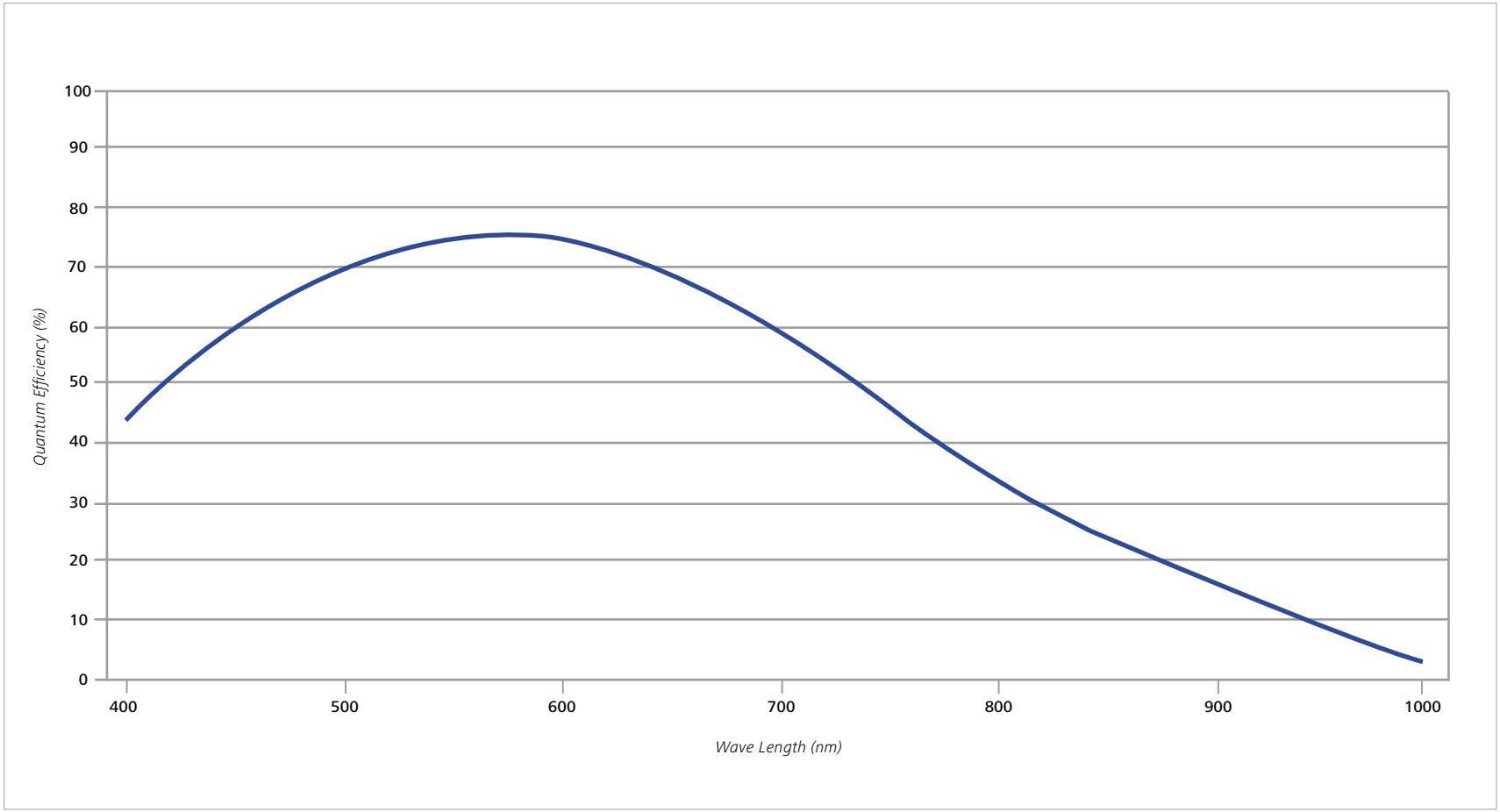
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Ambient Conditions (Operation)	+5 °C ... +35 °C
	Max. 80 % relative humidity, non-condensing
	Free air circulation required
Ambient Conditions (Storage)	–15 °C ... +60 °C
	90 % relative humidity at +40 °C, 80 % relative humidity at +20 °C, non-condensing
Order Number	426559-0000-000

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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› **Technology and Details**
› Service



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 it – 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.

Please note that our service products are always being adjusted to meet market needs and maybe be subject to change.







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

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