



PRODUCT DATASHEET

RETIGA-SRV



The **QImaging® Retiga-SRV** CCD digital camera has been specially engineered for low-light, high-speed, high-sensitivity applications.

A three-stage Peltier device and an all-metal, hermetic-vacuum-sealed CCD chamber provide state-of-the-art cooling to -45°C; the camera's software-selectable, regulated cooling enables precise control in single-degree increments.

The Retiga-SRV features a 1.4-megapixel CCD, 12-bit digital output, and an IEEE 1394 interface for enhanced connectivity and noise-shielding performance.

applications

- Quantitative Fluorescence Microscopy
- FRET
- Live-Cell Fluorescent Protein Imaging
- Ratiometric Analysis (Ca²+, pH, etc.)
- Whole Animal Fluorescence
- FRAP
- = FISH

Deep-Cooled, High-Sensitivity Digital CCD Camera







features	benefits
Black-Out Mode	■ Turns all lights off for low-light imaging applications
High Quantum Efficiency	 Very high sensitivity for demanding low-light & fluorescent imaging; "High Sensitivity" mode provides increased QE in the 500 to 1000nm spectral range and is easily switched on/off through software control
High-Resolution, 1.4-Million-Pixel Sensor	■ Highly detailed, sharp images
High-Speed Readout	 Previewing & focusing in real time 110fps with 8x8 binning & ROI 11fps full resolution @ 12 bits Ideal for automated imaging applications
Low-Noise Electronics	■ Quantitation & imaging of low light levels
Optional/Removable IR- Cutoff Filter	 High-contrast visible-range images with IR filter in place Removable for IR applications
Flexible Exposure Control from 1µs to 17.9min	■ Optimal integration over a wide range of light levels
External Sync & Trigger	 Tight synchronization with flashlamps, automated filters, shutters, & microscope stages
Three-Stage Peltier Cooling w/ Vacuum Seal	■ Reduced thermal noise for low-light, long exposures
Binning	Increases sensitivity for quantitation & imaging of very low light levelsIncreases frame rate
Extended IR Sensitivity	■ High-performance imaging outside the visible range
IEEE 1394 FireWire Connection	 Simple connectivity Better noise performance Excellent connectivity ability Ease of use & installation Portability with laptop computer Simultaneous use of multiple cameras through a single port
Extensive Application Software Support	 Choose from a large selection of life science & industrial software for microscopy, machine vision, & video-streaming functions

RETIGA-SRV Specifications

ccd sensor	
Enhanced Sensitivity	Software controlled to provide enhanced QE from 500 to 1000nm
Light-Sensitive Pixels	1.4 million; 1392 x 1040
Binning Modes	2x2, 4x4, 8x8
ROI (Region of Interest)	From 1x1 pixels up to full resolution, continuously variable in single-pixel increments
Exposure/Integration Control	1μs to 17.9min in 1μs increments
Sensor Type	Sony® ICX285 progressive-scan interline CCD (monochrome)
Pixel Size	6.45µm x 6.45µm
Linear Full Well	18,000e- (22,000e- with 2x2 binning)
Read Noise	8e-
Dark Current	0.01e-/pix/s
Cooling Technology	Three-stage Peltier cooling with all-metal hermetic-vacuum-sealed chamber assembled in a Class 1,000 cleanroom
Cooling Type	Down to -45°C, regulated, with software control in 1°C increments
Digital Output	12 bits
Readout Frequency	20, 10, 5MHz
Frame Rate	11fps full resolution @ 12 bits (165fps maximum with binning and ROI functions)
camera	
camera Black-Out Mode	Turns all camera lights off to reduce light reflection during low-light applications; software controlled
Black-Out Mode Computer Platforms/	applications; software controlled
Black-Out Mode Computer Platforms/ Operating Systems	applications; software controlled Windows® & Mac OS*
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled)
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger Trigger Types	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled) Internal, Software, External
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger Trigger Types External Sync	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled) Internal, Software, External TTL Output (optically coupled)
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger Trigger Types External Sync Gain Control	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled) Internal, Software, External TTL Output (optically coupled) 0.817 to 39 times
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger Trigger Types External Sync Gain Control Offset Control	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled) Internal, Software, External TTL Output (optically coupled) 0.817 to 39 times -2048 to 2047
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger Trigger Types External Sync Gain Control Offset Control Optical Interface	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled) Internal, Software, External TTL Output (optically coupled) 0.817 to 39 times -2048 to 2047 2/3", C-mount optical format
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger Trigger Types External Sync Gain Control Offset Control Optical Interface Threadmount	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled) Internal, Software, External TTL Output (optically coupled) 0.817 to 39 times -2048 to 2047 2/3", C-mount optical format 1/4" – 20 mount
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger Trigger Types External Sync Gain Control Offset Control Optical Interface Threadmount Power Requirements	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled) Internal, Software, External TTL Output (optically coupled) 0.817 to 39 times -2048 to 2047 2/3", C-mount optical format 1/4" – 20 mount 30W; 12–24VDC
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger Trigger Types External Sync Gain Control Offset Control Optical Interface Threadmount Power Requirements Weight	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled) Internal, Software, External TTL Output (optically coupled) 0.817 to 39 times -2048 to 2047 2/3", C-mount optical format 1/4" – 20 mount 30W; 12–24VDC 1.1kg
Black-Out Mode Computer Platforms/ Operating Systems Digital Interface External Trigger Trigger Types External Sync Gain Control Offset Control Optical Interface Threadmount Power Requirements Weight Warranty	applications; software controlled Windows® & Mac OS* IEEE 1394 FireWire TTL Input (optically coupled) Internal, Software, External TTL Output (optically coupled) 0.817 to 39 times -2048 to 2047 2/3", C-mount optical format 1/4" – 20 mount 30W; 12–24VDC 1.1kg 2 years

camera models

Includes: IEEE 1394 FireWire cable, IEEE 1394 PCI card, power supply, QCapture Suite software and access to SDK

Monochrome Retiga-SRV:

Model: RET-SRV-F-M-12-C Model: RET-SRV-F-M-12-C-IR

camera options

- Removable IR-Cutoff Filter
- RGB Color Filter for monochrome cameras (F-mount interface required), refer to data sheet for more details



Extended Warranty

spectral response









