

RETIGA-SRV

FAST1394

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	<ul style="list-style-type: none"> ▪ Turns all lights off for low-light imaging applications
High Quantum Efficiency	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ Highly detailed, sharp images
High-Speed Readout	<ul style="list-style-type: none"> ▪ Previewing & focusing in real time ▪ 110fps with 8x8 binning & ROI ▪ 11fps full resolution @ 12 bits ▪ Ideal for automated imaging applications
Low-Noise Electronics	<ul style="list-style-type: none"> ▪ Quantitation & imaging of low light levels
Optional/Removable IR-Cutoff Filter	<ul style="list-style-type: none"> ▪ High-contrast visible-range images with IR filter in place ▪ Removable for IR applications
Flexible Exposure Control from 1µs to 17.9min	<ul style="list-style-type: none"> ▪ Optimal integration over a wide range of light levels
External Sync & Trigger	<ul style="list-style-type: none"> ▪ Tight synchronization with flashlamps, automated filters, shutters, & microscope stages
Three-Stage Peltier Cooling w/ Vacuum Seal	<ul style="list-style-type: none"> ▪ Reduced thermal noise for low-light, long exposures
Binning	<ul style="list-style-type: none"> ▪ Increases sensitivity for quantitation & imaging of very low light levels ▪ Increases frame rate
Extended IR Sensitivity	<ul style="list-style-type: none"> ▪ High-performance imaging outside the visible range
IEEE 1394 FireWire Connection	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ Choose from a large selection of life science & industrial software for microscopy, machine vision, & video-streaming functions

RETIGA-SRV FAST1394 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	1 μ s to 17.9min in 1 μ s increments
Sensor Type	Sony [®] ICX285 progressive-scan interline CCD (monochrome)
Pixel Size	6.45 μ m x 6.45 μ m
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

Black-Out Mode	Turns all camera lights off to reduce light reflection during low-light applications; software controlled
Computer Platforms/ Operating Systems	Windows [®] & Mac OS*
Digital Interface	IEEE 1394 FireWire
External Trigger	TTL Input (optically coupled)
Trigger Types	Internal, Software, External
External Sync	TTL Output (optically coupled)
Gain Control	0.817 to 39 times
Offset Control	-2048 to 2047
Optical Interface	2/3", C-mount optical format
Threadmount	1/4" – 20 mount
Power Requirements	30W; 12–24VDC
Weight	1.1kg
Warranty	2 years
Operating Environment	0 to 40°C
Storage Temperature	0 to 50°C
Humidity	Less than 80% relative humidity

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

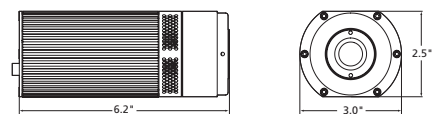
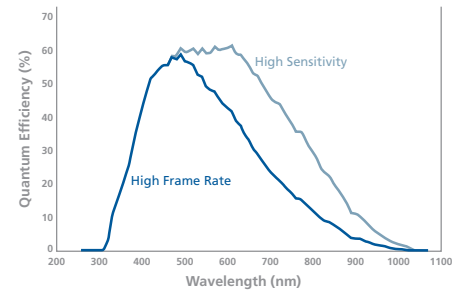
Model: RET-SRV-F-M-12-C-IR

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



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*Refer to Qimaging website for detailed listing of supported operating systems.
Note: Specifications are typical and subject to change.

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