

# RETIGA-SRV *FAST1394*

## Deep-Cooled, High-Sensitivity IEEE 1394 FireWire® Digital CCD Camera

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. Additionally, the camera comes with iGlo™ Technology, which features an Organic Light Emitting Diode (OLED) display that provides users with key information about camera settings in a convenient, ergonomic way.

### 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



*Note: Lens shown for illustration only and is not included.*

features	benefits
iGlo™	<ul style="list-style-type: none"> <li>■ OLED display for easy-to-verify key camera information in a simple, ergonomic design</li> </ul>
Black-Out Mode	<ul style="list-style-type: none"> <li>■ Turns all lights off for low-light imaging applications</li> </ul>
High Quantum Efficiency	<ul style="list-style-type: none"> <li>■ Very high sensitivity for demanding low-light &amp; fluorescent imaging; "High Sensitivity" mode provides increased QE in the 500 to 1000nm spectral range and is easily switched on/off through software control</li> </ul>
High-Resolution, 1.4-Million-Pixel Sensor	<ul style="list-style-type: none"> <li>■ Highly detailed, sharp images</li> </ul>
High-Speed Readout	<ul style="list-style-type: none"> <li>■ Previewing &amp; focusing in real time</li> <li>■ 110fps with 8x8 binning &amp; ROI</li> <li>■ 11fps full resolution @ 12 bits</li> <li>■ Ideal for automated imaging applications</li> </ul>
Low-Noise Electronics	<ul style="list-style-type: none"> <li>■ Quantitation &amp; imaging of low light levels</li> </ul>
Optional/Removable IR-Cutoff Filter	<ul style="list-style-type: none"> <li>■ High-contrast visible-range images with IR filter in place</li> <li>■ Removable for IR applications</li> </ul>
Flexible Exposure Control from 1µs to 17.9min	<ul style="list-style-type: none"> <li>■ Optimal integration over a wide range of light levels</li> </ul>
External Sync & Trigger	<ul style="list-style-type: none"> <li>■ Tight synchronization with flashlamps, automated filters, shutters, &amp; microscope stages</li> </ul>
Three-Stage Peltier Cooling w/ Vacuum Seal	<ul style="list-style-type: none"> <li>■ Reduced thermal noise for low-light, long exposures</li> </ul>
Binning	<ul style="list-style-type: none"> <li>■ Increases sensitivity for quantitation &amp; imaging of very low light levels</li> <li>■ Increases frame rate</li> </ul>
Extended IR Sensitivity	<ul style="list-style-type: none"> <li>■ High-performance imaging outside the visible range</li> </ul>
IEEE 1394 FireWire Connection	<ul style="list-style-type: none"> <li>■ Simple connectivity</li> <li>■ Better noise performance</li> <li>■ Excellent connectivity ability</li> <li>■ Ease of use &amp; installation</li> <li>■ Portability with laptop computer</li> <li>■ Simultaneous use of multiple cameras through a single port</li> </ul>
Extensive Application Software Support	<ul style="list-style-type: none"> <li>■ Choose from a large selection of life science &amp; industrial software for microscopy, machine vision, &amp; video-streaming functions</li> </ul>

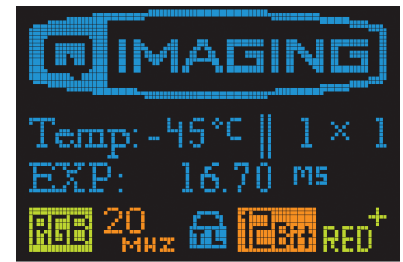
# RETIGA-SRV FAST1394 Specifications

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	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	0.05e-/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
iGlo™ Display	Provides key camera information to the user, allowing easy verification of camera settings
Computer Platforms/ Operating Systems	Windows®
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

\*Refer to QImaging website for detailed listing of supported operating systems.  
 Note: Specifications are nominal and subject to change.

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 FireWire is a trademark of Apple Computer, Inc., registered in the U.S. and other countries.  
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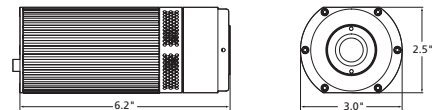
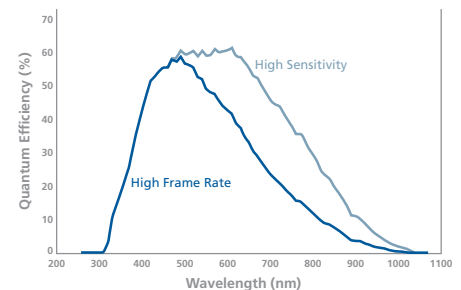


iGlo™ Technology features essential information about camera settings.

## applications

- Quantitative Fluorescence Microscopy
- FRET
- Live-Cell Fluorescent Protein Imaging
- Ratiometric Analysis (Ca<sup>2+</sup>, pH, etc.)
- Whole Animal Fluorescence
- FRAP
- FISH

## spectral response



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