



HIGH PERFORMANCE DIGITAL IMAGING
made easy

RETIGA EXi *FAST1394*

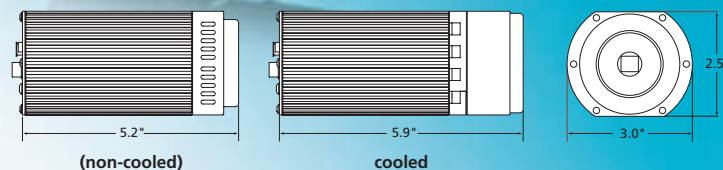
Very High Sensitivity IEEE 1394 FireWire™ Digital CCD Camera – Monochrome or Color

The QImaging Retiga EXi digital camera features enhanced visible and IR quantum efficiency resulting in very high sensitivity that is ideal for demanding low-light and fluorescence imaging applications. A progressive-scan interline CCD sensor gives a resolution of 1.4 million pixels in a 12-bit digital output. High-speed, low-noise electronics provide linear digital data for rapid image capture. The IEEE 1394 FireWire™ digital interface allows ease of use and installation with a single wire. No framegrabber or external power supply is required. The Retiga EXi includes QCapture software (Windows® and Mac OS) for real-time image preview and capture. A **Software Development Kit (SDK)** is available for interfacing with custom software.



Retiga EXi (non-cooled)

Retiga EXi cooled



Note: Lenses are shown for illustration only and are not included.

CAMERA MODELS

Includes: IEEE 1394 FireWire™ cable, IEEE 1394 PCI card, QCapture software, & access to SDK

- **Monochrome Retiga EXi Cooled** Model: RET-EXi-F-M-12-C
- **Monochrome Retiga EXi Non-Cooled** Model: RET-EXi-F-M-12
CCD Digital Camera, 12 Bits
- **Color Retiga EXi Cooled** Model: RET-EXi-F-CLR-12-C
- **Color Retiga EXi Non-Cooled** Model: RET-EXi-F-CLR-12
CCD Digital Camera, 12 Bits

FEATURES

- High Quantum Efficiency
- High-Resolution, 1.4-Million-Pixel Sensor
- High-Speed Readout
- Low-Noise Electronics
- Optional/Removable IR-Cutoff Filter
- Flexible Exposure Control from 10µs to 17.9min
- External Sync & Trigger

BENEFITS

- Very high sensitivity for demanding low-light & fluorescent imaging
- Highly detailed, sharp images
- Previewing & focusing in real time
- 110fps with 8x8 binning & ROI
- 10fps full resolution @ 12 bits
- Ideal for automated imaging applications
- Quantitation & imaging of low light levels
- Highly focused visible-range images with IR filter in place
- Removable for IR applications
- Optimal integration over a wide range of light levels
- Tight synchronization with flashlamps, automated filters, shutters, & microscope stages

CAMERA OPTIONS

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



Peltier Cooling

Binning

Extended IR Sensitivity

IEEE 1394 FireWire™
QImaging Fast 1394 Technology

Extensive Application Software Support

▪ Minimizes thermal noise during low-light, long-exposure imaging

▪ Increases sensitivity for quantitation & imaging of very low light levels
▪ Increases frame rate

▪ High-performance imaging outside the visible range

▪ Simple connectivity
▪ Ease of use & installation
▪ Portability with laptop computer
▪ Simultaneous use of multiple cameras through a single port
▪ Single-cable operation (no external power supply or control unit)

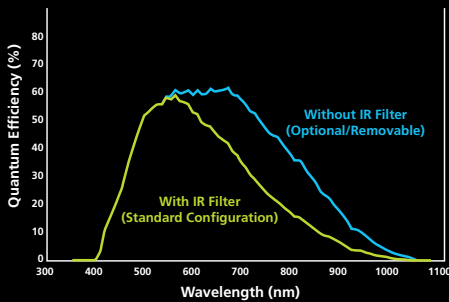
▪ Choose from a large selection of life science & industrial software for microscopy, machine vision, & video-streaming functions

RETIGA EXi FAST1394 SPECIFICATIONS

APPLICATIONS

- Brightfield, Phase-Contrast, & Darkfield Microscopy
- Fluorescence Microscopy
- Live-Cell Imaging
- Pathology, Histology, & Cytology
- Green Fluorescent Protein (GFP) Applications
- FISH
- Ca⁺⁺ Ratio Analysis
- Motility & Motion Analysis
- DNA Analysis
- Metallurgical Microscopy
- Semiconductor Inspection
- Manufacturing Quality Control
- Failure Analysis
- Forensic Analysis

SPECTRAL RESPONSE



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CCD SENSOR

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	10µs to 17.9min in 1µs increments
Sensor Type	Sony® ICX285 progressive-scan interline CCD (monochrome or color)
Pixel Size	6.45µm x 6.45µm
Linear Full Well	18,000e ⁻ (22,000e ⁻ with 2x2 binning)
Read Noise	8e ⁻
Dark Current	0.15e ⁻ /pix/s (cooled)
Cooling Available	Yes (optional)
Cooling Type	Peltier thermoelectric cooling to 25°C below ambient
Digital Output	12 bits
Readout Frequency	20, 10, 5, 2.5MHz
Frame Rate	10fps full resolution @ 12 bits (165fps maximum with binning and ROI functions)

CAMERA

Computer Platforms/Operating Systems	Windows® & Mac OS*
Digital Interface	IEEE 1394 FireWire™
Sustained Image Data Rate	40MB/s
External Trigger	TTL Input (optically coupled)
Trigger Types	Internal, Software, External
External Sync	TTL Output (optically coupled)
Gain Control	0.7 to 30x
Offset Control	-2048 to 2047
Optical Interface	2/3", C-mount optical format
Threadmount	1/4" – 20 mount
Power Requirements	7W (non-cooled); 13W (cooled); 8-24V
Weight	640g (non-cooled); 920g (cooled)
Warranty	2 years
Operating Environment	0 to 50°C (32 to 122°F)
Storage Temperature	-10 to 60°C
Humidity	Less than 80% non-condensing at 35°C (95°F)

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

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