

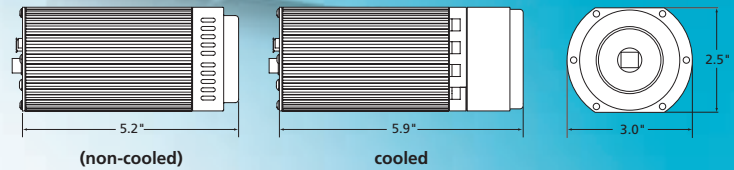


HIGH PERFORMANCE DIGITAL IMAGING
made easy

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.



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

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**



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
- 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

Peltier Cooling

Binning

Extended IR Sensitivity

IEEE 1394 FireWire™ QImaging Fast 1394 Technology

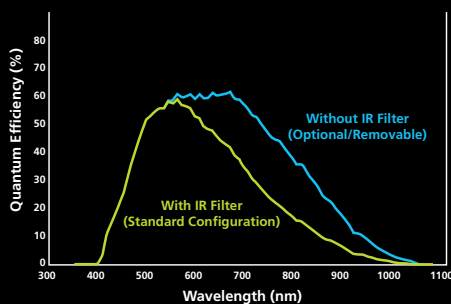
Extensive Application Software Support

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



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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