High Performance Digital Imaging **made easy**

RETIGA EXi FAST 1394

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

The **QImaging Retiga EXi** CCD 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 requiring no framegrabber or external power supply. The Retiga EXi includes QCapture Software for for Microsoft Windows® and Mac® OS based software systems 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 and 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-bit
- **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-bit

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**

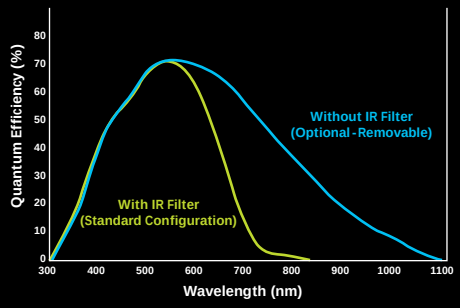
FEATURES	BENEFITS
High Quantum Efficiency	■ Very high sensitivity for demanding low-light & fluorescent imaging
High Resolution 1.4 Million pixel sensor	■ Highly detailed, sharp images
High Speed Readout	■ Previewing & focusing in real time ■ 110fps in 8x8 binning & ROI ■ 10fps full resolution @ 12-bits ■ Ideal for automated imaging applications
Low Noise Electronics	■ Quantitation & imaging of low light levels
Optional/Removable IR cutoff filter	■ Highly focused visible range images with IR filter in place, and removable for IR applications
Flexible Exposure Control from 10µs to 17.9min	■ Optimal Integration over a wide range of light levels
External Sync and Trigger	■ Tight synchronization with flashlamps, automated filters, shutters & microscope stages
Peltier Cooling	■ Minimizes thermal noise during low light, long exposure imaging
Binning	■ Increased sensitivity for quantitation & imaging of very low light levels ■ Increased frame rate
Extended IR Sensitivity	■ High performance imaging outside the visible range
IEEE 1394 FireWire™ QImaging Fast 1394 Technology	■ 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
Extensive application software support	■ Choose from a large selection of life science & industrial software for microscopy, machine vision, and video streaming functions

RETIGA EXi FAST1394 SPECIFICATIONS

APPLICATIONS

- Brightfield, Phase Contrast and Dark-field Microscopy
- Fluorescence Microscopy
- Live Cell Imaging
- Pathology, Histology, Cytology
- Green Fluorescent Protein (GFP) Application
- FISH
- Ca^{++} Ratio Analysis
- Motility and 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 Colour
Pixel Size	6.45µm x 6.45µm
Linear Full Well	18,000e^-; 22,000e^- in 2x2 binning
Read noise	8e^-
Dark Current	0.15e^-/pix/s cooled
Cooling Available	Yes (optional)
Cooling Type	Peltier thermoelectric cooling to 25 degrees Celsius below ambient
Digital Output	12-bit
Readout Frequency	20, 10, 5, 2.5MHz
Frame Rate	10fps full resolution @ 12-bits, 205*fps maximum with binning and ROI functions
CAMERA	
Computer Platform/Operating System	Microsoft 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 30 times
Offset Control	-2048 to 2047
Optical Interface	2/3", C-Mount optical format
Threadmount	1/4" – 20 Mount
Power Requirements	7 watts non-cooled; 13 watts cooled; 8-24V
Weight	640g non-cooled; cooled 920g
Warranty	2 years
Operating environment	0 to 50 degrees Celsius (32 to 122F); Storage Temperature: -10 to 60 degrees Celsius
Humidity	Less than 80% non-condensing at 35 degrees Celsius (95F)

**Special Order Only. Standard model achieves 165fps.*
***Refer to QImaging website for detailed listing of supported operating systems.*
Note: Specifications are nominal and subject to change.

04-0002C-B

QIMAGING™

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