

# QICAM *FAST1394*

## High-Performance IEEE 1394 FireWire™ Digital CCD Camera

### Monochrome or Color

The QImaging QICAM digital camera is designed for high-resolution, brightfield scientific and industrial applications. A progressive-scan interline CCD sensor gives a resolution of 1.4 million pixels in a 12-bit digital output. High-speed, lownoise electronics provide linear digital data at frame rates up to 110 fps with binning and ROI. 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 QICAM includes QCapture software (Windows® and Mac OS) for real-time image preview and capture. A Software Development Kit (SDK) is available upon request for interfacing with custom software.

### applications

- Brightfield and Phase-Contrast Microscopy
- Live-Cell Imaging
- Pathology, Histology, & Cytology
- Motility & Motion Analysis
- DNA Analysis
- Metallurgical Microscopy
- Semiconductor Inspection
- Failure Analysis
- Forensic Analysis

## High-Performance Digital CCD Camera



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

features	benefits
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>■ 165fps maximum frame rate</li> <li>■ 110fps with 4x4 binning &amp; RO</li> <li>■ 10fps full resolution</li> <li>■ Ideal for automated imaging applications</li> </ul>
Flexible Exposure Control from 12μs to 17.9min	<ul style="list-style-type: none"> <li>■ Optimal integration over a wide range of light levels</li> </ul>
12-Bit Digitization/ 36-Bit Color Digitization	<ul style="list-style-type: none"> <li>■ 4096 grey levels for precise light-intensity discrimination</li> <li>■ 4096 levels per channel for superior color images</li> </ul>
External Sync & Trigger	<ul style="list-style-type: none"> <li>■ Tight synchronization with flashlamps, automated filters, shutters, &amp; microscope stage</li> </ul>
Peltier Cooling	<ul style="list-style-type: none"> <li>■ Minimizes thermal noise during low-light imaging</li> </ul>
ROI (Region of Interest)	<ul style="list-style-type: none"> <li>■ Higher frame rates for precise analysis of rapidly changing specimens</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>
IEEE 1394 FireWire™ QImaging Fast 1394 Technology	<ul style="list-style-type: none"> <li>■ Simple connectivity</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> <li>■ Single-cable operation (no external power supply or control unit)</li> </ul>
Extensive Third-Party 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 applications</li> </ul>

# QICAM Specifications

## 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	12µs to 17.9min in 1µs increments
Sensor Type	Sony® ICX205 progressive-scan interline CCD (monochrome or color)
Pixel Size	4.65µm x 4.65µm
Linear Full Well	10,000e-
Read Noise	12e-
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)

## camera

Computer Platforms/ Operating Systems	Windows® & Mac OS*
Digital Interface	IEEE 1394 FireWire™
Sustained Data Rate	40MB/s
Shutter Control	Electronic shutter, no moving parts
External Trigger	TTL Input
Trigger Types	Internal, Software, External
External Sync	TTL Input
Gain Control	0.6 to 15x
Offset Control	-2048 to 2047
Optical Interface	1/2", C-mount optical format
Threadmount	1/4" — 20 mount
Power Requirements	7W (non-cooled); 13W (cooled); 8-24V
Weight	635g (non-cooled); 915g (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)

## camera models

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

### ■ Monochrome QICAM Cooled

Model: QIC-F-M-12-C

### ■ Monochrome QICAM Non-Cooled

Model: QIC-F-M-12

CCD Digital Camera, 12 Bits

### ■ Color QICAM Cooled

Model: QIC-F-CLR-12-C

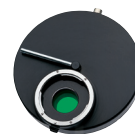
### ■ Color QICAM Non-Cooled

Model: QIC-F-CLR-12

CCD Digital Camera, 12 Bits

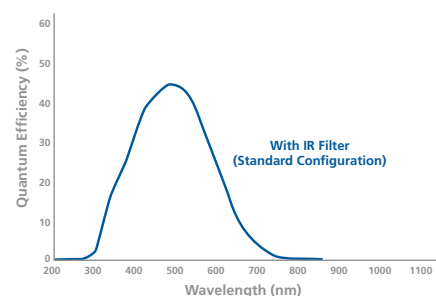
## camera options

- **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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