ROLERA-MGi *FAST1394*

High-Speed, Extremely Sensitive IEEE 1394 FireWire® Digital EMCCD Camera

The **QImaging® Rolera-MGi** back-illuminated EMCCD camera combines >90% QE with the convenience of FireWire IEEE 1394. The Rolera-MGi features the 512 x 512 L3Vision Frame-Transfer EMCCD from e2v Technologies, enabling charge to be multiplied before readout in order to provide fast detection for low-light-level applications. Capable of capturing 300+ frames per second with binning and ROI, the Rolera-MGi allows single-photon detection for applications such as single-molecule imaging or live-cell confocal microscopy.
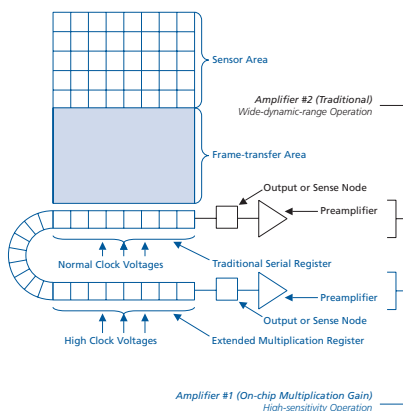
camera models

Includes: IEEE 1394 FireWire cable, IEEE 1394 PCI card, power supply, QCapture Suite software and access to SDK

- **Monochrome Rolera-MGi**
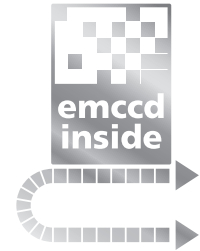 Model: ROL-MGi-F-M-14-C

camera options

- Extended Warranty

emccd architecture

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

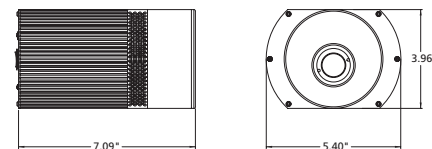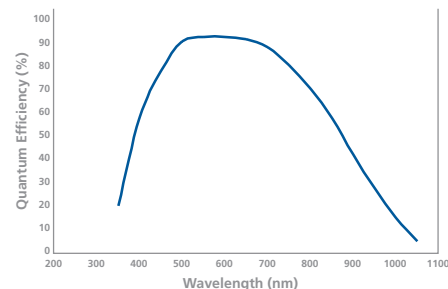| features	benefits
High Quantum Efficiency	■ Extremely high sensitivity for demanding low-light & fluorescent imaging; up to 90%+ between 500-650nm
High-Speed Readout	■ Previewing & focusing in real time ■ 300+fps with 6x6 binning and ROI ■ 30fps full resolution @ 14 bits ■ Ideal for automated imaging applications
Low-Noise Electronics	■ Quantitation & imaging of low light levels
Flexible Exposure Control	■ Optimal integration over a wide range of light levels
External Sync & Trigger	■ Tight synchronization with flashlamps, automated filters, shutters, & microscope stages
Three-Stage Peltier Cooling	■ Reduces thermal noise for low-light long exposures while providing temperature stability
Binning	■ Increases sensitivity for quantitation & imaging of very low light levels ■ Increases frame rate
IEEE 1394 FireWire Connection	■ Simple connectivity ■ Better noise performance ■ Excellent connectivity ability ■ Ease of use & installation ■ Portability with laptop computer ■ Simultaneous use of multiple cameras through a single port
Extensive Application Software Support	■ Choose from a large selection of life science & industrial software for microscopy, machine vision, & video-streaming functions

ROLERA-MGi FAST1394 Specifications

emccd sensor

Light-Sensitive Pixels	512 x 512
Binning Modes	2, 3, 4, 5, 6 horizontally, abitrary vertically
ROI (Region of Interest)	From 1x1 pixels up to full resolution, continuously variable in single-pixel increments
Exposure/Integration Control	10µs to days
Sensor Type	e2v L3Vision CCD97, back-illuminated device
Pixel Size	16µm x 16µm
Linear Full Well	800,000e- (EM mode); 240,000e- (conventional)
Read Noise	<1 e- rms in EM mode
Dark Current	0.5 e-/pix/s
Cooling Technology	Three-stage Peltier cooling, chamber back-filled with nitrogen atmosphere assembled in a Class 1,000 cleanroom
Cooling Type	Down to -25°C, regulated, with software control in 1°C increments
Digital Output	14 bits
Readout Frequency	10, 5MHz (EM mode); 5, 1MHz (normal mode)
Frame Rate	30fps full resolution @ 14 bits (300+ maximum with binning and ROI functions)

camera

Computer Platforms/Operating Systems	Windows®*
Digital Interface	IEEE 1394 FireWire
External Trigger	TTL Input
Trigger Types	Internal, Software, External
External Sync	TTL Output
EM Gain Control	1 to 1000 times (0-4095 DAC control)
Normal Gain Control	0.5, 1, 2
Optical Interface	2/3", C-mount optical format
Threadmount	1/4" – 20 mount
Power Requirements	96W; 12V
Weight	3.18kg (7lbs)
Warranty	2 years
Operating Environment	0 to 30°C, 80% relative humidity non-condensing
Storage Temperature	-20 to 60°C

applications

- Spinning-Disk Confocal Microscopy
- Dynamic Ratio Imaging (e.g., pH, Low-Concentration Flux)
- FRAP (Fluorescence Recovery After Photobleaching)
- Live-Cell Fluorescent Protein Imaging

spectral response

the industry's first
FireWire emccd *camera!*

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

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