

RVT100 Data Sheet



RVT100 Camera Head



RVT100 Camera Server

RVT100 Key Features:

- Radiation and Vacuum Tolerant sCMOS Camera with C-mount
- For Qualitative Imaging Applications
- Operates over wide temperature range
- Multiple sCMOS sensor configurations available
- GigE Vision compliant
- Fiberoptic data link for extended cable lengths

Included in Standard System:

- RVT100 Camera Head
- RVT100 Camera Server
- Power Supply AC/DC 24VDC
- Fiberoptic Camera Data & Control Cable, 10m
- DC Power Cable, 10m
- CD containing: SI Image CMOS Software Installation package, Configuration & Test Report, & Manuals

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Power Source	Camera Server
Power Dissipation	4W typical (requires heat sink in vacuum)
Power Cable Length	50m maximum
Fiberoptic Data Link	LC (twin fiber) connector 1 Gbit to server
Fiberoptic Cable Length	300m maximum
Fiberoptic Cable Type	50/125 or 62.5/125 multimode
Auxiliary I/O	External trigger input & output digital signals
Illumination Control	Power source & programmable current sink for LED illumination
Lens Mount	Industry standard C mount
Vacuum Compatability	Materials selected & cleaned for vacuum use up to 1×10^{-6} mbar
Envrionmental	Operating Temperatures: -120°C to 70°C Operating & Storage Humidity: 0 to 80% Storage Temperature: -120°C to 70°C Recommended Vacuum Range: 1000 to 10^{-7} mbar
Radiation	Upset threshold >160 Rads-Si ; $>3.7 \times 10^9$ n/cm ²

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Power Source	AC adaptor 24 VDC 2A
Fiberoptic Data Link	LC (twin fiber) connector 1 Gbit to camera head
Power Output	Variable 4-10 VDC 1A negotiated voltage to camera head
Ethernet	RJ-45 connector 10baseT/100baseT/1000baseT (auto sensing), MDI or MDIX (auto sensing)
Envrionmental	Operating Temperatures: 10°C to 35°C Operating & Storage Humidity: 10 to 80% Storage Temperature: -40°C to 60°C Operating Altitude: 2,200m Storage Altitude: 4,500m max

Control & Acquisition Software:

- Spectral Instruments SI Image CMOS (provided)
- Web browser or customer software using HTTP server interface
- 3rd party camera control software using GigE Vision interface

Regulatory Compliance:

- EU RoHS 3 (EU 2015/863) EN 63000:2018
- IC ICES-003 Issue 7 (October 2020)
- FCC Part 15B Class A
- CE EN 61326-1: 2020

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Frame Rate Using a CMV4000 Sensor		
	12 bit	12 bit packed
Frame Time	1/4.59	1/6.10
Frames per Second	4.59	6.10
	8 bit	
	1/9.17	
		9.17

If exposure time is longer than the frame time, the excess time will be added to the frame time. If ethernet performance is slow, the camera may need to slow down to keep up with image transmission.

Triggered Image Acquisition:

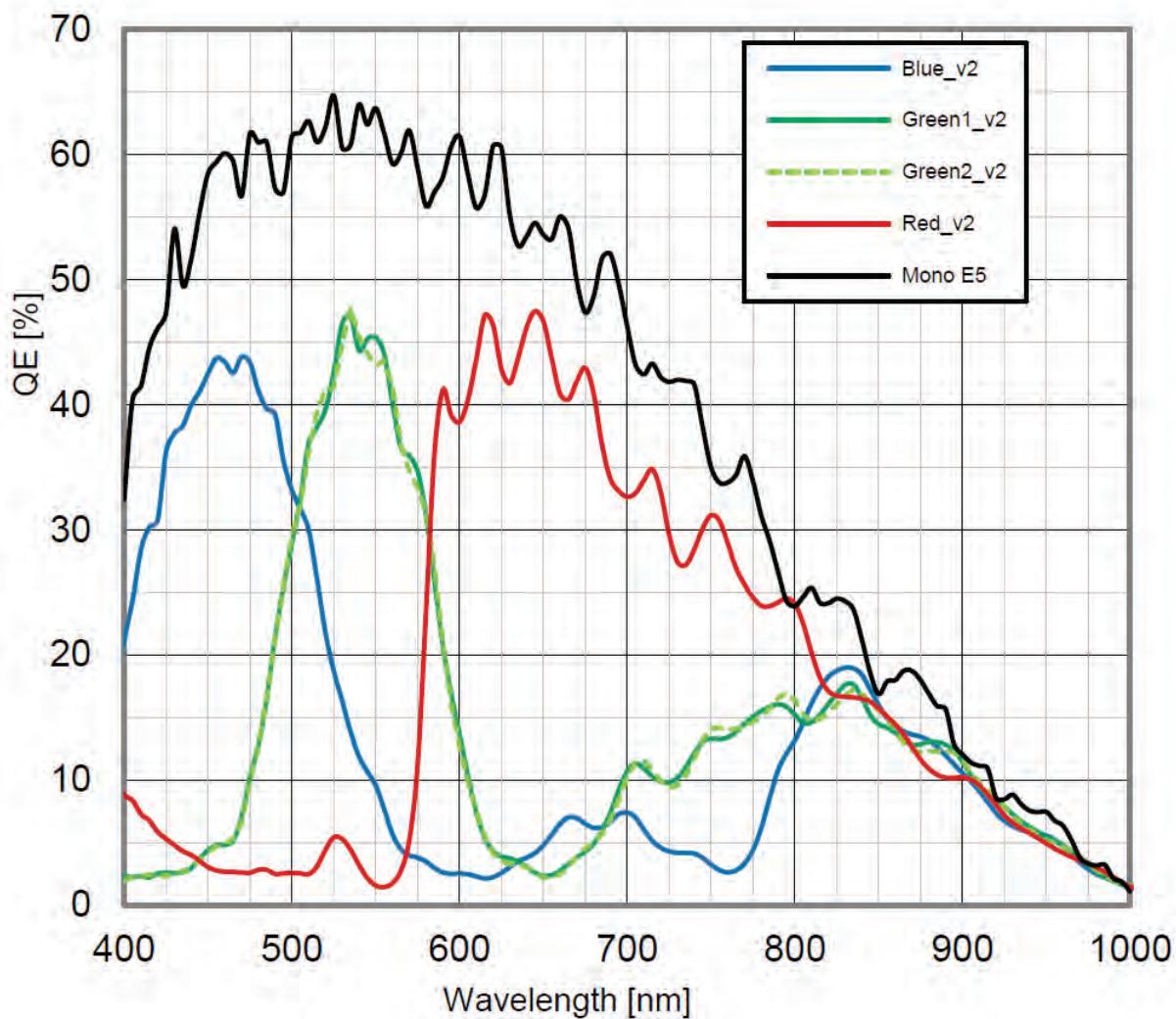
- Single image, image sequence, or bulb mode
- 180 microsecond latency

Image Sensor	
Type	Global Shutter CMOS with True CDS
Horizontal & Vertical Pixel Count	2,048 x 2,048
Pixel Size	5.5 µm x 5.5 µm
Window	Protective Glass window installed or removed
Microlens	Microlens installed (for most optical imaging) or removed (for UV & x-ray imaging)
Filters	Standard Bayer pattern (color) or none (monochrome)
Optical Format	1"
Sensitivity	0.27 A/W
Conversion Gain	0.30 LSB/e- (3.3e-/ADU) 12 bit mode
Full Well Charge	13500 e-
Dark Noise	13 e- (RMS)
Dynamic Range	60 dB
SNR Max	41.3 dB
Parasitic Light Sensitivity	1/50000
Dark Current	125 e-/pixel-sec (25C)
Fixed Pattern Noise	<0.1 % of full swing
Supply Voltage	1.8 V / 3.3 V
Power	600 mW

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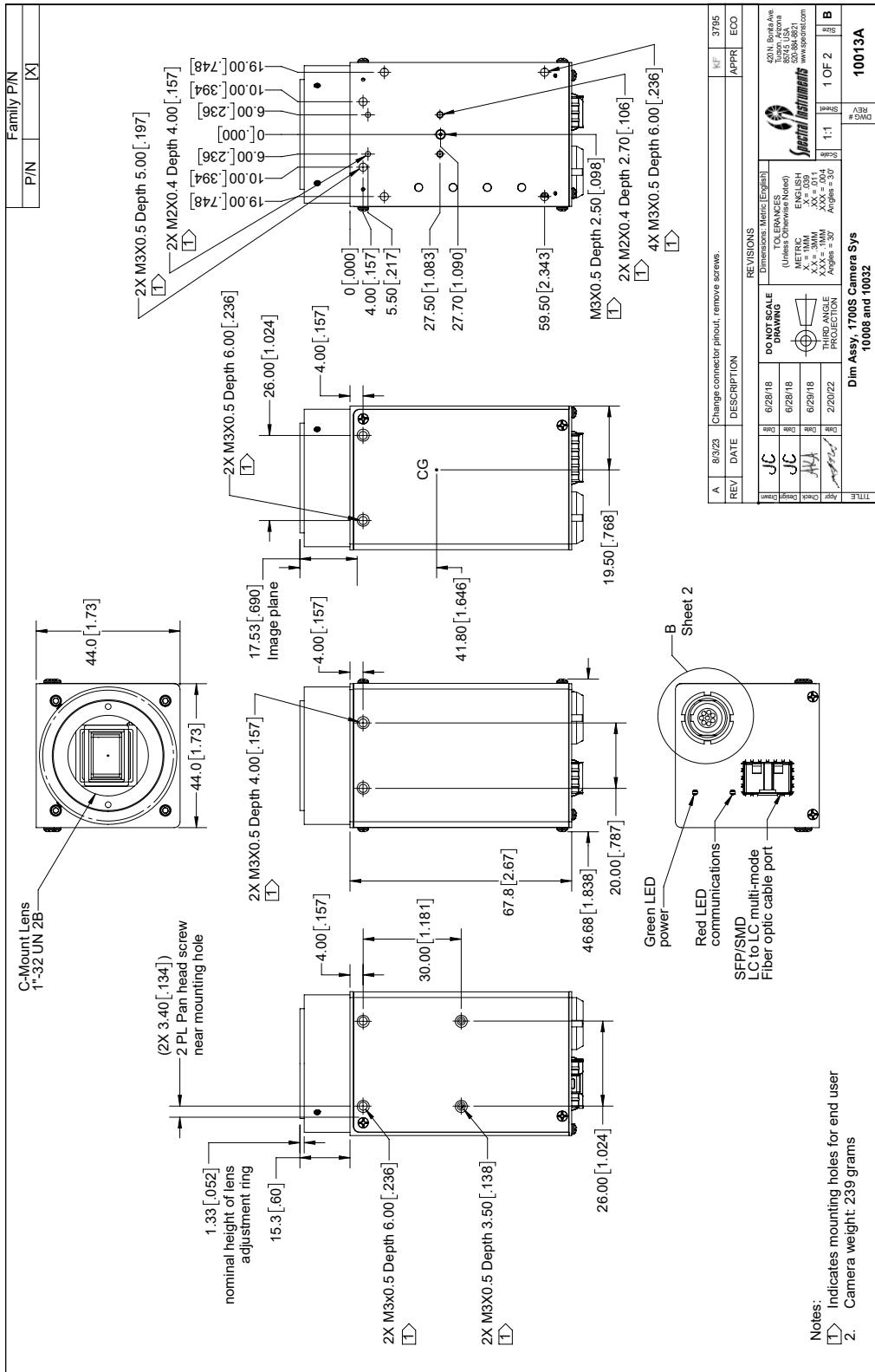


Typical Spectral Response of CMV4000 with RGB Cover Glass & Mono



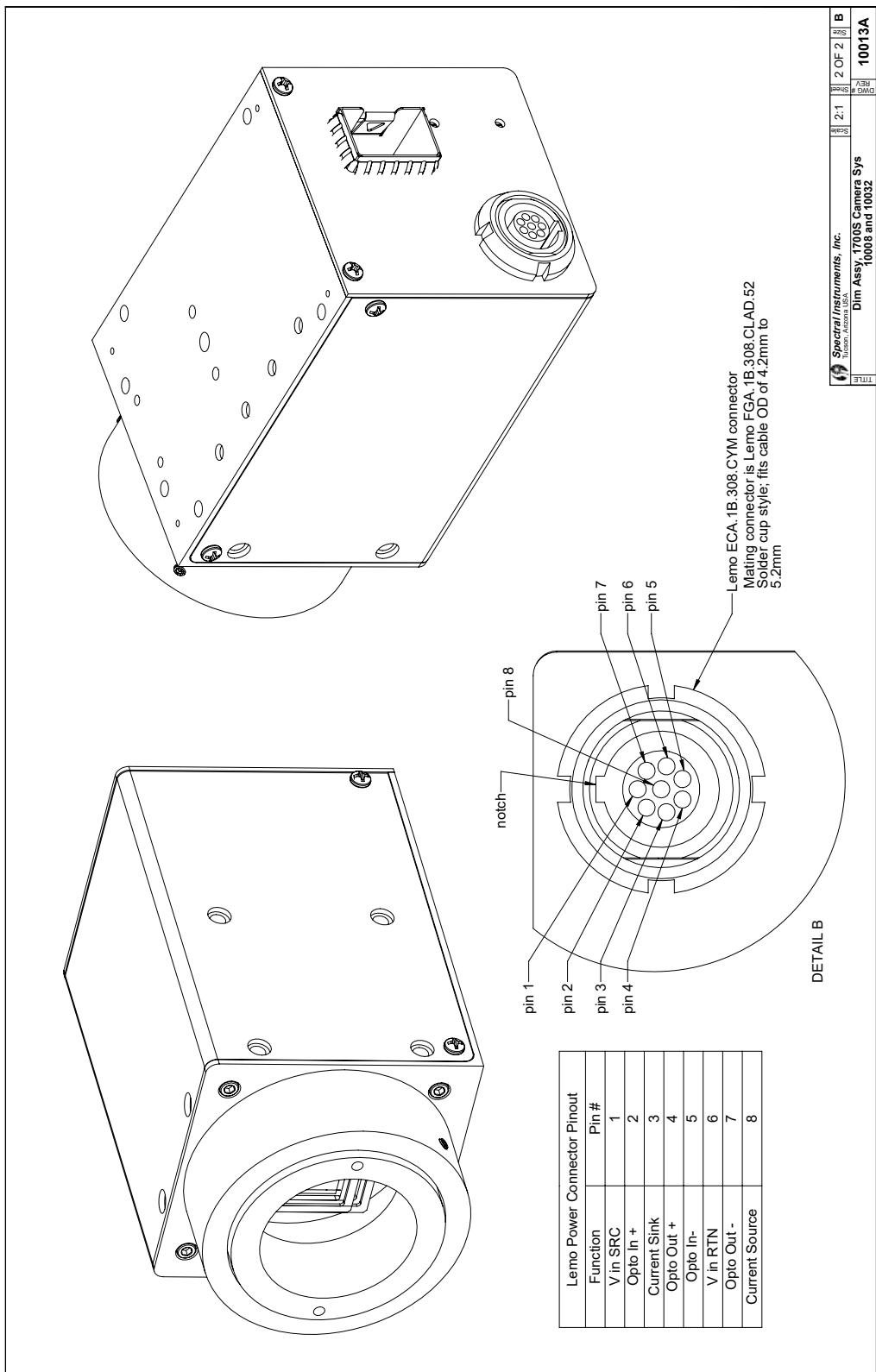
AMS Datasheet DS000728, page 13, https://ams.com/documents/20143/36005/CMV4000_DS000728_5-00.pdf

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