

# Eagle V

Deep Cooled Vacuum CCD

2048 x 2048 and 1024 x 1024 • 75kHz and 2MHz • High resolution scientific imaging •



## Key Features and Benefits

*The BEST CCD on the market today!*

- **Lifetime vacuum guarantee**  
Protection and integrity of the sensor
- **Extremely low dark current**  
Deep cooled to > -110°C delta enables long exposure times
- **Back illuminated 4MP sensor from e2v**  
Enables large field of view imaging
- **High QE: >90% @ 525nm and 50% @ 380nm & 720nm**  
Optimum photon collection

Resolution	<b>2048 x 2048</b> <b>1024 x 1024</b>
Dark Current	<b>0.0001 e/p/s</b>
Full Well Capacity	<b>100,000e-</b>
Readout Noise	<b>2.3e-rms</b>
Cameralink	<b>16bit</b>

## Specification for Eagle V CCD

Sensor	E2V CCD42-40	E2V CCD47-10
		Front and Back Illuminated, AIMO
Active Pixel Array Size	(2048 × 2048) pixels	(1024 × 1024) pixels
Pixel Size	13.5µm × 13.5µm	13µm × 13µm
Active Area	27.65mm × 27.65mm (39.10mm diagonal)	
Binning	Programmable, up to 64×64 pixels	
Full Well Capacity	100 000 e <sup>-</sup>	
Non-Linearity	< 1%	
Readout Noise	@ 75kHz pixel readout rate, 2.3 e <sup>-</sup> rms @ 2MHz pixel readout rate, 9.0 e <sup>-</sup> rms	
Binned Read Noise	@75kHz pixel readout rate, 16×16 binning < 5.0 e <sup>-</sup> rms	
Peak Quantum Efficiency (QE)	> 90% @ 550nm	
Spectral Response	300nm-1050nm	
Dark Current @ minimum temperature	<0.0001e <sup>-</sup> /p/s @ Δ-116°C	
Shutter	Mechanical, aperture φ = 45mm	
Cooling	Active, ΔT > 110°C	
Cooling Method	TEC with liquid (utilizing PentaVac™ Technology)	
Lens Mount	Nikon F mount (others on request)	
Synchronization	Trigger IN and OUT – TTL compatible	
Digital Output	16-bit	
Data Interface	Cameralink (base)	
Power Supply	12V DC ±10%	
Total Power Consumption	TEC OFF < 9W TEC ON < 100W	
Operating Temperature Range	-20°C to +55°C	
Storage Temperature Range	-40°C to +70°C	
Dimensions	141mm x 133mm x 110mm	
Weight (excluding lens)	3.0kg [6.6lb]	

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## Ordering Information

### Camera

Eagle Scientific CCD 4MP cooled digital B/W camera	EA4240-CL
Eagle Scientific CCD 1MP cooled digital B/W camera	EA4710-CL
Eagle 4MP Power Supply cable	EA4240-PSU
Eagle 1MP Power Supply cable	EA4710-PSU

### Optional Accessories

EPIX(R) EB1 base CL card	RPL-EPIX-EB1
EPIX(R) base notebook CL card	RPL-EPIX-ECB1-34
EPIX(R) base notebook CL card	RPL-EPIX-ECB1-54
EPIX(R) XCAP STD software	RPL-XCAP-STD
CameraLink Cable, 2m <sup>2</sup>	RPL-CL-CBL-2M
Thermoelectric Water Chiller Unit	RPL-CHILLER
Water tubing for Eagle (3M) M-M	RPL-WTUBE-EAGLE
Optical lenses <sup>3</sup>	RPL-xx-xxxx

Note 1: Longer CL cable available

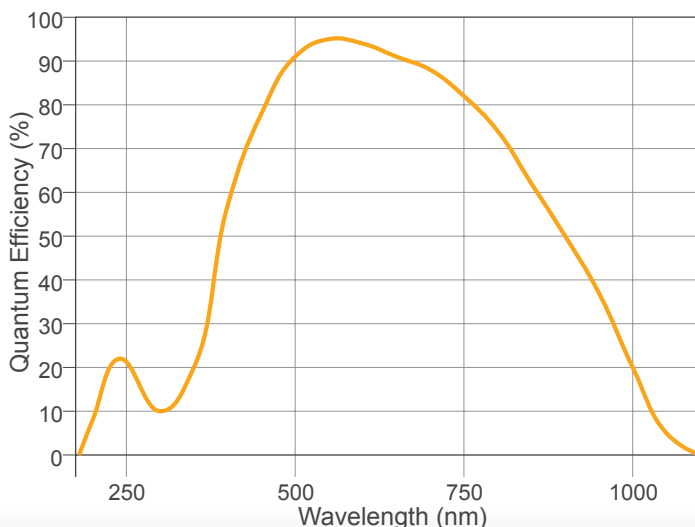
Note 2: Recommended coolant flow rate >0.5liters per min. & cooling capacity >100W @ 20°C

Note 3: Please consult us to check our range of lenses

Demo is available on request.  
Pricing AOR subject to volumes.

Detailed technical drawings  
can be downloaded at  
[www.raptorphotonics.com](http://www.raptorphotonics.com)

## Quantum Efficiency



## Applications

- Astronomy
- Calcium signaling
- Fluorescence imaging / spectroscopy
- Luminescence
- Xray

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