

# Eagle OEM1

Deep Cooled Vacuum CCD • High Resolution Scientific Imaging •  
1024 x 1024 • 75kHz and 2MHz Readout Speeds •



PRELIMINARY

## Key Features and Benefits

*The BEST Scientific CCD camera on the market today!*

- **7 year vacuum guarantee**  
Protection and integrity of the sensor
- **Extremely low dark current**  
Deep cooled 100°C with 10°C coolant chiller
- **Back illuminated 1MP sensor from e2v**  
Enables large field of view imaging
- **C-Mount Integrated shutter**  
Closed during readout to avoid vertical smear

Resolution	<b>1024 x 1024</b>
Dark Current	<b>0.0001 e/p/s</b>
Full Well Capacity	<b>100ke-</b>
Readout Noise	<b>2.5e-rms</b>
USB	<b>2.0</b>

## Specification for Eagle OEM1

Sensor	E2V CCD47-10 Back Illuminated
Blemish Specification	Grade 1
Active Pixel	1024 × 1024
Pixel Size	13µm × 13µm
Active Area	13.3mm × 13.3mm (18.81mm diagonal)
Binning	Programmable, up to 64×64 pixels
Full Well Capacity	Minimum: 80ke- Typical: 100ke-
Linearity	Better than 99%
Readout Noise (e-)	<3.5e- @ 75kHz (2.5e- typical) <12e- @ 2MHz (9.0e- typical)
Readout Rate	75kHz, 2MHz
Binned Readout Noise	@75kHz pixel readout rate, 8×8 binning < 5.0e- rms (typical)
Dark Current (e-/p/s)	0.00033 @ -80°C typical 0.00010 @ -100°C typical
Spectral Response	250 - 1100nm
Cooling	-80°C (with air cooling @25°C) -100°C (with coolant chiller @10°C)
Lens Mount	C mount with integrated shutter
Synchronization	Trigger IN and OUT – TTL compatible
Digital Output Format	16-bit USB 2.0
Power Supply	12V DC ±10%
Total Power Consumption <sup>1</sup>	<100W (TEC ON, Steady State)
Operating Temperature Range	0°C to +55°C
Storage Temperature Range	-30°C to +60°C
Dimensions (L*W*H) <sup>2</sup>	120mm x 126mm x 170.00mm
Weight (excluding lens)	3.5kg

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## Ordering Information

### Camera

Eagle CCD 1MP  
Deep cooled digital camera  
Back thinned visible

EA4710V-BV-CS-OEM1

Eagle PSU

EA4240V-PSU

Eagle Power Brick

EA-BRK-150W

### Optional Accessories

Thermoelectric Water Chiller Unit<sup>3</sup>

RPL-CHILLER

Water tubing (3m)<sup>4</sup>

RPL-WTUBE-EAGLE

Optical lenses<sup>5</sup>

RPL-xx-xxxx

Note 1: For more detailed power consumption values, please refer to the user manual.

Note 2: Dimensions include all connector parts on the camera interface.

Note 3: Recommended coolant flow rate >0.5l/min & cooling capacity >100W @ 20°C.

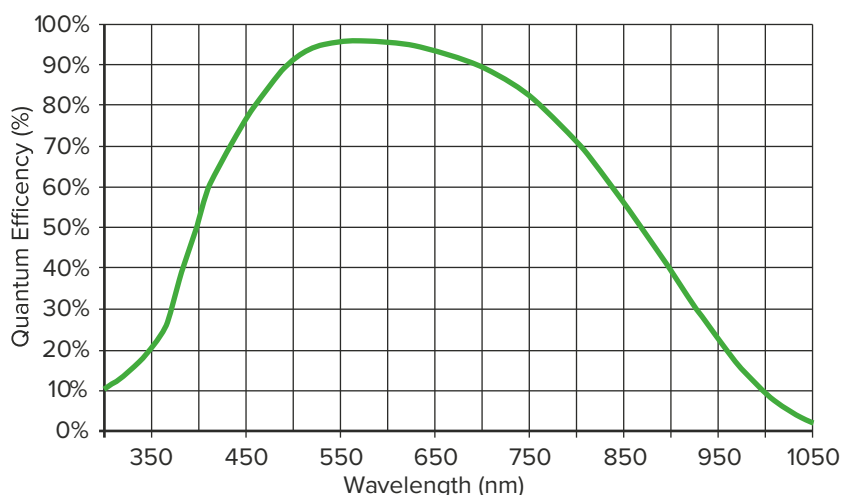
Note 4: Includes tubing and connectors.

Note 5: 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



\*Data supplied by sensor manufacturer

## Applications

### Scientific

- In-Vivo Imaging
- Astronomy
- Calcium signaling
- Fluorescence imaging / Spectroscopy
- Luminescence
- X-ray

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Willowbank Business Park  
Larne, Co Antrim  
BT40 2SF,  
Northern Ireland

Raptor Photonics Ltd. (UK)  
T: +44(0)2828 270 141  
E: sales@raptorphotonics.com  
[www.raptorphotonics.com](http://www.raptorphotonics.com)

Raptor Photonics Inc. (USA)  
T: +1 (877) 230-4836  
E: sales@raptorphotonics.com  
[www.raptorphotonics.com](http://www.raptorphotonics.com)

