

Eagle

Deep Cooled Vacuum CCD • High Resolution Scientific Imaging •
2048 x 2048 and 1024 x 1024 • 75kHz and 2MHz Readout Speeds •



Key Features and Benefits

The BEST CCD on the market today!

- **7 year vacuum guarantee**
Protection and integrity of the sensor
- **Extremely low dark current**
Deep cooled with a 110°C delta which 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	2048 x 2048 1024 x 1024
Dark Current	0.0001 e/p/s
Full Well Capacity	100ke-
Readout Noise	2.3e-rms
Camera Link	16 bit

Specification for Eagle

Sensor	E2V CCD42-40	E2V CCD47-10
	Front and Back Illuminated	
Active Pixel	2048 × 2048	1024 × 1024
Pixel Size	13.5µm × 13.5µm	13µm × 13µm
Active Area	27.65mm × 27.65mm (39.10mm diagonal)	13.3 × 13.3mm (18.81mm diagonal)
Binning	Programmable, up to 64×64 pixels	
Full Well Capacity	Minimum: 80ke- Typical: 100ke-	
Shift Register Well Depth	150ke-	
Non-Linearity	< 1%	
Readout Noise (RMS)	<3.5e- @ 75kHz (2.3e-typical) <12e- @ 2MHz (9.0e-typical)	
Binned Readout Noise	@75kHz pixel readout rate, 16×16 binning < 5.0 e- rms	
Peak Quantum Efficiency (QE)	> 90% @ 550nm	
Spectral Response ¹	300 - 1100nm	
Dark Current (e/p/s) ²	<0.001 @ -90°C (0.0001 typical)	
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 Format	16-bit Camera Link (base)	
Power Supply	12V DC ±10%	
Total Power Consumption ³	<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) ⁴	155.08mm x 140.89mm x 110.00mm	
Weight (excluding lens)	3.0kg [6.6lb]	

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Ordering Information

Camera

Eagle CCD 4MP Deep cooled digital camera Back thinned visible	EA4240V-BV-CL
Eagle CCD 4MP Deep cooled digital camera Enhanced UV	EA4240V-UV-CL
Eagle CCD 1MP Deep cooled digital camera Back thinned visible	EA4710V-BV-CL
Eagle PSU	EA4240V-PSU
Eagle Power Brick	EA-BRK-150W

Optional Accessories

Mini PC with XCAP Std and frame grabber	RPL-PC-EL1
EPIX® EB1 frame grabber	RPL-EPIX-EB1
EPIX® XCAP Std software	RPL-XCAP-STD
Camera Link Cable (2m) ⁵	RPL-CL-CBL-2M
Thermoelectric Water Chiller Unit ⁶	RPL-CHILLER
Water tubing (3m) ⁷	RPL-WTUBE-EAGLE
Optical lenses ⁸	RPL-xx-xxxx

Note 1: UV window available on request.

Note 2: Values not valid for EA4240V-UV-CL model.

Note 3: For more detailed power consumption values, please refer to the user manual.

Note 4: Dimensions include all connector parts on the camera interface.

Note 5: Longer Camera Link cable available.

Note 6: Recommended coolant flow rate >0.5l/min & cooling capacity >100W @ 20°C.

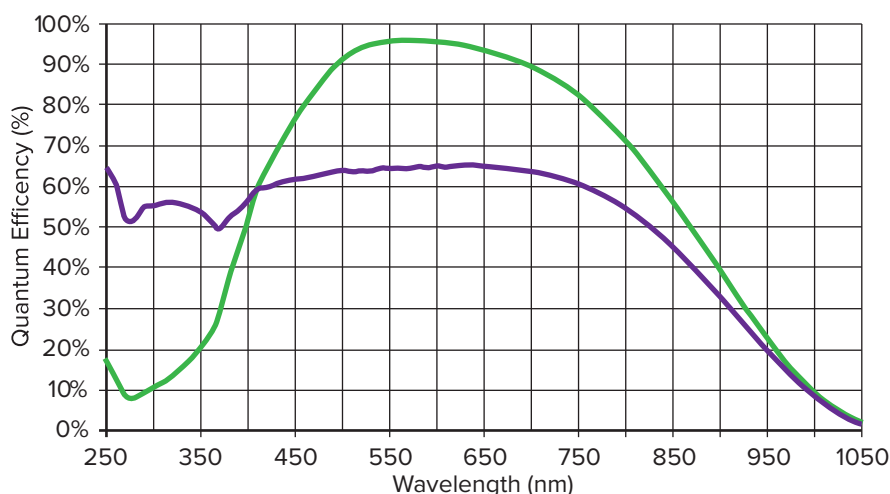
Note 7: Includes tubing and connectors.

Note 8: 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

Quantum Efficiency



— Basic Midband — Enhanced UV
*Enhanced UV only an option with the E2V CCD42-40
*For more QE options, please contact Raptor.

Applications

Scientific

- Astronomy
- Calcium signaling
- Fluorescence imaging / spectroscopy
- Luminescence
- X-ray

Document #: INEA4240-CL 0120R1



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