Eagle 42-40

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

PentaVac

CAMERA Link

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 -90°C with 20°C liquid coolant which enables long exposure times
- **Back illuminated 4MP sensor from e2v**
  Enables large field of view imaging. UV option available
- **F-Mount Integrated shutter**
  Closed during readout to avoid vertical smear
- **High QE: >90% @ 525nm and 50% @ 380nm & 720nm**
  Optimum photon collection

Resolution	**2048 x 2048**
Dark Current	**0.0001 e/p/s**
Full Well Capacity	**100ke-**
Readout Noise	**2.3e-rms**
Camera Link	**16 bit**

Raptor photonics

www.raptorphotonics.com

Specification for Eagle 42-40

Sensor	E2V CCD42-40 Front and Back Illuminated
Active Pixel	2048 × 2048
Pixel Size	13.5µm × 13.5µm
Active Area	27.65mm × 27.65mm (39.10mm 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
Shutter	Mechanical, aperture φ = 45mm
Cooling	Active, ΔT > -90°C with 20°C coolant
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]

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

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 PSU	EA4240V-PSU
Eagle Power Brick	EA-BRK-150W

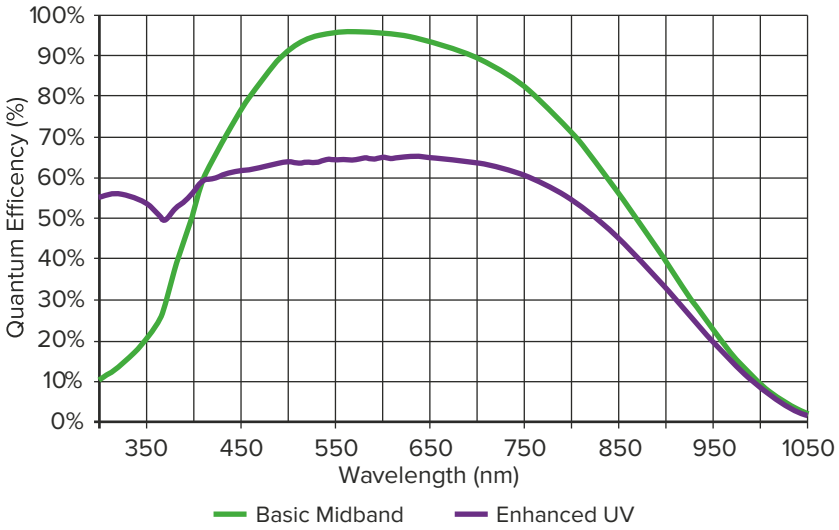
Optional Accessories

Mini PC with XCAP Std and frame grabber	RPL-PC-mf2280
Thunderbolt frame grabber	RPL-mf2280
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.

Detailed technical drawings can be downloaded at www.raptorphotonics.com

Quantum Efficiency



*Data supplied by sensor manufacturer

Applications

Scientific

- Astronomy
- BioChip reading
- Bio / Chemi luminescence
- Bose Einstein condensate (BEC)
- Calcium signaling
- Fluorescence imaging / Spectroscopy
- Luminescence
- Photovoltaic
- Semiconductor analysis
- X-ray

Document #: INEA4240-CL 0322

Raptor photonics

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

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