Eagle 47-10

Deep Cooled Vacuum CCD • High Resolution Scientific Imaging •
1056 x 1027 • 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**
  -90°C with 20°C coolant / -80°C air cooled with 25°C ambient
- **Back illuminated 1MP sensor from e2v**
  Enables large field of view imaging.
- **C-Mount Integrated shutter**
  Closed during readout to avoid vertical smear
- **High QE: >90% @ 525nm and 50% @ 380nm & 720nm**
  Optimum photon collection

Resolution	**1056 x 1027**
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 47-10

Sensor[1]	E2V CCD47-10 Back Illuminated
Active Pixel	1056 × 1027
Pixel Size	13µm × 13µm
Active Area	13.7mm × 13.3mm (19.09mm diagonal)
Binning	Programmable, up to 16×16 pixels
Full Well Capacity	Minimum: 80ke- Typical: 100ke-
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[2]	300 - 1100nm
Dark Current (e/p/s)	<0.001@ -90°C (0.0001 typical)
Shutter	Mechanical, aperture φ = 25mm
Cooling	-90°C with 20°C coolant / -80°C air cooled with 25°C ambient
Cooling Method	TEC with liquid (utilizing PentaVac™ Technology)
Lens Mount	C 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]	140mm x 126mm x 120mm
Weight (excluding lens)	2.2kg [4.85lb]

Ordering Information

Camera

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

Optional Accessories

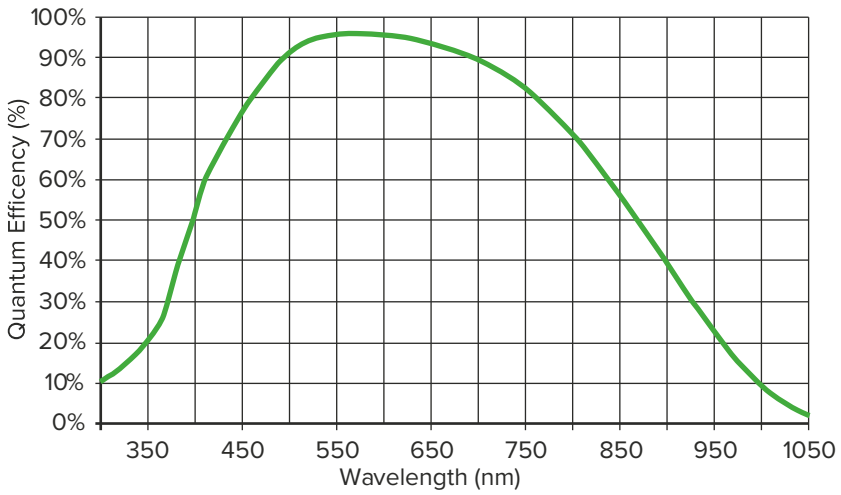
Mini PC with XCAP Std and frame grabber	RPL-PC-mf2280
Thunderbolt frame grabber	RPL-mf2280
EPIX® EB1 frame grabber	RPL-EPIX-EB1
EPIX® XCAP Std software	RPL-XCAP-STD
Camera Link Cable (2m)[5]	RPL-CL-CBL-2M
Thermoelectric Water Chiller Unit[6]	RPL-CHILLER
Water tubing (3m)[7]	RPL-WTUBE-EAGLE
Optical lenses[8]	RPL-xx-xxxx

Note 1: Optimised for other wavelengths. Contact us.
Note 2: UV window available on request.
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 @ 10°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



*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

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