

# Eagle XV

e2v In-Vacuum Direct Detection Cooled CCD • High Resolution Soft X-ray Scientific Imaging  
2048 x 2048 and 1024 x 1024 • 13.5µm × 13.5µm and 13µm × 13µm Pixel Pitch •



## Key Features and Benefits

- **Choice of sensors, BN-DD and BN**  
Select the best QE for your application
- **Active / Passive cooling down to -80°C**  
Minimizing noise with Raptor cooling technology
- **Compact platform for In-Vacuum operation**  
Ideal for OEM integration with vacuum pressure  $\leq 10^{-5}$  mbar
- **Full range of Accessories**  
Including vacuum feedthroughs, cables, tubing etc

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Resolution	<b>2048 × 2048</b> <b>1024 × 1024</b>
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Digital output	<b>16 bit</b>
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Non linearity	<b>&lt; 1%</b>
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Weight	<b>&lt;1.5kg</b>
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# Specification for Eagle XV

Sensor <sup>1</sup>	E2V 4240 Back Illuminated, AI-MO	E2V 4710 Back Illuminated, AI-MO
Active Pixel	2048 × 2048	1024 × 1024
Pixel Size	13.5µm × 13.5µm	13µm × 13µm
Active Area	27.6mm × 27.6mm	13.3mm × 13.3mm
Spectral Response	12eV - 20keV	
Image Pixel Well Depth	>80ke- (100ke- typical)	
Non Linearity	< 1%	
Typical Dark Current @ -80°C	<b>BN-DD</b>	<b>BN</b>
	~ 0.016 e/p/s	~ 0.0005 e/p/s
Readout Noise (RMS)	10e- @ 2MHz <3.5e- @ 75kHz	
Integration Times	Up to 60 mins	
Pixel Readout Rate	2MHz / 75kHz	
Readout Modes	Full 2D Image, Flexible Programmable Binning, ROI Selection	
Trigger Mode	Internal / External	
Digital Output Format	16 bit base Camera Link	
Cooling <sup>2</sup>	-80°C with 10°C coolant	
Synchronisation	Trigger IN and OUT – TTL compatible	
Power Supply	12V DC ±10%	
Total Power Consumption <sup>3</sup>	≤ 65W (TEC ON, Steady State)	
Operating Temperature	-20°C to +55°C	
Storage Temperature	-40°C to +70°C	
Dimensions (L*W*H) <sup>4</sup>	132.67mm x 110.00mm x 110.00mm	
Weight	<1.5Kg	

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

# Ordering Information

## Camera

Eagle 42-40 X-ray BN sensor	EA4240XV-BN-CL -II
Eagle 42-40 X-ray BN-DD sensor	EA4240XV-BNDD-CL-II
Eagle 47-10 X-ray BN sensor	EA4710XV-BN-CL-II
Eagle 47-10 X-ray BN-DD sensor	EA4710XV-BNDD-CL-II
Eagle XV Power Supply Unit	EA-XV-PSU
Eagle XV Power Brick	EA-BRK-85W

## Optional Accessories

Power Feedthrough	RPL-PFC
Camera Link Feedthrough	RPL-CLFC
KF40 Liquid Feedthrough	RPL-DN40KF-WFC
2.75" CF Liquid Feedthrough	RPL-DN40CF-WFC
KF40 Trigger Feedthrough 2 SMA's	RPL-DN40KF-TFC
2.75" CF Trigger Feedthrough 2 SMA's	RPL-DN40CF-TFC
Air Side Water Tubing <sup>5</sup>	RPL-WTUBE-XV
Thunderbolt frame grabber	RPL-mf2280
EPIX® EB1 frame grabber	RPL-EPIX-EB1
EPIX® XCAP Std software	RPL-XCAP-STD
Camera Link Cable (2m) <sup>6</sup>	RPL-CL-CBL-2M
Mini PC with XCAP Std and frame grabber	RPL-PC-mf2280
Thermoelectric Water Chiller Unit <sup>7</sup>	RPL-CHILLER

Note 1: Other sensor format available.

Note 2: For important information about the vacuum pressure requirement before using the TEC, please refer to the user manual.

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 except for the coolant pipes. Please see the mechanical drawing for all measurements.

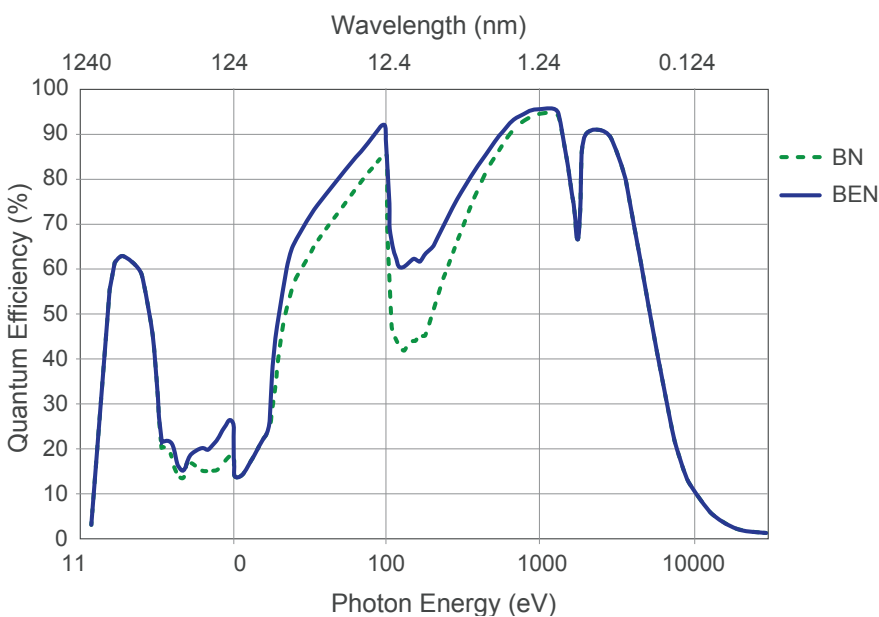
Note 5: Includes tubing and connectors.

Note 6: Longer Camera Link cable available.

Note 7: Recommended coolant flow rate >0.5l/min & cooling capacity >100W @ 20°C.

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

# Quantum Efficiency



\*Data supplied by sensor manufacturer

# Applications

## Scientific

- EUV X-Ray Spectroscopy
- Soft X-Ray Microscopy
- VUV/EUV/XUV Imaging and Lithography Crystallography
- X-Ray Diffraction (XRD) and X-Ray Fluorescence (XRF)
- X-Ray Imaging
- X-Ray Phase Contrast Imaging
- X-Ray Plasma Imaging and Diagnostics
- X-Ray source characterization
- X-Ray Tomography

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