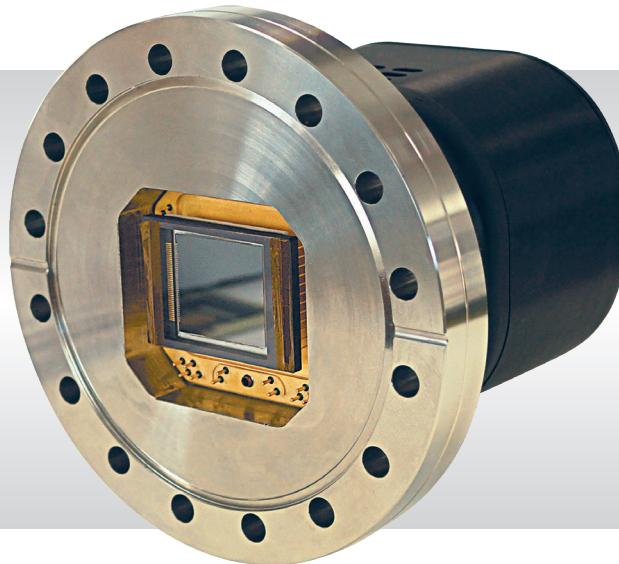


# Eagle XO

Open Front • Direct Detection CCD • High Resolution Soft X-ray Scientific Imaging •  
2048 x 2048, 2048 x 512 and 1024 x 1024 formats • 75kHz and 2MHz •



## Key Features and Benefits

### *Ultimate Sensitivity Performance*

- **Open front end**  
CF152 (6") flange for direct interfacing to vacuum chambers
- **Deep cooled using Thermoelectric cooler (TEC)**  
Minimize dark current and enable long exposure
- **Back Illuminated with no coating**  
Optimizes sensitivity and large field of view imaging
- **Ultra high intrascene dynamic range - 93dB**

Resolution	<b>2048 x 2048</b> <b>2048 x 512</b> <b>1024 x 1024</b>
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Dark Current	<b>0.0004 e/p/s</b>
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Full Well Capacity	<b>100Ke-</b>
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Readout Noise	<b>2.3e- RMS</b>
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Camera Link	<b>16 bit</b>
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## Specification for Eagle XO

Sensor <sup>1</sup>	E2V 4240 Back Illuminated, AIMO	E2V 4710 Back Illuminated, AIMO
Active Pixel	2048 × 2048	1024 × 1024
Pixel Size	13.5µm × 13.5µm	13µm × 13µm
Active Area	27.6mm × 27.6mm	13.3mm × 13.3mm
Binning	Programmable, up to 64×64 pixels	
Full Well Capacity	>80ke- (100Ke- typical)	
Shift Register Well Depth	150ke-	
Non-Linearity	< 1%	
Readout Noise (RMS)	<3.5e-@ 75kHz (2.3e- typical) <12e-@ 2MHz (9.0e- typical)	
Binned Read Noise (RMS)	16×16 binning: < 5.0e- @75kHz pixel readout rate	
Peak Quantum Efficiency (QE)	> 90%	
Spectral Response	12eV to 20keV	
Dark Current (e/p/s)	<0.0005 -80°C	
Cooling Method	Air / Liquid	
Cooling <sup>2</sup>	Active: -70°C air cooled / -80°C water cooled, ΔT > 100°C	
Flange <sup>3</sup>	CF152 (6")	
Synchronization	Trigger IN and OUT – TTL compatible	
Digital Output Format	16 bit base Camera Link	
Power Supply	12V DC ±10%	
Total Power Consumption <sup>4</sup>	<67W (TEC ON, Steady State)	
Operating Temperature Range	-20°C to +55°C	
Storage Temperature Range	-40°C to +70°C	
Dimensions (L*W*H) <sup>5</sup>	155.08mm x 140.89mm x 110.00mm	
Weight (excluding lens)	3.5kg	

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## Ordering Information

### Camera

Eagle 42-40 Open Front BN sensor	EA4240XO-BN-CL
Eagle 42-40 Open Front BN-DD sensor	EA4240XO-BNDD-CL
Eagle 47-10 Open Front BN sensor	EA4710XO-BN-CL
Eagle 47-10 Open Front BN-DD sensor	EA4710XO-BNDD-CL
Eagle XO Power Supply Unit	EAXV-PSU
Eagle XO Power Brick	EA-BRK-85W

### 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) <sup>6</sup>	RPL-CL-CBL-2M
Thermoelectric Water Chiller Unit <sup>7</sup>	RPL-CHILLER
Water tubing for Eagle (3M) <sup>8</sup>	RPL-WTUBE-EAGLE

Note 1: A range of coatings are available

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

Note 3: Other flange options available such as ISO-K-DN100.

Note 4: For more detailed power consumption values, please refer to the user manual.

Note 5: Dimensions include flange. Please refer to the mechanical drawing for full measurements.

Note 6: Longer Camera Link cable available.

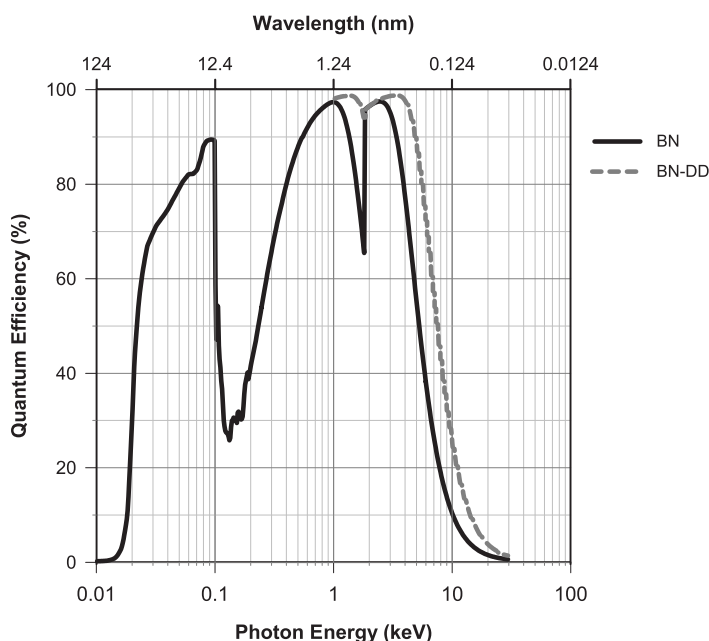
Note 7: Recommended coolant flow rate >0.5l/min & cooling capacity >100W @ 20°C.

Note 8: Includes tubing and connectors.

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



## Applications

### Scientific

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

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