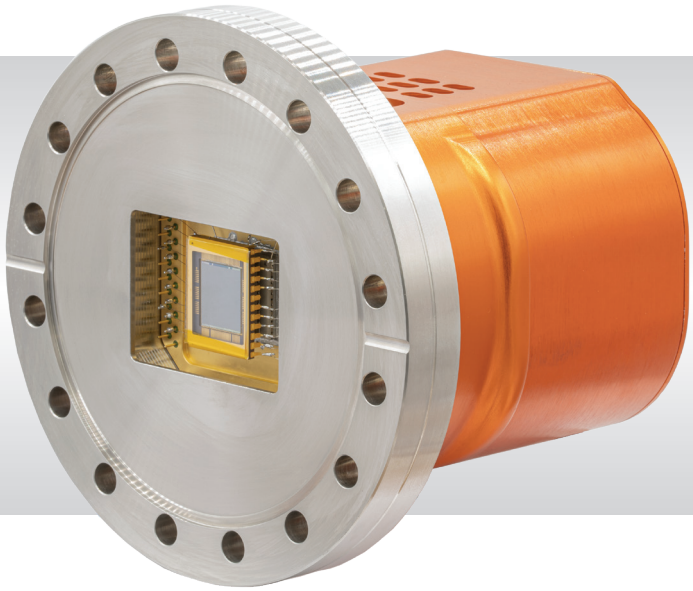
Eagle XO

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

Resolution	**2048 x 2048** **2048 x 512** **1024 x 1024**
Dark Current	**0.0004 e/p/s**
Full Well Capacity	**100ke-**
Readout Noise	**2.3e- RMS**
Camera Link	**16 bit**

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Specification for Eagle XO

Sensor[1]	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	
Cooling Method	Air / Liquid	
Cooling[2]	-80°C with 10°C coolant / -70°C air cooled with 25°C ambient	
Flange[3]	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[4]	<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)[5]	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

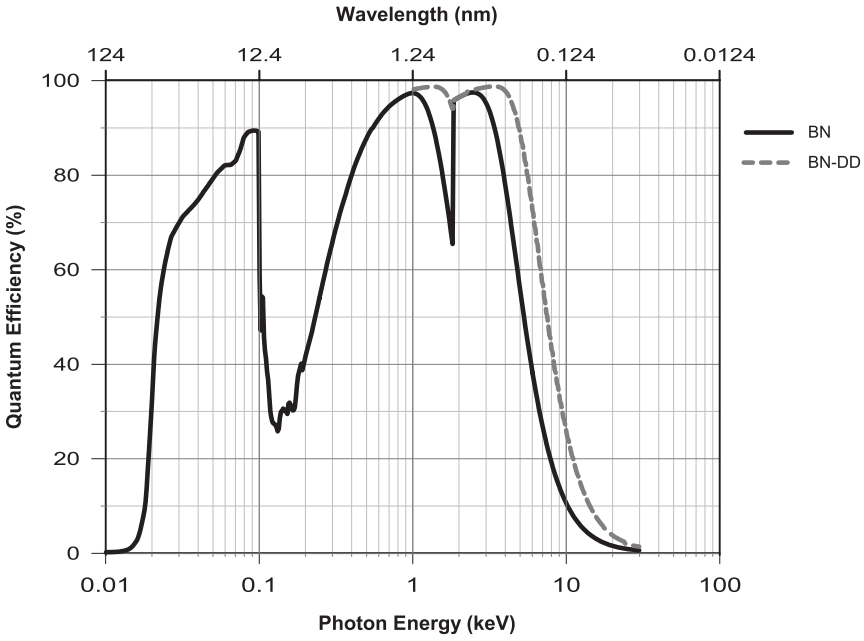
Mini PC with XCAP Std and frame grabber	RPL-PC-mf2280
Thunderbolt frame grabber	RPL-mf2280
EPIX® EB1 frame grabber	RPL-EPIX-EB1
EPIX® XCAP Std software	RPL-XCAP-STD
Camera Link Cable (2m)[6]	RPL-CL-CBL-2M
Thermoelectric Water Chiller Unit[7]	RPL-CHILLER
Water tubing for Eagle (3M)[8]	RPL-WTUBE-EAGLE

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

Quantum Efficiency



*Data supplied by sensor manufacturer

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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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