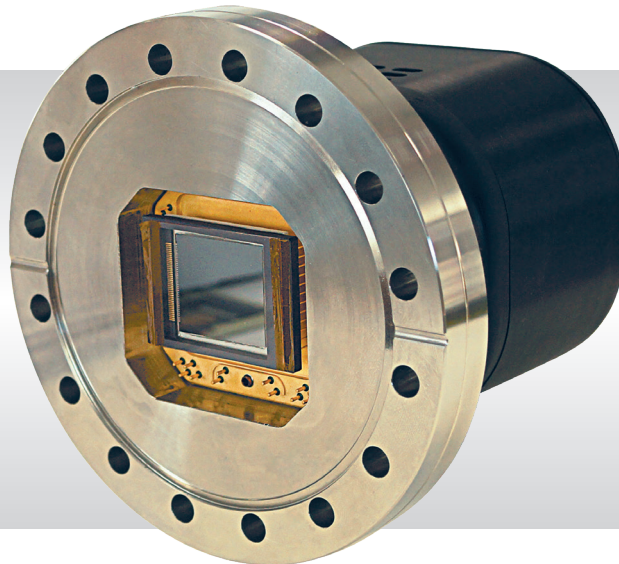


Eagle XO

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	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
-------------	---------------

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 -80°C	
Cooling Method	Air / Liquid	
Cooling ²	Active: -70°C air cooled / -80°C water cooled, ΔT > 100°C	
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	

Raptor Photonics Limited reserves the right to change this document at any time without notice and disclaims liability for editorial, pictorial or typographical errors.

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) 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.

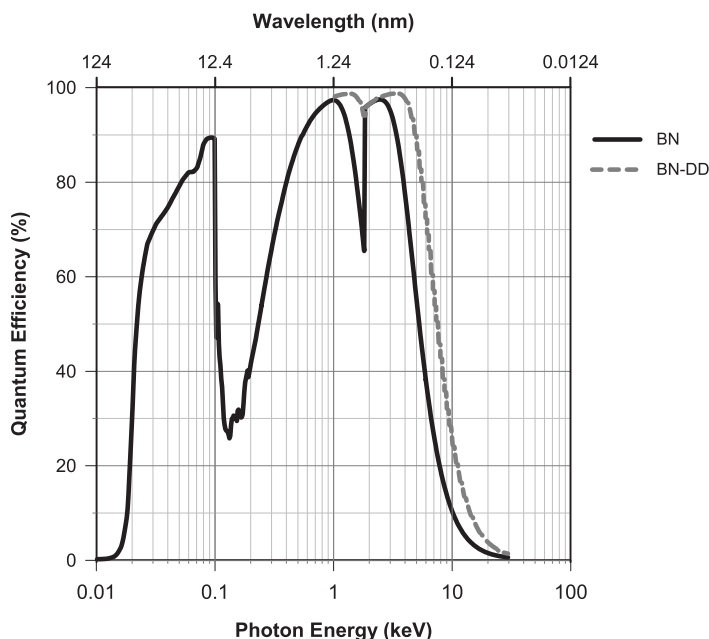
Note 7: Recommended coolant flow rate >0.5l/min & cooling capacity >100W @ 20°C.

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



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

Document #: INEA4240XO-CL 1019R3