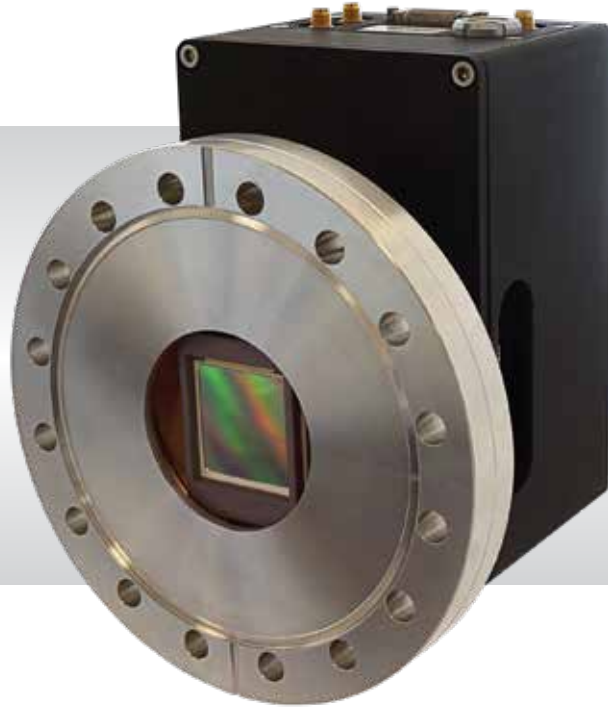


Eagle XO

Open Front, Direct Detection CCD

2048 x 2048, 2048 x 512 and 1024 x 1024 formats • 75kHz and 2MHz •

High resolution soft X-ray scientific imaging



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 | 16bit |
|-------------|--------------|

Specification for Eagle XO

| Sensor ¹ | E2V 4240 Back Illuminated, AIMO | E2V 4210 Back Illuminated, AIMO | E2V 4710 Back Illuminated, AIMO |
|------------------------------|---|------------------------------------|------------------------------------|
| Active Pixel | 2048 × 2048 | 2048 × 512 | 1024 × 1024 |
| Pixel Size | 13.5µm × 13.5µm | | 13µm × 13µm |
| Active Area | 27.6mm × 27.6mm | 27.6mm × 6.9mm | 13.3mm × 13.3mm |
| Binning | Programmable, up to 64×64 pixels | | |
| Full Well Capacity | 100ke- | | |
| Shift Register Well Depth | 150ke- | | |
| Non-Linearity | < 1% | | |
| Readout Noise (RMS) | 2.3e- @ 75kHz pixel readout rate 9.0e- @ 2MHz pixel readout rate | | |
| Binned Read Noise (RMS) | 16×16 binning: < 5.0e- @75kHz pixel readout rate | | |
| Peak Quantum Efficiency (QE) | > 90% | | |
| Spectral Response | 1.2eV to 20KeV | | |
| Dark Current (e/p/s) | <0.0004 -75°C | | |
| Cooling Method | Air / Liquid | | |
| Cooling | Active: -75°C air cooled / -80°C water cooled, ΔT > 100°C | | |
| Flange ² | CF152 (6") | | |
| Synchronization | Trigger IN and OUT – TTL compatible | | |
| Digital Output Format | 16-bit Camera Link (base) | | |
| Power Supply | 12V DC ±10% | | |
| Total Power Consumption | TEC OFF < 9W TEC ON < 70W | | |
| Operating Temperature Range | -20°C to +55°C | | |
| Storage Temperature Range | -40°C to +70°C | | |
| Dimensions | 155.08mm x 140.89mm x 110.00mm | | |
| Weight (excluding lens) | 5.0kg [11lb] | | |

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 XO Open Front CCD 4MP | EA4240XO-BN-CL |
| Eagle XO Open Front CCD 1MP | EA4210XO-BN-CL |
| Eagle XO Open Front CCD 1MP | EA4710XO-BN-CL |
| Eagle XO Power Supply Unit | EA-XV-PSU |
| Eagle XO Power Brick | EA-BRK-85W |

Optional Accessories

| | |
|---|-----------------|
| Mini PC with Xcap STD and frame grabber | RPL-PC-EL1 |
| EPIX® EB1 base CL card | RPL-EPIX-EB1 |
| EPIX® XCAP STD software | RPL-XCAP-STD |
| Camera Link Cable, 2m ² | RPL-CL-CBL-2M |
| Thermoelectric Water Chiller Unit | RPL-CHILLER |
| Water tubing for Eagle (3M) M-M | RPL-WTUBE-EAGLE |

Note 1: A range of coatings are available

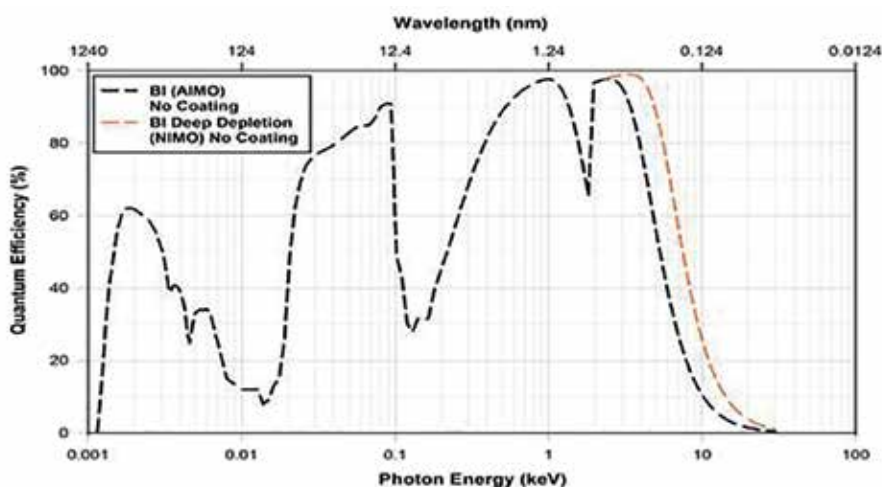
Note 2: Other flange options available such as ISO-K-DN100-

Note 3: Longer CL cable available

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

Detailed technical drawings
can be downloaded at
www.raptorphotonics.com

Quantum Efficiency



Applications

- 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 1118