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

<table>
<thead>
<tr>
<th>Resolution</th>
<th>2048 x 2048</th>
<th>2048 x 512</th>
<th>1024 x 1024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark Current</td>
<td>0.0004 e/p/s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Well Capacity</td>
<td>100ke-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Readout Noise</td>
<td>2.3e- RMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camera Link</td>
<td>16 bit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Specification for Eagle XO

Quantum Efficiency

<table>
<thead>
<tr>
<th>Wavelength (nm)</th>
<th>BN</th>
<th>BN-DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>124</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>12.4</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>1.24</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>0.124</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>0.0124</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

Sensor
- E2V 4240
  - Back Illuminated, AIMO
- E2V 4710
  - Back Illuminated, AIMO

Active Pixel
- 2048 x 2048
- 1024 x 1024

Pixel Size
- 13.5μm x 13.5μm
- 13μm x 13μm

Active Area
- 27.6mm x 27.6mm
- 13.3mm x 13.3mm

Binning
- Programmable, up to 64 x 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 x 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

Cooling2
- Active: -70°C air cooled / -80°C water cooled, ΔT > 100°C

Flange3
- CF152 (6”)

Synchronization
- Trigger IN and OUT – TTL compatible

Digital Output Format
- 16 bit base Camera Link

Power Supply
- 12V DC ±10%

Total Power Consumption4
- <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’)
- 155.08mm x 140.89mm x 110.00mm

Weight (excluding lens)
- 3.5kg

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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

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)
  - RPL-CL-CBL-2M
- Thermoelectric Water Chiller Unit2
  - RPL-CHILLER
- Water tubing for Eagle (3M)
  - 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

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