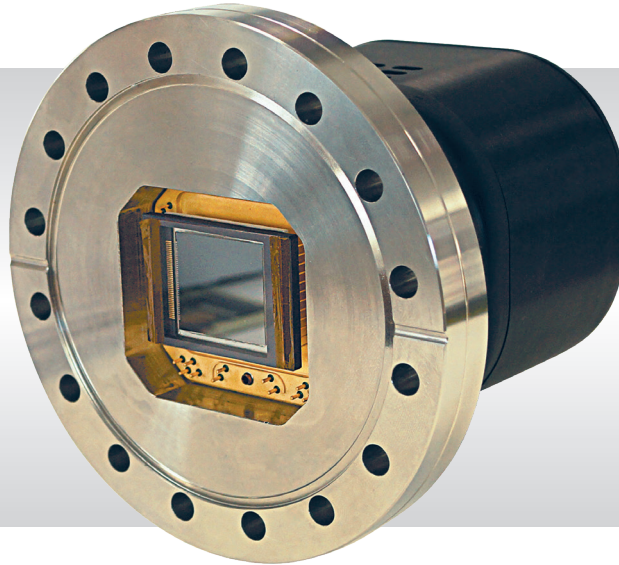


Falcon III – XO

Open Front • Digital Scientific Frame Transfer EMCCD •
1024 x 1024 • 10µm x 10µm Pixel Pitch • Cooled to -70°C • 31Hz in Full Frame •



Key Features and Benefits

Fastest Scientific X-ray camera on the market

- **Open front end**
CF152 (6") flange for direct interfacing to vacuum chambers
- **Back Illuminated with no coating**
Optimises sensitivity and large field of view imaging from 12eV to 20keV
- **Fast frame in full resolution: 31Hz**
Ideal for full frame imaging with fast repetition lasers
- **Deep cooled to -70°C**
For minimal background events

Resolution	1024 x 1024
Pixel Size	10µm x 10µm
Readout Noise	<1e-
Frame Rate	31Hz
Camera Link	16 bit

PRELIMINARY

Specification for Falcon III - XO

Sensor Type	1" Back Thinned Frame Transfer EMCCD
Active Pixel	1024 x 1024
Pixel Size	10 μ m x 10 μ m
Active Area	10.2mm x 10.2mm
Full Well Capacity	35ke-
Shift Register Well Depth	200ke-
Non-Linearity	<1%
Readout Noise (RMS) ¹	EM Gain ON: <1 electrons EM Gain OFF: <50 electrons
Full Resolution Frame Rate	31Hz
Exposure Time ²	31.62ms to 3.8hrs
Dark Current (e/p/s)	0.001 @ -70°C
Digital Output Format	16 bit Camera Link (base configuration)
Peak Quantum Efficiency	>90%
Spectral Response	12eV to 20KeV
Cooling	-70°C with liquid cooling
Binning	1x1 up to 32x32
Synchronisation	Trigger IN and OUT - TTL compatible
Power Supply	12V DC \pm 10%
Total Power Consumption	<75W (TEC ON, Steady State)
Operating Case Temperature	-20°C to +55°C
Storage Temperature	-30°C to +60°C
Dimensions (L*W*H)	120.9mm x 140.2mm x 113.1mm
Weight	<2.5kg
Flange ³	CF152 (6")

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Ordering Information

Camera

Falcon III -XO EMCCD 1MP	FA351XO-BN-CL
Power Supply Unit	FA-PSU-III

Optional Accessories

Mini PC with XCAP Std and frame grabber	RPL-MINI-EL1
EPIX® EB1 frame grabber	RPL-EPIX-EB1
EPIX® XCAP Std software	RPL-XCAP-STD
Camera Link Cable (2m) ⁴	RPL-CL-CBL-2M
Thermoelectric Water Chiller Unit ⁵	RPL-CHILLER
Chiller Tubing (3m) ⁶	RPL-WTUBE-NINOX

Note 1: Measured at 10MHz pixel readout speed.

Note 2: In practice, the maximum exposure time will be dark current limited.

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

Note 4: Longer Camera Link cable available on request.

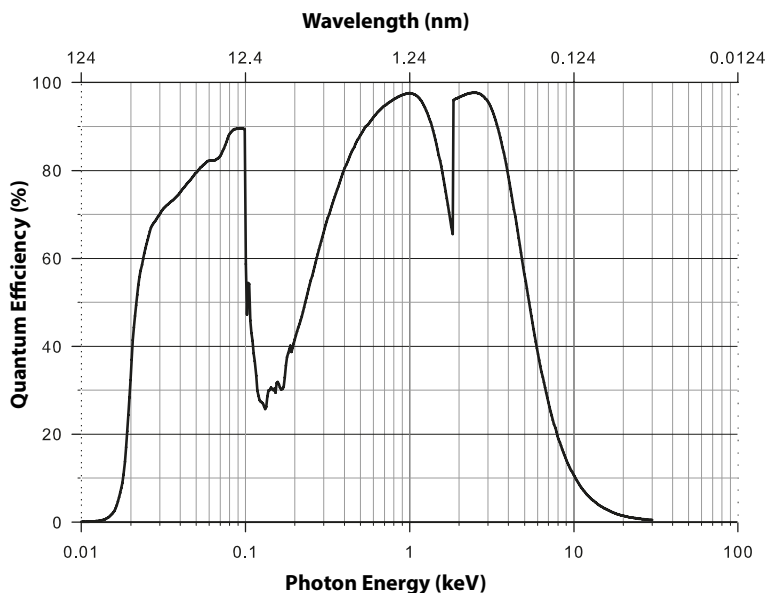
Note 5: Recommended coolant flow rate >0.5l/min & cooling capacity >100W @ 20°C.

Note 6: 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 and fluorescence (XRF)
- X-Ray Diffraction (XRD)
- X-ray microscopy
- RIXS
- VUV/EUV/XUV Spectroscopy
- Thin films and nanofibers
- Material Composition and Structure
- X-ray plasma diagnostics
- Holography and lithography

Document #: INFA351XO-BN-CL 0120



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