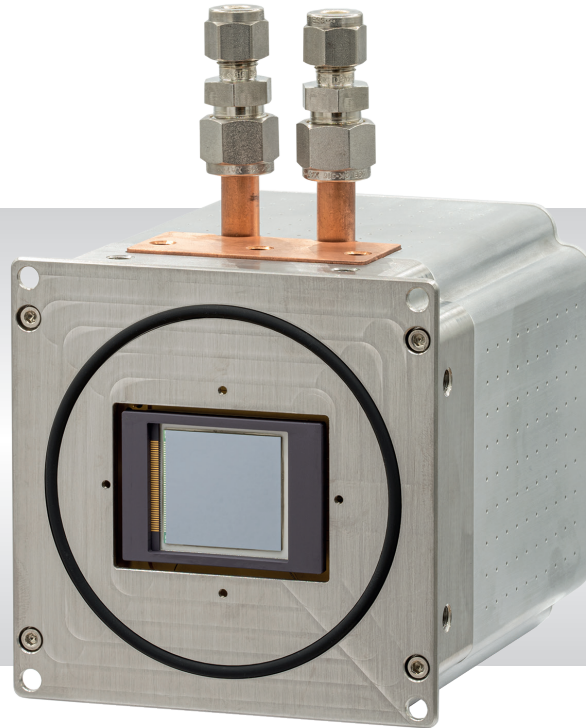


Falcon III – XV

In-Vacuum • Scientific Frame Transfer EMCCD •

• 1024 x 1024 • 10µm x 10µm Pixel Pitch • Cooled to -70°C • 31Hz Full Frame •



Key Features and Benefits

Fastest scientific x-ray camera on the market

- **Back illuminated uncoated sensor**
Optimises sensitivity and large field of view imaging from 12eV to 20keV
- **Active / Passive cooling down to -70°C**
Minimizing noise with Raptor cooling technology
- **Fast frame rate in full frame resolution: 31Hz**
Ideal for fast repetition rates
- **Full range of Accessories**
Including vacuum feedthroughs, cables, tubing etc

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

Specification for Falcon III – XV

Sensor Type	1" Back Thinned Frame Transfer EMCCD
Active Pixel	1024 x 1024
Pixel Size	10µm x 10µm
Active Area	10.2mm x 10.2mm
Full Well Capacity	>29ke-
Shift Register Well Depth	200ke-
Non-Linearity	<1%
Readout Noise (RMS) ¹	EM Gain ON: <1e- EM Gain OFF: <60e-
Full Resolution Frame Rate	31Hz
Exposure Time ²	1ms to >1hr
Dark Current (e/p/s)	0.001 @ -70°C
Digital Output Format	16 bit Camera Link (Base configuration / SDR)
Peak Quantum Efficiency	>95%
Spectral Response	12eV - 20keV
Cooling ³	-70°C with 20°C liquid
Binning	1x1 up to 8x8
Synchronisation	Trigger IN and OUT - TTL compatible
Power Supply	12V DC ±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) ⁴	132.08mm x 110.00mm x 110.00mm
Weight	<1.5kg

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

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

Ordering Information

Camera

Falcon III –XV EMCCD 1MP	FA351XV-BN-CL
Power Supply Unit	FA-PSU

Optional Accessories

Power Feedthrough	RPL-PFC
Camera Link Feedthrough	RPL-CLFC
KF40 Liquid Feedthrough	RPL-DN40KF-WFC
2.75" CF Liquid Feedthrough	RPL-DN40CF-WFC
KF40 Trigger Feedthrough 2 SMAs	RPL-DN40KF-TFC
2.75" CF Trigger Feedthrough 2 SMAs	RPL-DN40CF-TFC
Air Side Water Tubing ⁵	RPL-WTUBE-XV
EPIX® EB1 frame grabber	RPL-EPIX-EB1
EPIX® XCAP Std software	RPL-XCAP-STD
Camera Link Cable (2m) ⁶	RPL-CL-CBL-2M
Mini PC with XCAP Std and frame grabber	RPL-PC-EL1
Thermoelectric Water Chiller Unit ⁷	RPL-CHILLER

Note 1: Measured at 10MHz pixel readout speed.

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

Note 3: For important information about the vacuum pressure requirement before using the TEC, please refer to the user manual.

Note 4: Dimensions include all connector parts on the camera interface except for the coolant pipes. Please see the mechanical drawing for all measurements.

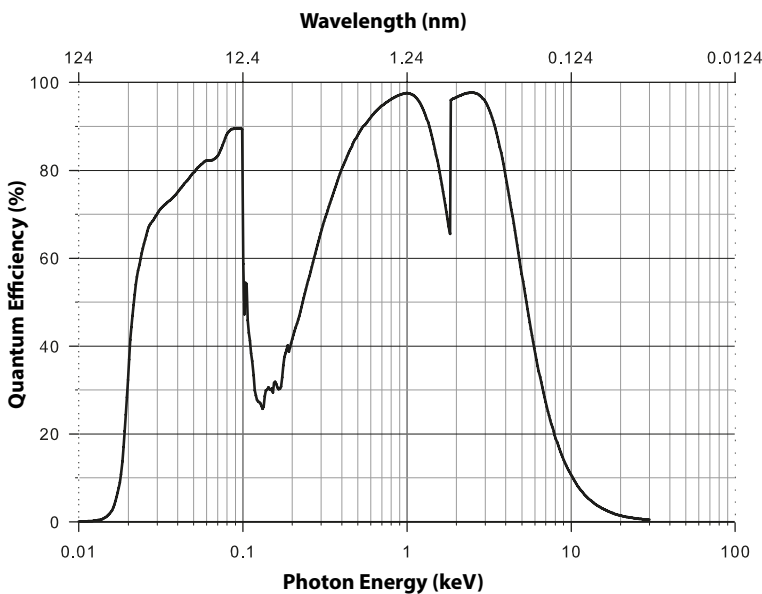
Note 5: Includes tubing and connectors.

Note 6: Longer Camera Link cable available.

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

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

Quantum Efficiency



* Data supplied by sensor manufacturer.

Applications

Scientific

- EUV X-Ray Spectroscopy
- Soft X-Ray Microscopy
- VUV/EUV/XUV Imaging and Lithography Crystallography
- X-Ray Diffraction (XRD) and X-Ray Fluorescence (XRF)
- X-Ray Imaging
- X-Ray Phase Contrast Imaging
- X-Ray Plasma Imaging and Diagnostics
- X-Ray source characterization
- X-Ray Tomography

Document #: USFA351XV-BN-CL 1120



Willowbank Business Park
Larne, Co Antrim
BT40 2SF,
Northern Ireland

Raptor Photonics Ltd. (UK)
T: +44(0)2828 270 141
E: sales@raptorphotronics.com
www.raptorphotronics.com

Raptor Photonics Inc. (USA)
T: +1 (877) 230-4836
E: sales@raptorphotronics.com
www.raptorphotronics.com

