

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	10 μ m x 10 μ m
Active Area	10.2mm x 10.2mm
Full Well Capacity	>20ke-
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 \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) ⁴	168.7mm x 120.0mm x 118.6mm
Weight	<1.5kg

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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
Thunderbolt frame grabber	RPL-mf2280
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-mf2280
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.

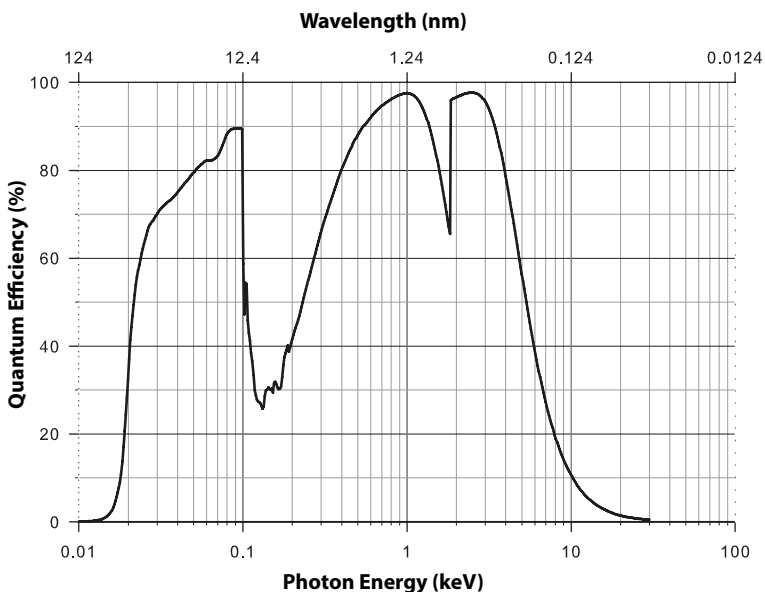
Note 5: Includes tubing and connectors.

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.raptorphotonics.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

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