

# Falcon III

Digital Scientific Frame Transfer EMCCD

1024 x 1024 • 10µm x 10µm pixels • Cooled to -70°C • 1MP Scientific •



## Key Features and Benefits

*NEXT GENERATION* photon counting sensitivity

- **Lower read noise of <1e-**  
Best sensitivity of any camera technology
- **Faster readout in full resolution**  
x 3 times faster than previous generations
- **Higher EM gain of x 5000**  
See single photon events
- **Up to 95% QE from back-illuminated sensor**  
Optimum Photon collection
- **Strong UV and NIR reponse and ultrawide bandwidth**  
From 200nm through to 1100nm
- **Deep cooled to -70°C**  
For minimal background events

**EMCCD - GEN III**  
**A NEW GENERATION**

*The Photon Harvester!*

Resolution	<b>1024 x 1024</b>
Pixel Size	<b>10µm x 10µm</b>
Readout Noise	<b>&lt;1e-</b>
Frame Rate	<b>34fps</b>
Camera Link	<b>16bit</b>

## Specification for Falcon III

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	35ke-
Shift Register Well Depth	200ke-
Non-Linearity	<1%
Readout Noise (RMS)	EM Gain ON: <1 electrons EM Gain OFF: <50 electrons
Full Resolution Frame Rate	34fps
Exposure Time	1ms to >1hr
Dark Current (e/p/s)	0.001 @ -70°C
Digital Output Format	16 bit Camera Link (base configuration)
Peak Quantum Efficiency	95%
Spectral Response	180 - 1100nm
Cooling	-70°C with 10°C coolant
Binning	1x1 up to 32x32
Lens Mount	C-Mount
Synchronisation	Trigger IN and OUT - TTL compatible
Power Supply	12V DC ±0.5V
Total power consumption	<100W
Operating case temperature	-20°C to +55°C
Storage Temperature	-30°C to +60°C
Dimensions (L*W*H) <sup>1</sup>	129mm x 112mm x 94mm
Weight (no lens)	<1.5Kg

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## Ordering Information

### Camera

Falcon III EMCCD 1MP digital camera	FA351V-BV-CL
Power Supply Unit	RPL-HR4-K

### 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 <sup>2</sup>	RPL-MCL-CBL-2M
Thermoelectric Water Chiller Unit	RPL-CHILLER
Chiller Tubing	RPL-WTUBE-NINOX
Optical Lenses <sup>3</sup>	RPL-xx-xxxx

Note 1: Dimensions include all connector parts on camera interface

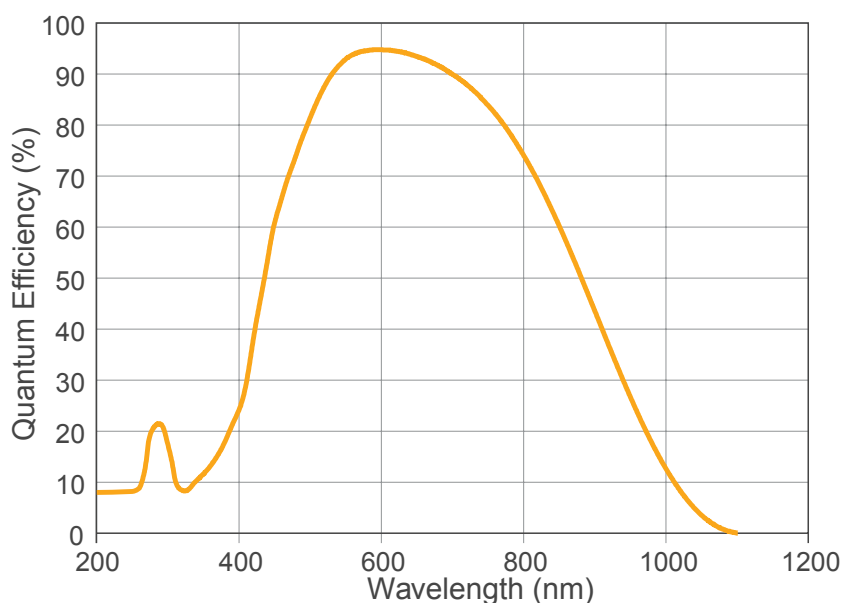
Note 2: Longer CL cable available up to 25M

Note 3: Please consult us to check our range of lenses

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

Detailed technical drawings  
can be downloaded at  
[www.raptorphotonics.com](http://www.raptorphotonics.com)

## Quantum Efficiency



## Applications

- Adaptive Optics and Astronomy
- Calcium signaling
- Fluorescence imaging / spectroscopy
- Flow cytometry
- FRET / FRAP / TIRF
- Genome sequencing
- High content screening
- High resolution fluorescence imaging
- Hyperspectral imaging
- Live cell imaging
- Photon counting
- Single molecule detection
- Solar cell inspection
- X-ray & High energy

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