

# Kestrel

Digital Scientific Frame Transfer EMCCD

128 x 128 • 24µm x 24µm pixels • Cooled to -80°C •



PRELIMINARY

## Key Features and Benefits

*Ultra low noise readout with THE FASTEST speeds*

- **500 frames per second**  
Full resolution speed making it the fastest EMCCD on the market
- **128 x 128 Back-thinned EMCCD sensor**  
Enables optimum image resolution in low light imaging applications
- **16 bit Camera Link output**  
Realtime imaging for low latency photon to digital image
- **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 -80°C**  
For minimal background events

Resolution	<b>128 x 128</b>
Pixel Size	<b>24µm x 24µm</b>
Readout Noise	<b>&lt;1e</b>
Frame Rate	<b>500fps</b>
Camera Link	<b>16bit</b>

## Specification for Kestrel

Sensor Type	1/3" Back Thinned Frame Transfer EMCCD
Active Pixel	128 x 128
Pixel Size	24µm x 24µm
Active Area	3.1mm x 3.1mm
Full Well Capacity	160ke-
Shift Register Well Depth	800ke-
Non-linearity	<1%
Readout Noise (RMS)	EM Gain ON: <1 electrons EM Gain OFF: <60 electrons
Full Resolution Frame Rate	>500fps
Dark Current (e/p/s)	0.001 @ -80°C
Digital Output Format	16 bit Camera Link (base configuration)
Peak Quantum Efficiency	95%
Spectral Response	180 - 1100nm
Cooling	-95°C with +10°C coolant
Binning	1 x 1 up to 32 x 32
Lens Mount	C-Mount
Synchronisation	Trigger IN and OUT - TTL compatible
Power Supply	12V DC ±10%
Total power consumption	<80W
Operating case temperature	-20°C to +55°C
Storage Temperature	-30°C to +60°C
Dimensions	129mm x 112mm x 94mm
Weight (no lens)	< 1.5kg

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## Ordering Information

### Camera

Kestrel EMCCD digital camera	KE60V-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: Extended operating temperature range on request.

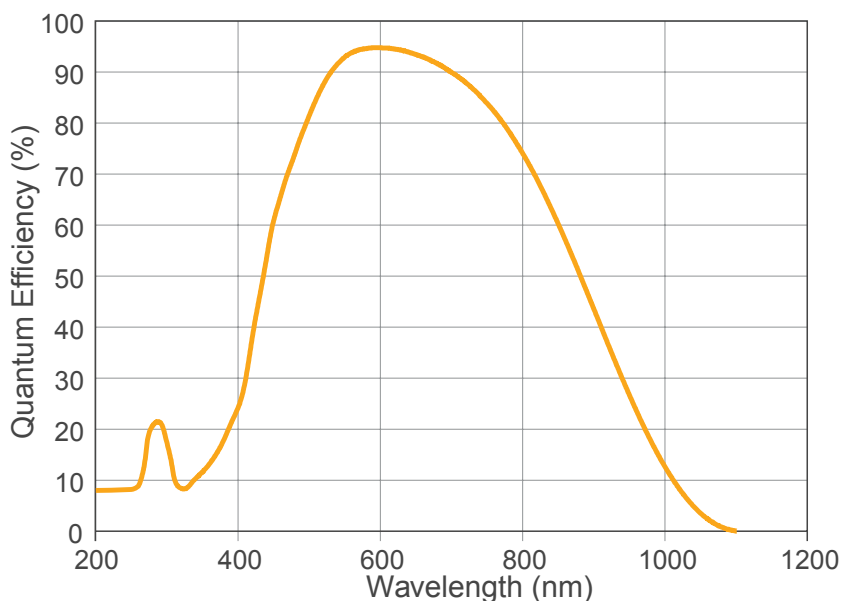
Note 2: Longer CL cable available up to 25M

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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