

# Kestrel 1000

Digital Scientific Frame Transfer EMCCD

128 x 128 • 24 $\mu$ m x 24 $\mu$ m pixels • Cooled to -20°C • 1800fps •



## Key Features and Benefits

*Ultra low noise readout with THE FASTEST speeds*

- **Up to 1800 fps with ROI, 1000 fps in full resolution**

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 VIS and NIR response and ultrawide bandwidth**

From 350nm through to 1100nm

Resolution	<b>128 x 128</b>
Pixel Size	<b>24<math>\mu</math>m x 24<math>\mu</math>m</b>
Readout Noise	<b>&lt;1e</b>
Frame Rate	<b>1,000fps</b>
Camera Link	<b>16bit</b>

## Specification for Kestrel 1000

Sensor Type	1/8" 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	100ke-
Non-linearity	<1%
Readout Noise (RMS)	EM Gain ON: <1e- EM Gain OFF: 290e- Typical
Full Resolution Frame Rate	1,000fps
Dark Current (e/p/s)	<1 @ -20°C
Digital Output Format	16 bit Camera Link (base configuration)
Peak Quantum Efficiency	95%
Spectral Response	350 - 1100nm
TE Cooling	-20°C With Fan / liquid cooled @ 25°C Ambient
Binning	1x1 up to 2x2
Lens Mount	C-Mount
Synchronisation	Trigger IN and OUT - TTL compatible
Power Supply	12V DC ±10%
Total Power Consumption	<80W
Operating Case Temperature <sup>1</sup>	-20°C to +55°C
Storage Temperature	-30°C to +60°C
Dimensions (L*W*H) <sup>2</sup>	121mm x 140mm x 113mm
Weight (no lens)	< 1.5kg

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## Ordering Information

### Camera

Kestrel 1000 EMCCD digital camera KE60V1000-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

MDR-SDR Camera Link Cable, 2m<sup>3</sup> RPL-MCL-CBL-2M

Thermoelectric Water Chiller Unit RPL-CHILLER

Chiller Tubing RPL-WTUBE-NINOX

Optical Lenses<sup>4</sup> RPL-xx-xxxx

Note 1: Extended operating temperature range on request.

Note 2: Dimensions include all connector parts on camera interface

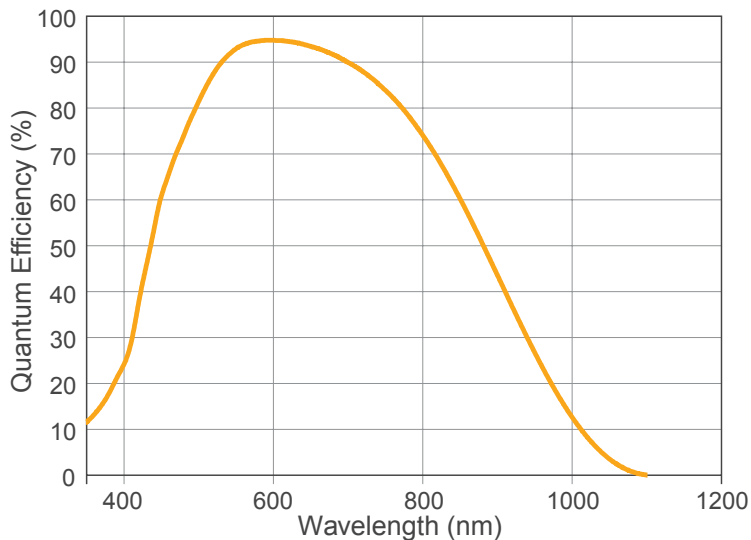
Note 3: Longer CL cable available up to 25M

Note 4: 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



\*Data supplied by sensor manufacturer

## Applications

- Adaptive Optics and Astronomy
- Calcium signaling
- High resolution fluorescence imaging
- Hyperspectral imaging
- X-ray & High energy
- Particle Image Velocimetry
- High speed object tracking

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