

## ULTRA LOW NOISE ULTRA HIGH SPEED SWIR CAMERA



SWIR  
0.8 - 2.5  $\mu\text{m}$



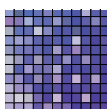
3500 FPS



Subelectron RON + Dark



320 x 256 e-APD MCT,  
24  $\mu\text{m}$  pixel pitch



Multiple Readout Modes

**FASTEST AND LOWEST NOISE MCT**  
FOR HIGH DEMANDING SCIENTIFIC APPLICATION



### APPLICATIONS

#### ASTRONOMY:

Adaptive Optics for Astronomy  
Astronomical Observations  
with Interferometers  
Speckle Interferometry  
Space Debris Tracking  
Fringe Tracking

#### LIFE SCIENCES:

Cellular Microscopy  
Fluorescence Microscopy  
Raman Spectroscopy  
Hyperspectral Imaging  
OCT imaging

#### INDUSTRY:

Semiconductor inspection

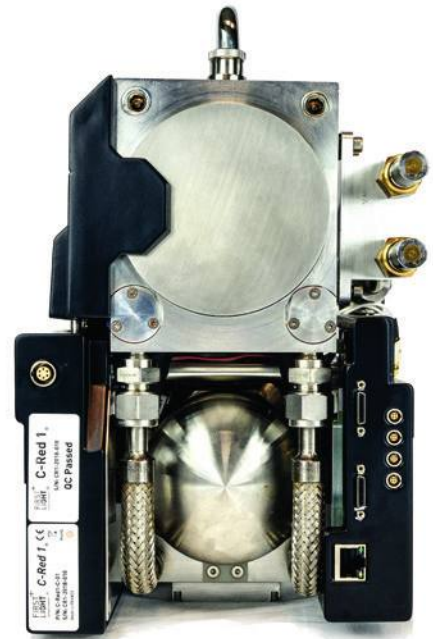
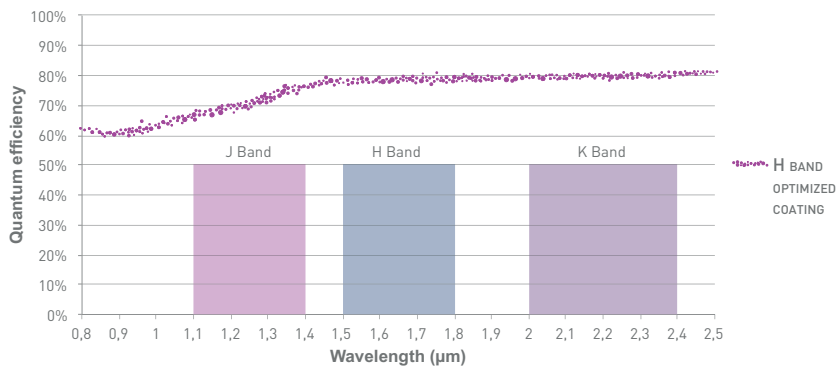
# C- RED One PERFORMANCES

TEST MEASUREMENT*	Result	Unit
Maximum speed Full Frame	3500	FPS
Readout Noise at 3500 FPS and gain ~ 30	<1	e-
Dark current looking at black body at a temperature of 80K and e-APD gain x10	<80	e-/p/s
Quantization	16	bit
Detector Operating Temperature (No LN)	80	K
Flat Quantum Efficiency from 1.1 μm to 2.4 μm (J, H, K)	>60	%
Operability ± 30%	99.3	%
Excess noise Factor F	<1.25	n/a

\*Average values observed

ADDITIONAL FEATURES
Output : Camera Link® Full
Optical Interface : T-Mount
Multiple Readout Modes <ul style="list-style-type: none"> <li>•Global reset</li> <li>•Rolling reset</li> <li>•Single, CDS or multiple non destructive reads</li> </ul>
ROI
Ultra low latency Camera Link® full interface
Clock & Trigger input/output for synchronous operation
Custom design available upon request
Embedded cold blocking filters

TYPICAL QE OF SAPHIRA E-APD



SWaP : H 238 x W 180 x L 365 mm, 19.4 kg, up to 300 W

## First Light Imaging SAS

Europarc Sainte Victoire Bât 6, Route de Valbrillant, Le Canet 13590  
Meyreuil FRANCE  
Tel.: + 33 4 42 61 29 20  
[www.first-light-imaging.com](http://www.first-light-imaging.com)  
[contact@first-light.fr](mailto:contact@first-light.fr)

## First Light Imaging Corp.

185 Alewife Brook Parkway, Suite 210, Cambridge, MA 02138 USA  
[www.first-light.us](http://www.first-light.us)



This project leading to this application has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement N°673944

