

## VERY HIGH SPEED ULTRA LOW DARK SWIR CAMERA



SWIR  
0.9 - 1.7  $\mu\text{m}$



600 FPS



<30 e- RON + ultra low dark



640 x 512 InGaAs,  
15  $\mu\text{m}$  pixel pitch



93 dB and true 16 bits  
High Dynamic Range



SDK compatible with  
 $\mu$ Manager, LabVIEW,

**LONG EXPOSURE TIMES OPTIMISATION**  
FOR LOW LIGHT SWIR APPLICATIONS



### APPLICATIONS

#### ASTRONOMY:

Adaptive Optics  
Astronomical Observations  
Hyperspectral Imaging  
Laser Communications

#### INDUSTRY:

Semiconductor Inspection  
Quality control  
Production control

#### LIFE SCIENCES:

OCT Imaging  
Bio Imaging  
Spectroscopy  
Fluorescence Microscopy

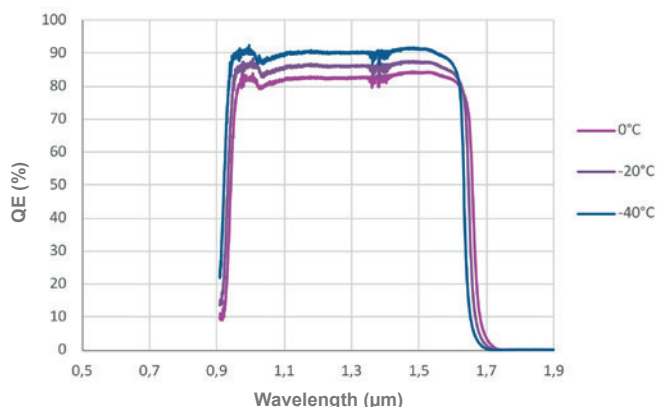
# C- RED 2 PERFORMANCES

FEATURES*	Result	Unit
Maximum speed Full Frame	600	FPS
Readout Noise at 400/600 FPS Full Frame @ 50µs Tint	< 30	e-
Dark Current @ - 40°C	< 600	e-/p/s
Quantization	14	bit
Flat Quantum Efficiency 1.0 to 1.65 µm	> 70	%
Operability (at 20°C)	99.5	%
Image Full well capacity at low gain, 600 fps	1400	ke-
Image Full well capacity at high gain, 600 fps	33	ke-
<b>Maximum speed in 32 x 4 (min)(option 600 fps)</b>	<b>32066</b>	<b>FPS</b>
Maximum speed in 320 x 256 (option 600 fps)	1779	FPS

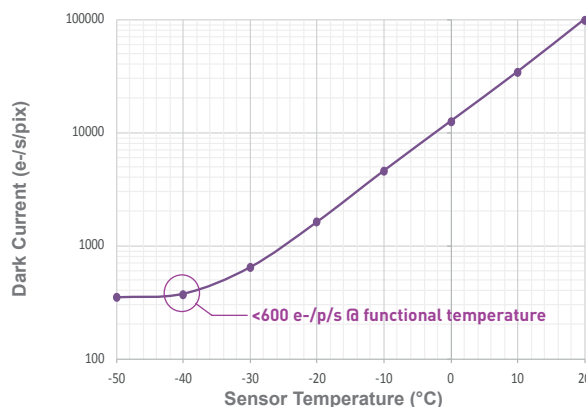
\* Average values observed

ADDITIONAL FEATURES
Outputs: USB 3.1 Gen 1 or CL
Optical interface: C-Mount
LVTTTL/LVDS synchronization
HDR : 93 dB and 16 bits
Long exposure times optimization up to 60 seconds
Software: SDK (C, C++, Python) / LabVIEW / µManager

QUANTUM EFFICIENCY



DARK VS SENSOR TEMPERATURE



FRAME RATE TABLE AT 600 FPS READOUT SPEED CAMERA LINK® OUTPUT

		Columns					
		32	64	128	256	512	640
Lines	4	32 066	31 512	30 458	28 548	25 367	24 029
	8	28 108	27 348	25 945	23 532	19 840	18 397
	16	22 542	21 631	20 015	17 413	13 819	12 526
	32	16 147	15 254	13 736	11 455	8 599	7 646
	64	10 302	9 596	8 440	6 801	4 898	4 297
	128	5 975	5 509	4 765	3 752	2 632	2 291
	256	3 247	2 975	2 547	1 978	1 367	1 184
512	1 697	1 549	1 319	1 016	697	602	

For USB 3 Output: Max 9999 FPS



SWaP : H55 x W75 x L140 mm, 0,9 kg, up to 90W

## 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 is supported by the «Investments for the future» program and the Provence Alpes Côte d'Azur Region, in the frame of the CPER

