

## VERY HIGH SPEED COMPACT SWIR CAMERA



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



600 FPS



<40 e- RON



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, MatLab,

**LOW POWER UNCOOLED InGaAs**  
WITH ADAPTATIVE BIAS



Adaptive bias (*Pat. Pend.*) replaces temperature stabilization with bias image automatically generated

### APPLICATIONS

#### INDUSTRY:

Non-destructive Testing  
Quality and Production control  
Waste sorting  
Welding

#### ASTRONOMY:

Free Space Optics  
Laser alignment  
Laser Beam Profiling

#### SURVEILLANCE:

Thermography  
Unmanned aerial vehicle  
Maritime surveillance

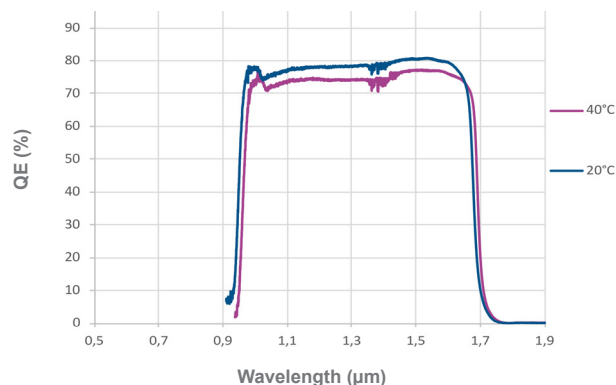
# C-RED 3 PERFORMANCES

FEATURES*		Result	Unit
Sensor size		640 x 512	pixels
		0.3	Mp
Pixel pitch		15	µm
Maximum speed Full Frame		600	FPS
Readout Noise at high gain, Tint at 50 µs, 600 FPS Full Frame		< 40	e-
Quantization		14	bit
Flat Quantum Efficiency 1.0 to 1.65 µm		> 70	%
Operability due to signal response (pixels with signal $\pm 0.3$ *median at 20°C)		> 99.5	%
Image Full well capacity	low gain	1400	ke-
	med gain	120	ke-
	high gain	33	ke-
<b>Maximum speed in 32 x 4 (min)</b>		<b>32066</b>	<b>FPS</b>
Maximum speed in 320 x 256		1779	FPS

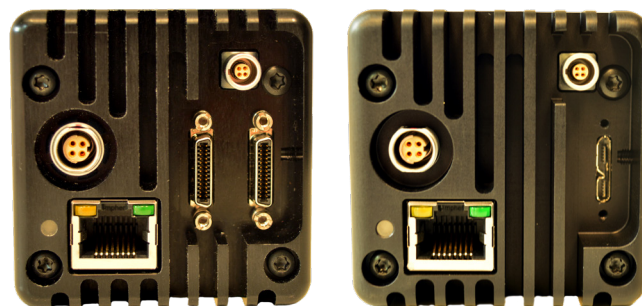
\* Average values observed

ADDITIONAL FEATURES	
Outputs: USB 3.1 Gen 1 or CameraLink®	
Possible optical interface: C-Mount, CS-Mount, T-Mount	
LVTTTL Synchronization (5 V tolerant)	
<b>HDR : 93 dB and 16 bits</b>	
<b>Adaptive bias</b>	
Liquid cooling optional with cooling plate for optimized performances	
<b>Software: Graphical User Interface:</b> First Light Vision - <b>Software Development Kit:</b> (C, C++, C#, Python, MatLab) / LabVIEW / µManager / Halcon	

## QUANTUM EFFICIENCY



## TWO INTERFACES AVAILABLE



With Camera Link® Output

With USB 3 Output

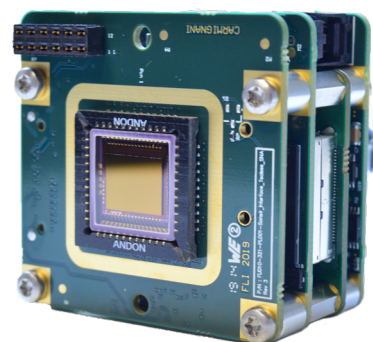
SWaP : H55 x W55 x L60 mm, 230 g, 6.5W typical

## 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

## OEM MODULE AVAILABLE



OEM version without housing, 100 g

### First Light Imaging SAS

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