FIRST LIGHT
ADVANCED IMAGERY

C-RED 2 ER

Product Datasheet / January 2022

1.9 µm & 2.2 µm EXTENDED InGaAs SWIR CAMERA

1.1 - 1.9 µm
or
1.3 - 2.2 µm

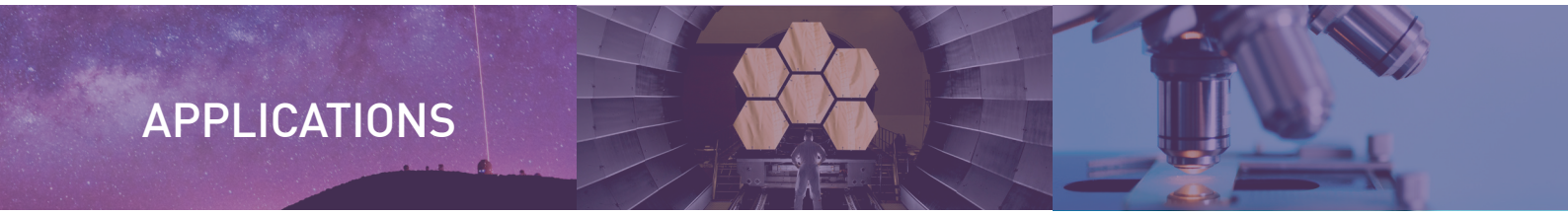
FULL FRAME
600 FPS

< 45 e⁻ RON
or
< 50 e⁻ RON

InGaAs 640x512
15 µm pixel pitch

SDK compatible with µManager, LabVIEW, MatLab, C++, C, Python

HIGH SPEED EXTENDED SWIR



APPLICATIONS

ASTRONOMY:
Adaptive Optics
Hyperspectral Imaging
Laser Communications

SURVEILLANCE:
LiDAR
Long Range Imaging

INDUSTRY:
Multispectral Imaging
Quality/Production Control
Laser beam characterization

LIFE SCIENCES:
Spectroscopy
Fluorescence Microscopy

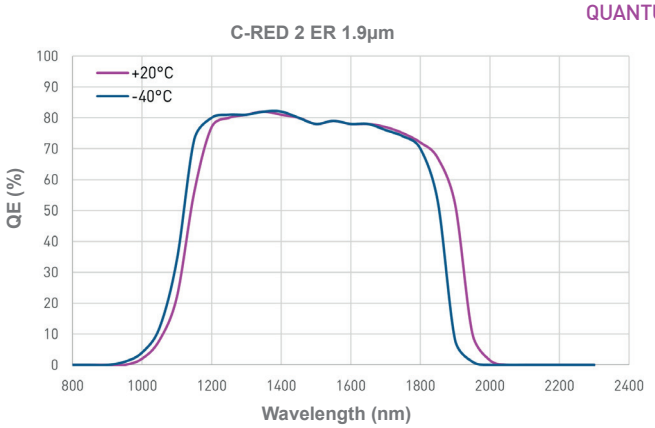
C-RED 2 EXTENDED RANGE 1.9µm & 2.2µm PERFORMANCES

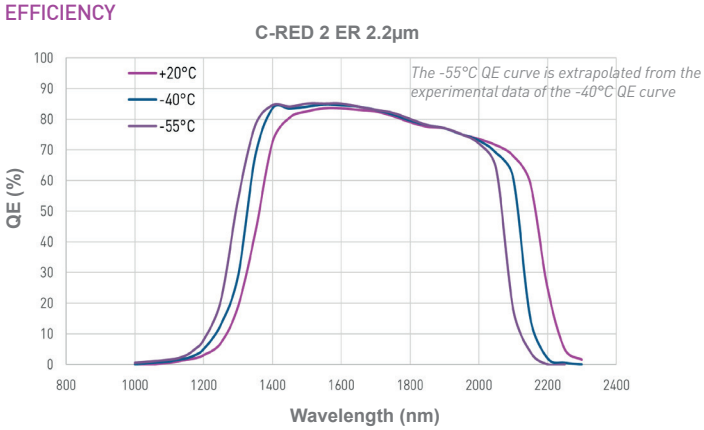
TEST MEASUREMENT*	C-RED 2 ER 1.9µm	C-RED 2 ER 2.2µm	
	Result	Result	Unit
Full sensitivity range (QE >10%)	1100 - 1900	1300 - 2150	nm
Quantum Efficiency >70%	1150 - 1800	1380 - 2050	nm
Maximum speed Full Frame	600		FPS
Readout Noise at high gain, Tint @ 50µs, 600 FPS Full Frame	<50 (@ -40°C)	<40 (@ -55°C)	e-
Dark Current + background	12 000 (@ -40°C)	120 000 (@ -55°C)	e/p/s
Quantization	14		bit
Operability	> 97 (@ -40°C)	contact us	%
Image Full well capacity at low gain, 600 fps	1500		ke-
Image Full well capacity at med gain, 600 fps	130		ke-
Image Full well capacity at high gain, 600 fps	34		ke-
Maximum speed in 32 x 4 (min)	**32066**		**FPS**
Maximum speed in 320 x 256	1779		FPS

** Average values observed*

ADDITIONAL FEATURES
Outputs: USB 3.1 Gen 1 or CameraLink®
Up to 5 µs electronic shutter
Optical interface: C-Mount
LVTTL/LVDS synchronization
Software: **GUI**: First Light Vision - **SDK**: (C, C++, Python) / LabVIEW / µManager/ MatLab

QUANTUM EFFICIENCY

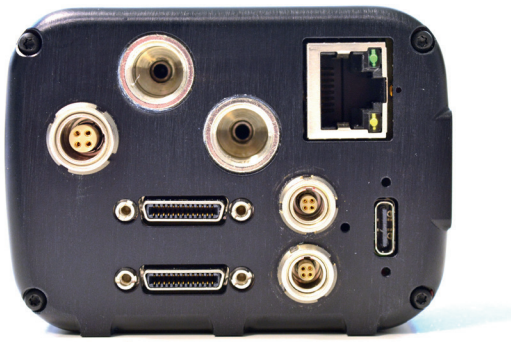




FRAME RATE TABLE AT 600 FPS READOUT SPEED CAMERA LINK® OUTPUT

Lines \ Columns	32	64	128	256	512	640
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

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