

VERY HIGH SPEED ULTRA LOW DARK SWIR CAMERA



SWIR
0.9 - 1.7 μm



600 FPS



<30 e- RON + ultra low dark



640 x 512 InGaAs,
15 μm pixel pitch



93 dB and true 16 bits
High Dynamic Range



SDK compatible with μ Manager,
LabVIEW, MatLab,

LONG EXPOSURE TIMES OPTIMISATION
FOR LOW LIGHT SWIR APPLICATIONS



APPLICATIONS

ASTRONOMY:

Adaptive optics
Astronomical observations
Wavefront sensing

SURVEILLANCE:

Low visibility imaging
Fire prevention

LIFE SCIENCES:

Small animal imaging
Hyperspectral imaging
Fluorescence microscopy

INDUSTRY:

Semiconductor inspection
Quality / Production control
Food sorting

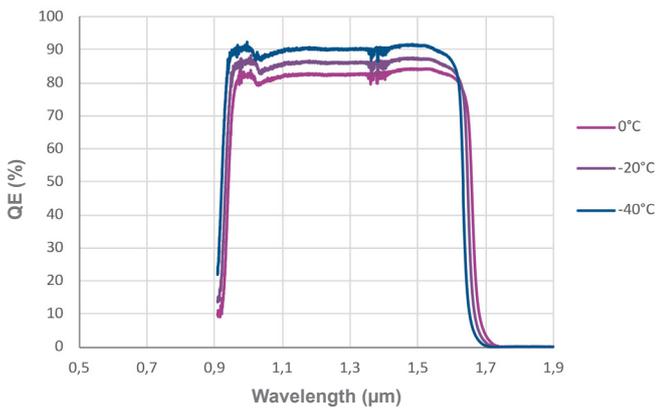
C-RED 2 PERFORMANCES

FEATURES*	Result	Unit
Maximum speed Full Frame	600	FPS
Readout Noise at high gain, Tint @ 50 μ s, 600 FPS Full Frame	< 30	e-
Dark Current @ -40°C	< 600	e/p/s
Quantization	14	bit
Flat Quantum Efficiency 1.0 to 1.65 μ m	> 70	%
Operability due to signal response / pixels with signal \pm 0.3*median at 20°C	99.5	%
Image Full well capacity at low gain, 600 fps	1400	ke-
Image Full well capacity at med gain, 600 fps	128	ke-
Image Full well capacity at high gain, 600 fps	33	ke-
Maximum speed in 32 x 4 (min)	32066	FPS
Maximum speed in 320 x 256	1779	FPS

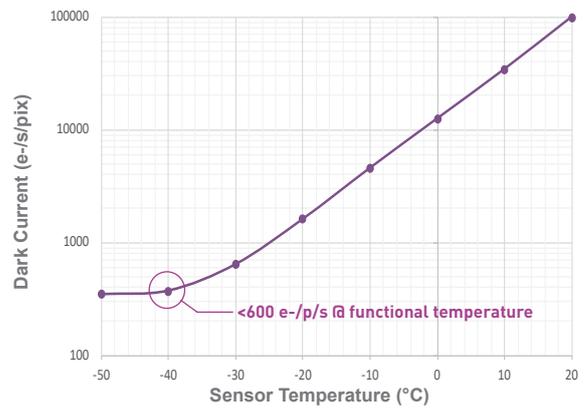
*Average values observed

ADDITIONAL FEATURES
Outputs: USB 3.1 Gen 1 and CameraLink®
Optical interface: C-Mount
LVTTTL/LVDS synchronization
HDR : 93 dB and 16 bits
Long exposure times optimization up to several minutes
Software: GUI : First Light Vision - SDK : (C, C++, Python) / LabVIEW / μ Manager/ MatLab

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

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