Photon etc
A spectrum of solutions

5795 DE GASPE AVENUE, #222
MONTREAL, QUEBEC, H2S 2X3
CANADA

ZEPHIR 1.7
INFRARED CAMERA

ZephIR™ 1.7 is Photon etc.'s scientific-grade near-infrared InGaAs camera, boasting a high sensitivity from 0.9 to 1.7 µm. A four-stage TE cooler, deep-cooling at -80°C, provides unrivalled low-noise levels at an astounding 190 frame-per-second rate. Either it is for fluorescent markers (dyes, nanoparticles or quantum dots) in small animals, Indepth biological sample imaging, semiconductor analysis or solar cells characterization, ZephIR™ 1.7 extends the boundaries of laboratory imaging.

* Export licence may be required for this item.

TECHNICAL SPECIFICATIONS	ZEPHIR 1.7-V			ZEPHIR 1.7-S		
Focal Plane Array (FPA)	InGaAs			InGaAs		
FPA size	640 x 512			640 x 512		
Pixel size	15 µm			15 µm		
Spectral range	**0.5 - 1.7 µm** (~ 0.5-1.69 µm @ 25 °C) (~ 0.5-1.63 µm @-80 °C)			**0.9 - 1.7 µm** (~ 0.9-1.69 µm @ 25 °C) (~ 0.9-1.62 µm @-80 °C)		
Dark Current	< 300 - Typ. ~250 ē/px/s *(Target at 21°C and sensor at -80°C)* < 150 - Typ. ~ 125 ē/px/s *(No thermal emission from target and sensor at -80 °C)*			< 300 - Typ. ~250 ē/px/s *(Target at 21°C and sensor at -80°C)* < 150 - Typ. ~ 125 ē/px/s *(No thermal emission from target and sensor at -80 °C)*		
	High Gain	***Med Gain***	***Low Gain***	***High Gain***	***Med Gain***	***Low Gain***
Gain Setting (ē/ADU)	2.8	28	130	2.1	7.4	89
Readout Noise (ē)	50	150	800	30	75	350
Full Well Capacity	12 kē	800 kē	3.5 Mē	27 kē	110 kē	1.4 Mē
Readout Modes	CDS	ITR	ITR	ITR, IWR, CDS, IMRO		
Digitization	13 bits	15 bits	15 bits	14 bits		
Frame Rate with CameraLink (fps)	90	190	190	220		
Peak responsivity	1.1 A/W @ 1660 nm			1.0 A/W @ 1550 nm		
Quantum Efficiency	> 70% from 0.9 to 1.69 µm			> 70% from 1.0 to 1.6 µm		
Operability (typical)	> 99%			> 99.5%		
Integration Time Range	1 µs to 19 minutes (low gain)			1 µs to 19 minutes (low gain)		
Cooling	TEC 4 stages, forced air			TEC 4 stages, forced air		
FPA Operating Temperature	-80 °C			-80 °C		
Cool Down Time	< 10 minutes			< 10 minutes		
Ambient Temperature Range	10 °C to 35 °C			10 °C to 35 °C		
Cold Shield	f#/1.4			f#/1.4		
Software	PHySpec™ control and analysis software included					
Computer Interface	CameraLink™ or USB 3.0			CameraLink™ or USB 3.0		
External Control	On demand			On demand		
Power Supply Requirement	12 VDC @ 5A			12 VDC @ 5A		
Physical Dimensions	169 x 130 x 97.25 mm			169 x 130 x 97.25 mm		
Weight	2.6 kg			2.6 kg		
Certification	CE			CE		

MAIN ADVANTAGES OF TE COOLED AIR SYSTEM

- › Compact
- › Highly reliable
- › Long lifetime
- › No maintenance
- › Low dark current
- › Low readout noise

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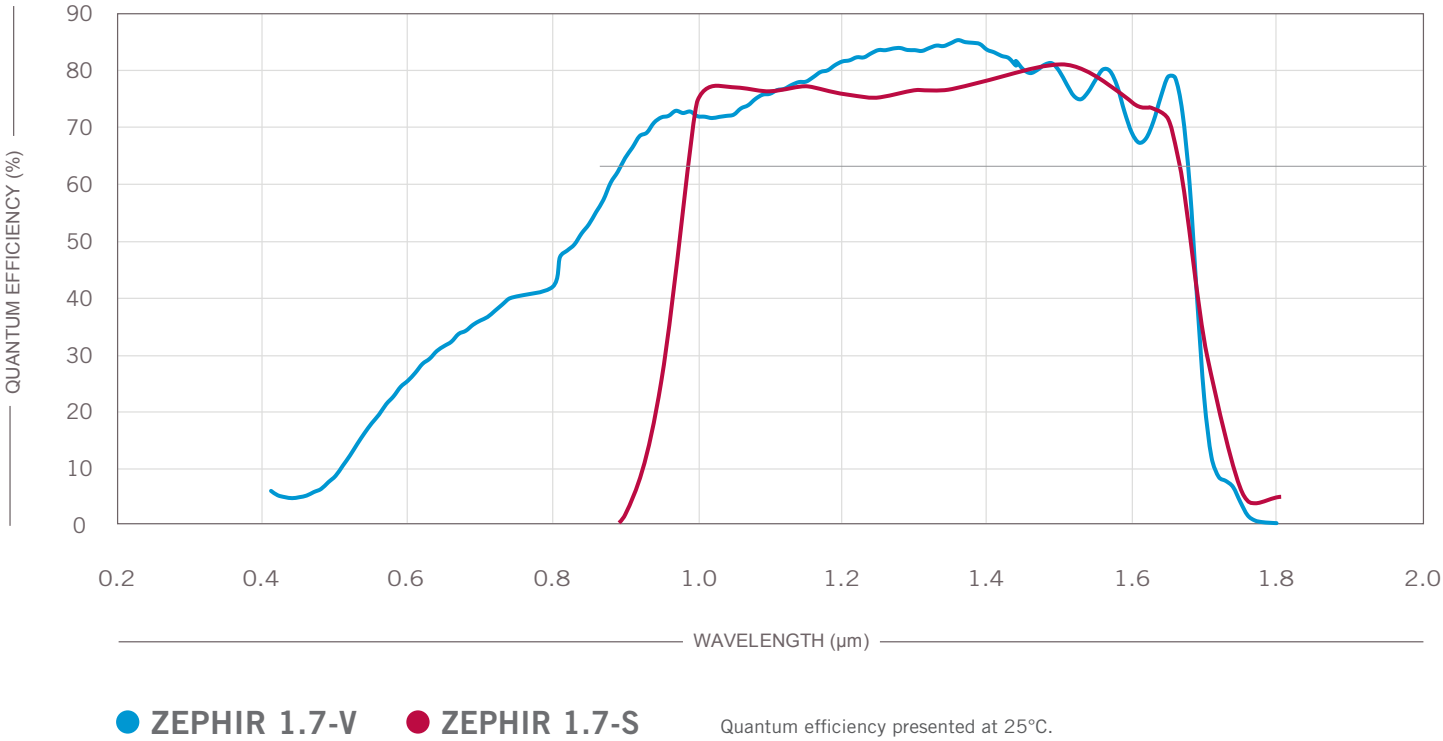

Quantum efficiency presented at 25°C.
The cut-off wavelength shifts towards the blue by ~ 7nm for every 10°C of cooling.

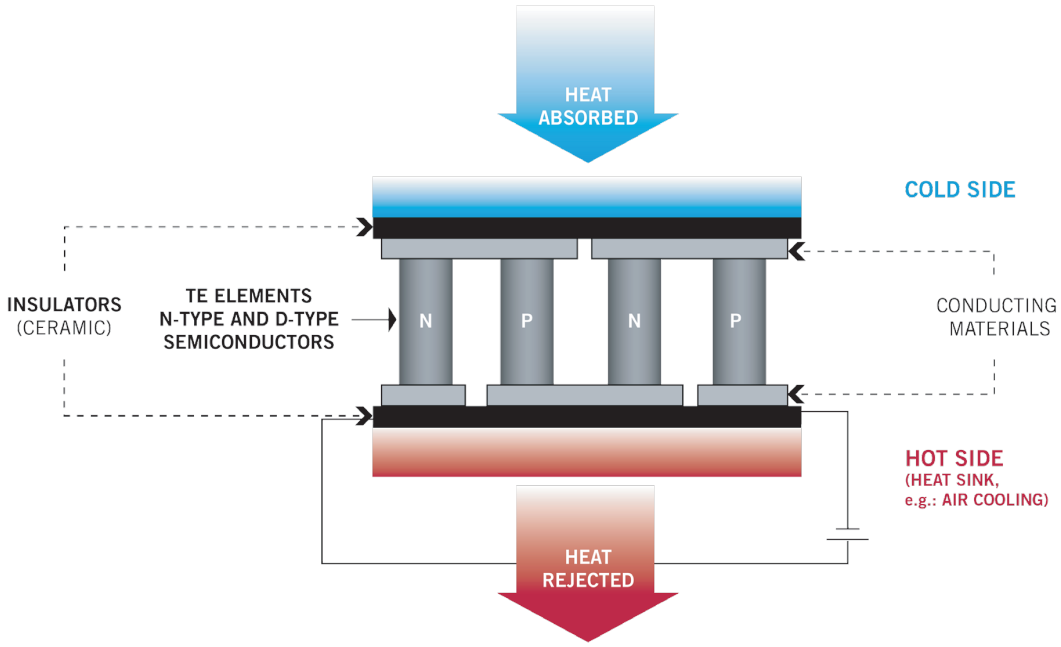

FIG. 1. Schematic of a thermoelectric device where the Peltier effect is used to generate heat flow between two materials.