Photon etc
A spectrum of solutions

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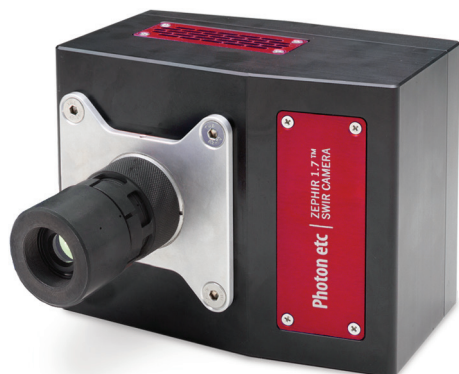MONTREAL, QUEBEC, H2S 2X3
CANADA

Tel: 514-385-9555
sales@photonetc.com

ZephIR™ 1.7
INFRARED CAMERA

The ZephIR 1.7 is a high-end, scientific grade, 640 x 512 pixels resolution, InGaAs camera that marries performance with reliability. It has extremely low noise levels, high efficiency, and a rapid frame rate compatible with an external trigger. This is made possible by a combination of state-of-the-art control electronics and a four stage thermoelectric cooler (TEC) which can maintain an operating temperature as low as -80 °C. The TEC, in turn, uses forced air cooling which requires none of the maintenance of a water or liquid nitrogen chilled unit.
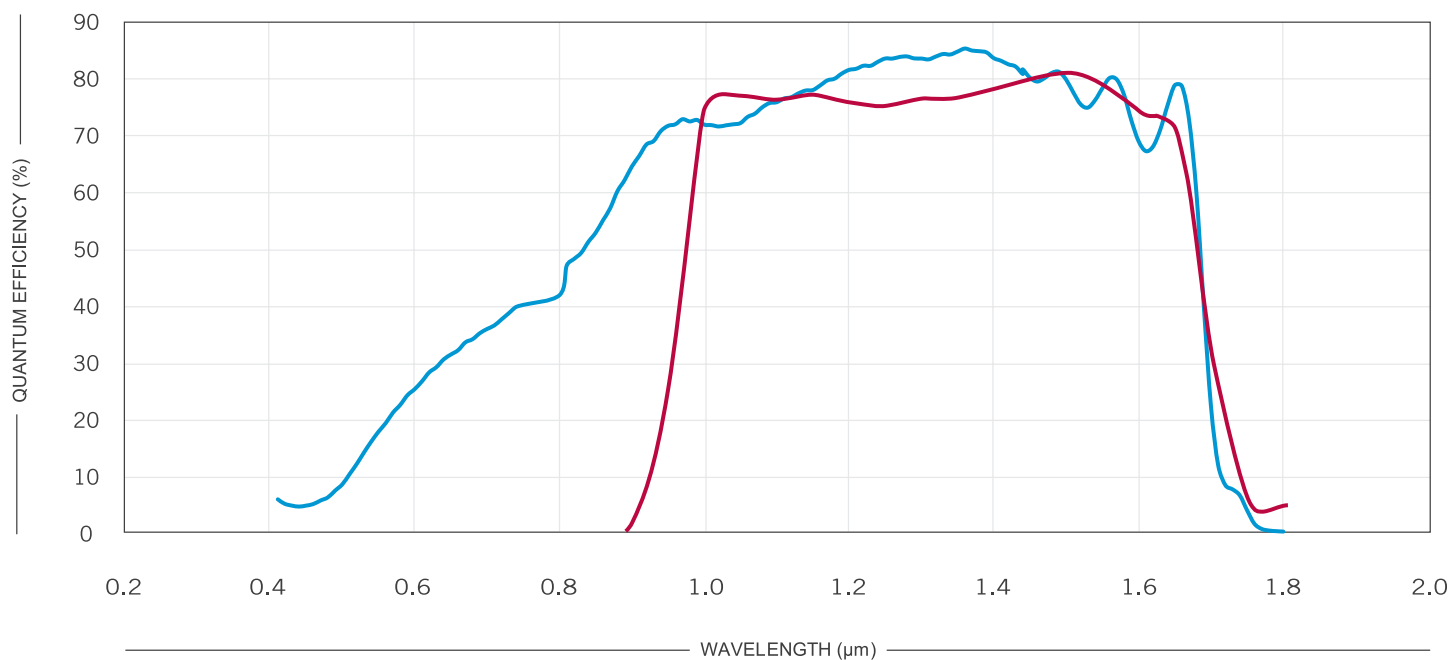
The ZephIR 1.7 is one of the most sensitive and dependable InGaAs cameras on the market.

MAIN ADVANTAGES OF TE COOLED AIR SYSTEM:

» Compact

» Highly reliable

» Long lifetime

» No maintenance

» Low dark current

» Low readout noise

TECHNICAL SPECIFICATIONS

|	ZephIR 1.7x		ZephIR 1.7s		
Focal plane array (FPA)	InGaAs		InGaAs		
FPA size (px)	640 x 512		640 x 512		
Pixel size (μm)	15		15		
Spectral range (QE > 10%)	0.45 - 1.70 μm at 25 °C ~0.50 - 1.63 μm at -80 °C		0.95 - 1.70 μm at 25 °C 0.90 - 1.61 μm at -80 °C		
FPA operating temperature	-80 °C		-80 °C		
Dark current (sensor at -80 °C)	Target at 21 °C: < 300 (Typ. ~225) ē/px/s		Target at 21 °C: < 400 (Typ. ~300) ē/px/s		
	High	Low	High	Med	Low
Typical gain setting (ē/ADU)	2.67	47.5	2.2	7.4	89
Typical readout noise (ē)	22	135	28	75	315
Typical full well capacity (kē)	8.5	250	27	110	1400
Readout modes	CDS ITR	STD ITR	CDS ITR, CDS IWR, IMRO IWR		
Frame rate in CameraLink™ (fps)	105	210	Up to 240 full frame 1900 for a 128x128 ROI		
Frame rate in USB 3.0 (fps)	110	220	Up to 250 full frame 1900 for a 128x128 ROI		
Integration time range	1 μs - 38 s	1 μs - 14 m	1 μs - 90 s	1 μs - 6 m	1 μs - 19 m
Digitization (bits)	13		14		
Peak responsivity	1.1 A/W at 1660 nm		1.0 A/W at 1550 nm		
Quantum efficiency	> 70% 0.95 - 1.67 μm at 25 °C > 70% 0.87 - 1.60 μm at -80 °C		> 70% 1.00 - 1.65 μm at 25 °C > 70% 0.95 - 1.56 μm at -80 °C		
Typical operability	> 99.9%		> 99.5%		
Cooling	TEC 4 stages, forced air		TEC 4 stages, forced air		
Cooldown time	< 10 minutes		< 10 minutes		
Ambient temperature range	10 °C to 35 °C		10 °C to 35 °C		
Cold shield acceptance	F/1.4		F/1.4		
Software	PHySpec™ control and analysis for Windows10 - 64-bits, SDK (C++, Python)				
Computer interface	CameraLink™ or USB 3.0		CameraLink™ or USB 3.0		
External control	Trigger IN / OUT		Trigger IN / OUT		
Power consumption on 12VDC (W)	Max. 56 (Typ. steady-state 24)		Max. 63 (Typ. steady-state 33)		
Dimensions	169 mm x 130 mm x 97 mm		169 mm x 130 mm x 97 mm		
Weight	2.9 kg		2.9 kg		
Certification	CE ETL Intertek		CE ETL Intertek		

Photon etc
A spectrum of solutions

ZephIR 1.7x **ZephIR 1.7s**

Quantum efficiency presented at 25 °C.
The cut-off wavelength shifts towards the blue by ~ 7nm for every 10 °C of cooling.
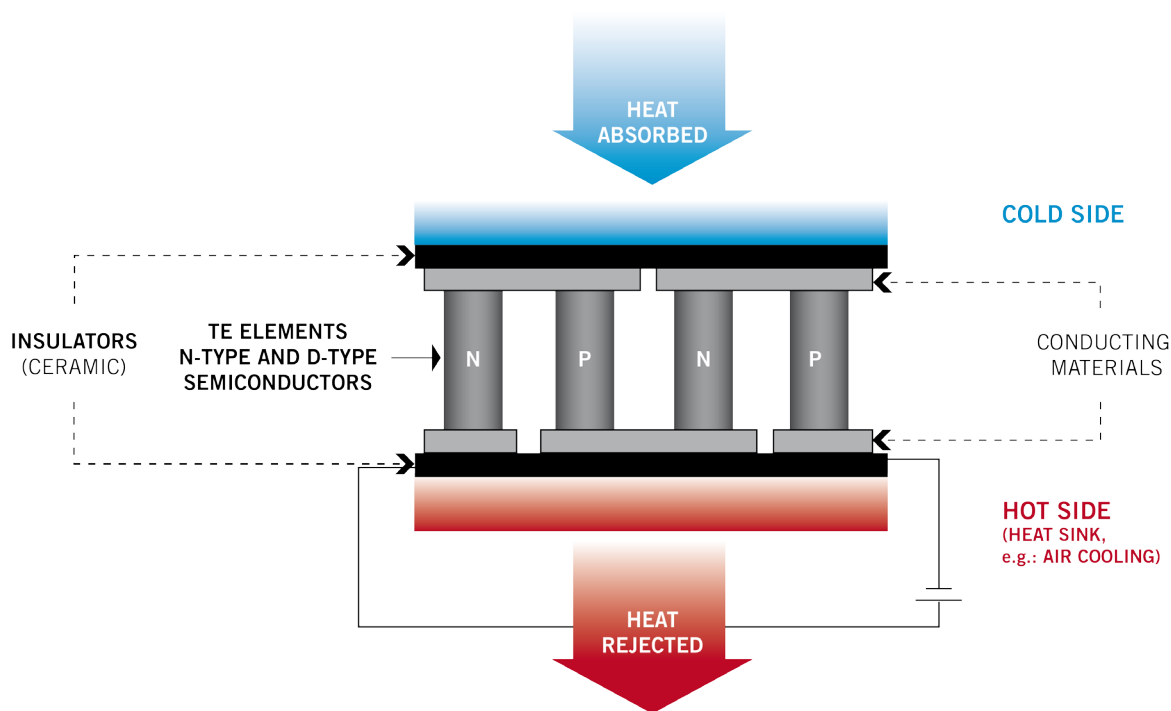
Schematic of a thermoelectric device where the Peltier effect is used
to generate heat flow between two materials.