

ZEPHIR 1.7

INFRARED CAMERA

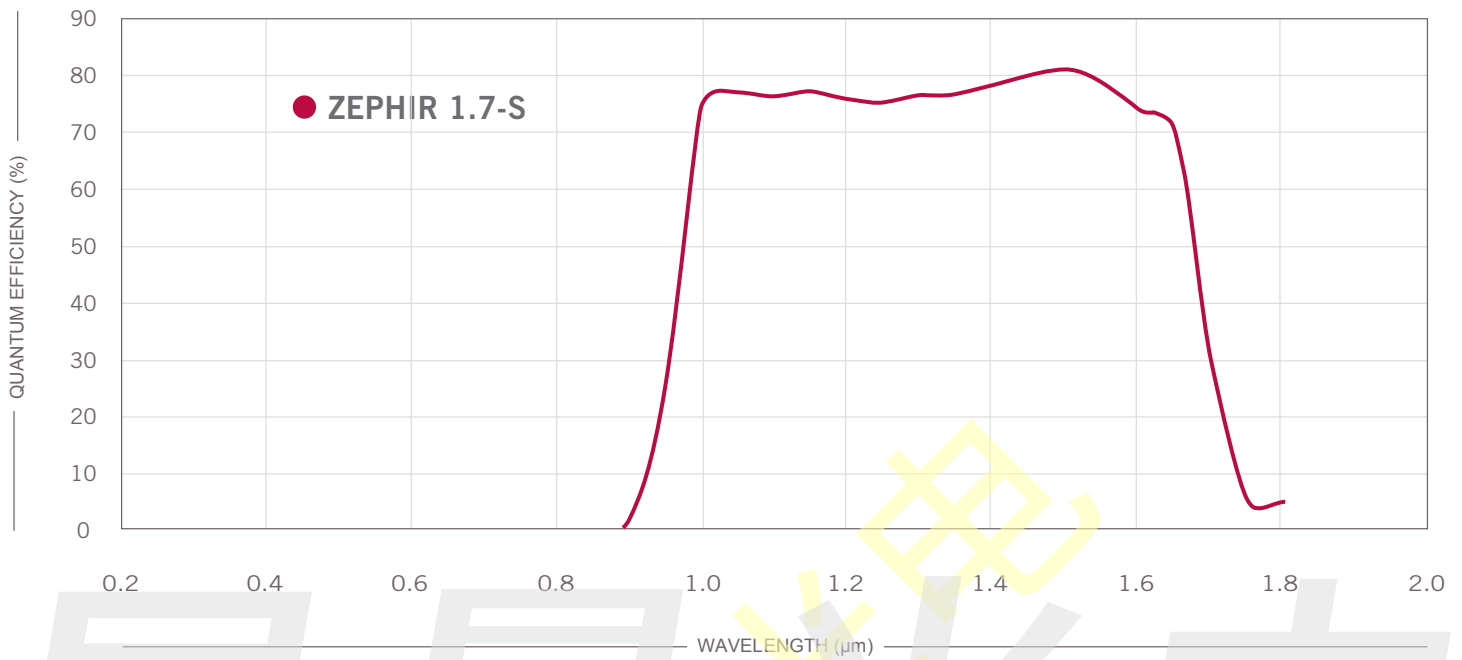


Zephir™ 1.7 is Photon etc.'s scientific-grade near-infrared InGaAs camera, boasting a high sensitivity from 0.9 to 1.7 μm . A four-stage TE cooler, deep-cooling at -80°C , provides unrivalled low-noise levels at an astounding 190 frame-per-second rate. Either it is for fluorescent markers (dyes, nanoparticles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

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

MAIN ADVANTAGES OF TE COOLED AIR SYSTEM

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



Quantum efficiency presented at 25°C.

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

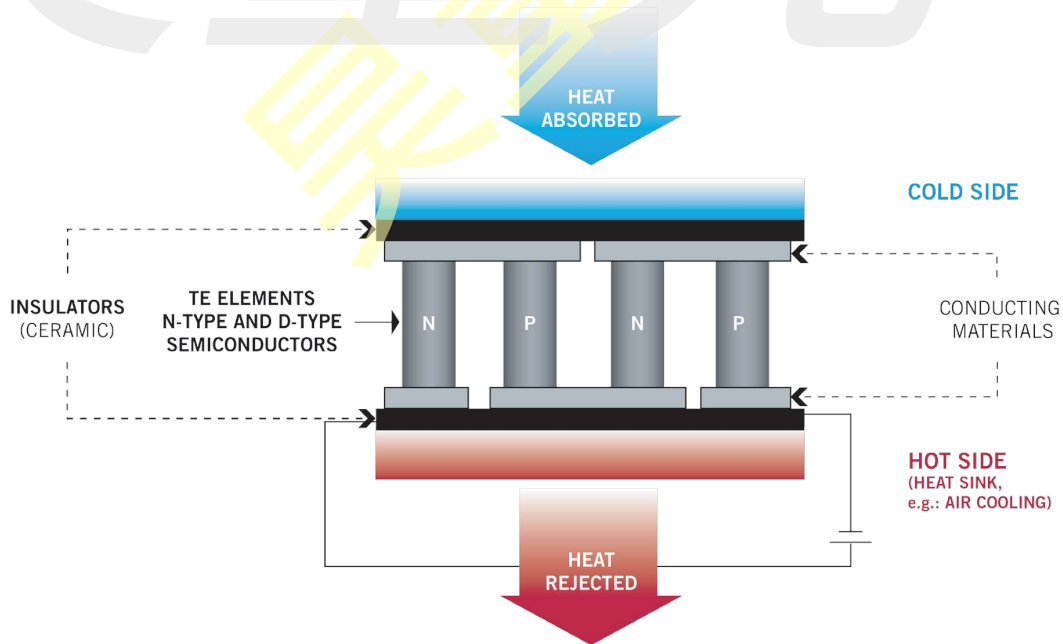


FIG. 1. Schematic of a thermoelectric device where the Peltier effect is used to generate heat flow between two materials.