

ZephIR™ 2.9

INFRARED CAMERA

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ZephIR 2.9 is a fully integrated HgCdTe camera with a 320 x 256 pixels focal plane array (FPA) sensitive from 850 to 2900 nm. The camera provides low noise detection and easy operation. This is in large part due to a four stages thermoelectric cooler (TEC) which can maintain operating temperature as low as -80 °C. The TEC's forced air heat dissipation requires none of the maintenance of a water or liquid nitrogen chilled unit and does not suffer from the limited lifetime of Stirling mechanical coolers.

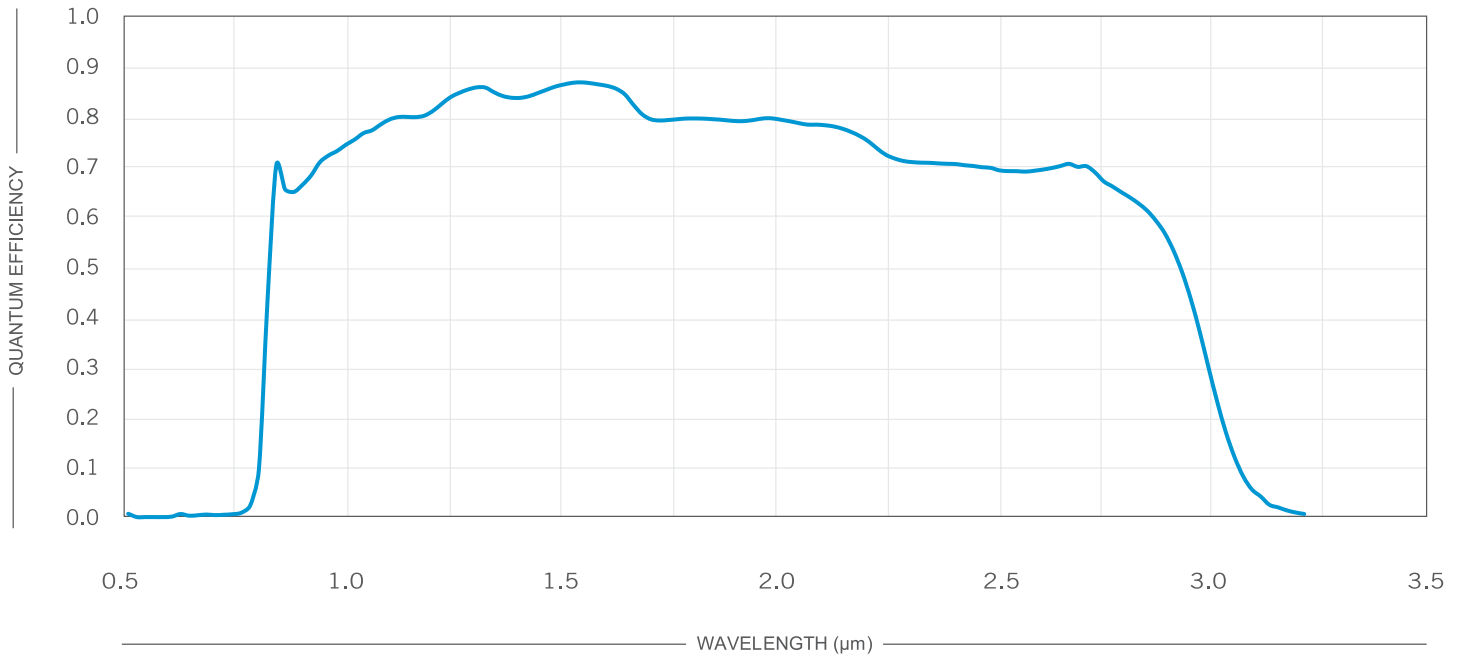
The camera's hardware coded region-of-interest (ROI) enables the user to choose between a full-frame rate of 340 frames per second (fps) and a windowed rate of up to 3000 fps. Users can choose to use Photon etc's PHySpec camera control software or develop their own using an extensive software development kit (SDK).

TECHNICAL SPECIFICATIONS

Focal plane array (FPA)	HgCdTe	
FPA size (px)	320 x 256	
Pixel size (µm)	30	
Spectral range (QE > 10%)	0.85 - 2.9 µm	
FPA operating temperature	-80 °C	
Dark current (sensor at -80 °C)	Target at 21 °C: < 340 Me/px/s	
Gain setting (e-/ADU)	High Gain	Low Gain
Typical readout noise (e)	10.3	216
Full well capacity (ke)	150	980
Readout modes	160	
Digitization (bits)	IWR	
Frame rate in CameraLink™ (fps)	14 bits	
Frame rate in USB 3.0 (fps)	Up to 340 full frame 2000 for a 64 x 64 px ROI	
Peak responsivity	Up to 340 full frame 2000 for a 64 x 64 px ROI	
Quantum efficiency	1.56 A/W at 2700 nm	
Operability (typical)	Up to 85%	
Integration time range	> 98.5% - up to 99.8%	
Cooling	1 µs to 100 ms (low gain)	
Cooldown time	TEC 4 stages, forced air	
Ambient temperature range	10 minutes	
Cold shield	10 °C to 35 °C	
Software	#/1.4	
Computer interface	PC (Windows10 - 64-bits) with PHySpec™ control and analysis software (Computer not included)	
External control	CameraLink™ or USB 3.0	
Power consumption on 12V DC (W)	Upon request	
Dimensions	46 (typ. 32)	
Weight	169 mm x 130 mm x 97.25 mm	
Certification	2.6 kg	
	CE	

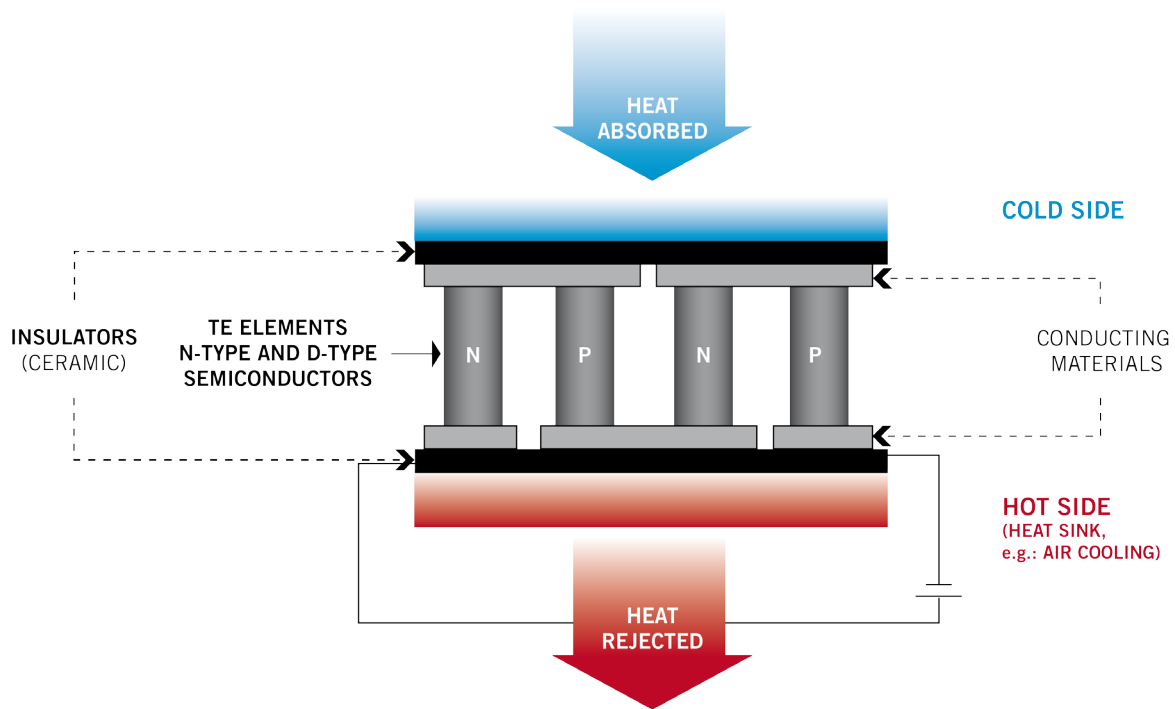
MAIN ADVANTAGES OF TE COOLED AIR SYSTEM:

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



ZephIR 2.9

Quantum efficiency presented at -85 °C



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