



TAU SWIR 25

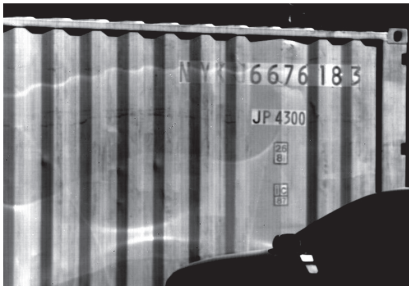
Miniature High-Performance Shortwave Infrared Camera

The Tau SWIR 25 joins FLIR's Tau family of best-in-class small, light weight, low-power camera cores that deliver shortwave infrared imaging with very high sensitivity. Designed for a variety of OEM applications, the Tau SWIR 25 provides outstanding image quality and performance for machine vision, a variety of medical, agricultural, semiconductor/ solar panel inspection applications, as well as high temperature endpoint and defect monitoring.

Tau SWIR 25 cameras incorporate a high-resolution (640 × 512) Indium Gallium Arsenide (InGaAs) 25-micron pixel pitch focal plane array that features variable exposure control, high frame rates (in sub-windowing mode), nearly zero image lag, and high quantum efficiency.



Oil Rig in Thermal & Visible (upper right)



See through Paint on shipping containers



Easily Identify potential ground threats

KEY FEATURES

- 25 µm Pixels
- <1% Image Lag Frame-to-Frame
- Low Power
- Compact Size and Lightweight
- >1,400 Hz Frame Rate (sub window)
- Affordable SWIR Solution
- Custom Engineering Services Available

BENEFITS

- Large pixel collection area for high sensitivity
- Eliminates smear (no persistence)
- Low power budget requirements
- Fits into small space-claim applications
- Works in specialized applications
- Meet your cost targets
- FLIR is your SWIR technology partner

Imaging Specifications

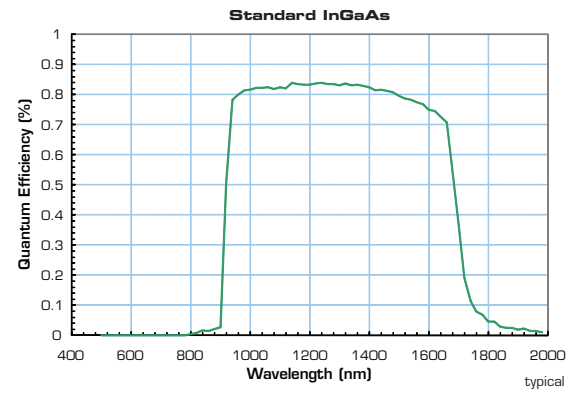
Parameter	Value	Comments
Sensor Type	InGaAs	
Format	640 × 480 (analog) 640 × 512 (digital)	Analog VGA limits to 640 × 480
Pixel Size	25 μm	
Active Area (H × V)	Analog: 0.63" × 0.47" / 16 × 12 mm	Digital: .63" × 0.5" / 16 × 12.8 mm
Active Area (Diagonal)	Analog: 0.8" / 20.0 mm	Digital: 0.8" / 20.5 mm
Active Area (Area)	Analog: 0.3"² / 192 mm²	Digital: 0.32"² / 205 mm²
Fill Factor	100%	
Quantum Efficiency	0.9 to 1.7 μm	See QE plot
Noise @ Sensor Temp = +10°C	Low Gain < 1500 e rms; High Gain < 120 e rms	
NEI	< 6.8 × 108 photons/cm²/sec @1550 nm	
Full Well	Low Gain = 1,500,000 e; High Gain = 18,000 e	Typical
Dynamic Range	Low Gain = 60 dB; High Gain = 47 dB	Typical
Operability	>99%	
Max. Frame Rate	30 FPS	
Exposure Time	9 μs to 95% of frame time	
Region of Interest (ROI)	Full resolution to 64 × 64 at 1,000 FPS	
Image Correction	2-point (Offset/Gain) user configurable	
Image Lag	<1% frame-to-frame	Assumes no over-exposure
Digital Data	14-bit low voltage CMOS or Camera Link®	
Analog Output	NTSC compliant	
Mechanical/Environmental		
Weight	130 g (M42 lens mount) 160 g (C-type lens mount)	See Note 1 below
Dimensions	38 × 38 × 48.25 mm	See Note 2 below
Lens Mount	C-Mount or M42 mount	
Operating Temperature (full performance)	-20°C to 55°C	Full performance
Operating Temperature (degraded performance)	Between -40°C to -20°C and 55°C to 71°C	See Note 3 below
Storage Temperature	-50°C to 85°C	
Humidity	<95%	Non-condensing
Power Requirements		
DC Input Voltage	12 VDC	
Power Dissipation	4 Watts typical	At 30°C case temp

Note 1: Much of the camera weight is associated with the housing and lens mounting hardware. Custom core designs can be used to reduce this weight.

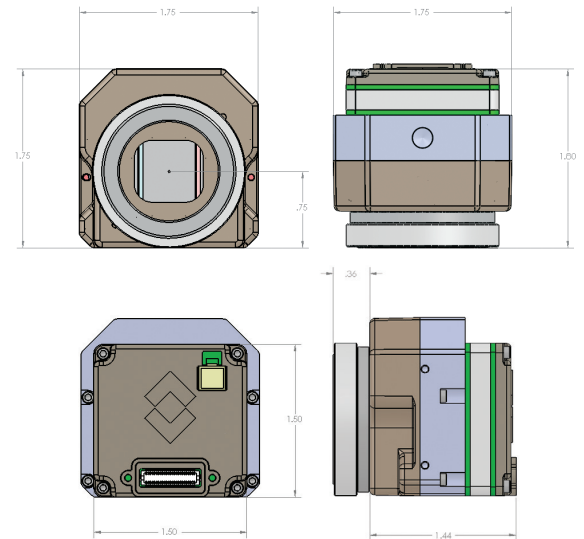
Note 2: Dimensions are typical and depend upon exact lens mount configuration chosen.

Note 3: Degraded performance results in higher random noise in higher-gain mode.

Standard InGaAs



Camera Dimensions



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