



FLIR TAU 2

Longwave Infrared Thermal Camera

FLIR® Tau® 2 thermal imaging cameras offer an unmatched set of features, making them well-suited for demanding applications, such as unmanned vehicles (UVs), thermal weapon sights, and handheld imagers. Improved electronics now give Tau 2 even more capabilities, including radiometry, increased sensitivity, a 60Hz frame rate, and powerful image processing modes that dramatically improve detail and contrast.

IMPROVED IMAGE PROCESSING

For clearer imagery, edge sharpening, and contrast

- Second generation Digital Detail Enhancement (DDE)
- Active Contrast Enhancement (ACE)
- Smart Scene Optimization (SSO)
- Information Based HEQ (IBHEQ) automatically adjusts AGC
- Silent Shutterless NUC for continuous image improvement

ACCURATE TEMPERATURE MEASUREMENT

Supports radiometry, analytics and telemetry

- TLinear output places temperature data in each pixel
- Adjustable isotherm thresholds colorize temperatures of interest
- Rugged and reliable in all terrain

COMMON FEATURES ACROSS MODELS

Fosters improved OEM integration

- 640, 336 and 324 resolutions
- Multiple lens and FOV options
- 60Hz or 30mK frame rates
- Mechanical / electrical compatibility
- FLIR brand and support



Tau image Without ACE



Tau image with new ACE feature

Imaging Specifications

System Overview	
System Type	Uncooled LWIR Thermal Imager
Tau 2 640	640 x 512 VOx Microbolometer
Tau 2 336	336 x 256 VOx Microbolometer
Tau 2 324	324 x 256 VOx Microbolometer
Pixel Size	17 µm (Tau 2 640, 336); 25 µm (Tau 2 324)
Spectral Band	7.5 - 13.5 µm
Performance	<50 mK @ f/1.0
Outputs	
Analog Video	Field-switchable between NTSC and PAL
Tau 2 640	30/60Hz (NTSC); 25Hz/60Hz (PAL); <9Hz option for export (factory set)
Tau 2 336, 324	30/60 Hz (NTSC); 25/50 Hz (PAL) ; <9Hz option for export (factory set)
Digital Video	8- or 14-bit serial LVDS; 8- or 14-bit parallel CMOS; 8-bit BT.656
Operation & Control	
Image Control	Invert, revert, continuous digital zoom, dynamic zoom & pan, digital zoom presets, polarity, false color or monochrome, isotherms, AGC, second generation digital detail enhancement (DDE), image optimization (BPR, NUC & AGC'd video), Active Contrast Enhancement (ACE, Information Based Histogram Equalization (IBHEQ), Smart Scene Optimization (SSO), settable splash screens
Camera Control	Manual via SDK & GUI, dynamic range switching (Tau 2 324 only)
Signal Interface	Camera Link (Expansion Bus Accessory Module), discrete I/O controls available, RS-232 compatible (57,600 & 921,600 baud), external sync input/output, power reduction switch (removes analog video)
FFC Duration	<0.5 sec
Physical Attributes	
Size	1.75" x 1.75" x 1.75" (less lens)
Mounting Interface	6 attach points in lens mount, M2 x 0.4 on 3 sides, 2 per side (sealable bulkhead mounting feature on lens barrel [M29 x 1.0], WFOV only)
Power	
Input Voltage	4.0 – 6.0 VDC
Primary Electrical Connector	50-pin Hirose
Power Dissipation	~ 1.0 W (Tau 2 324 & 336); <1.2 W (Tau 2 640); <1.3W (Tau 2 640/60Hz)
Time to Image	<5 seconds (Tau 2 640); <4 seconds (Tau 2 336 and 324)
Environmental	
Operating Temperature Range	-40° C to +80° C external temp
Storage Temperature Range	-55° C to +95° C external temp
Scene Temp Range	High gain: -40°C to +160°; Low gain: -40°C to +550°
Shock	200 g shock pulse with 11 msec sawtooth
Temperature Shock	5°/min
Vibration	4.3 g 3 axes, 8 hours each
Humidity	5 - 95% non-condensing
Operational Altitude	+40,000 feet
ROHS, REACH, and WEEE	Compliant

Applications:

Unmanned Airborne Vehicles
Handheld imagers
Security Cameras
Maritime cameras
Thermal weapon sights

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