

R&D / SCIENCE

# PRECISION THERMAL ANALYSIS

T500-SERIES PROFESSIONAL THERMAL IMAGING CAMERA



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# FAST, EFFICIENT TESTING PRECISION RESULTS



## Ideal for R&D/Science Applications

FLIR T530/T540 Professional Thermal Imaging Cameras provide the resolution, crisp imagery, and temperature accuracy needed to help researchers and engineers improve product design, increase efficiency, or gain insight into a target's thermal behavior. With more than 160,000 temperature measurement points, the exacting detail of Macro Mode, and useful features such as 1-Touch Level/Span, the FLIR T500-Series will help you quickly identify hot spots and potential design flaws.

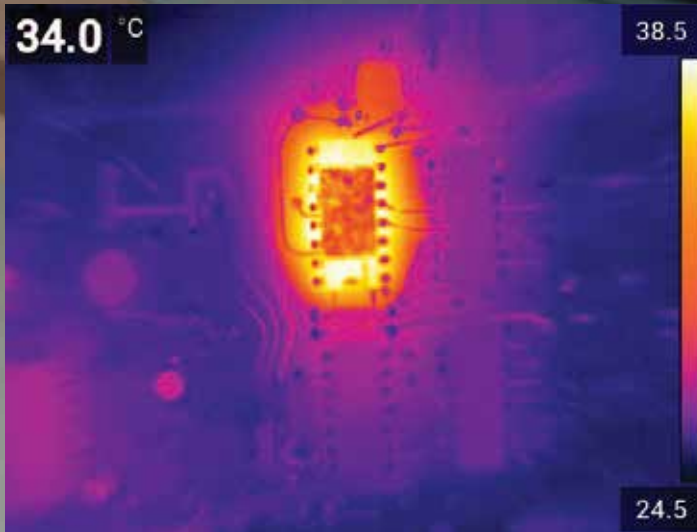
With FLIR T530/T540 cameras, you can:

- **Deepen your understanding of products and processes** with Macro Mode measurement down to 71  $\mu\text{m}$  per pixel spot size (T540).
- **Measure targets comfortably in any lab environment**, thanks to its streamlined form-factor and 180° rotating optical block.
- **Reduce test times and increase efficiency** through rapid camera setup and advanced analysis tools.
- **Improve data sharing** and build client trust with vivid imagery that even non-experts can interpret.





# EXPANDABLE AND MODULAR



Record images with up to 464 x 348 true native resolution or enhance to more than 645,000 pixels through FLIR UltraMax® for the most accurate temperature measurements. Activate Macro Mode to measure small components down to 71  $\mu\text{m}$  (T540) or down to 50  $\mu\text{m}$  with the macro lens.



## Multiple Targets, One Solution

Not every target is large enough or close enough for proper measurement with a single lens. That's why FLIR designed the T500-Series with interchangeable 24°, 42°, and 14° lenses as well as a macro lens (available in 2018) – so you can use the same camera for every target you survey.

The camera auto-calibrates with each new lens to ensure it produces high-quality images and precise thermal measurements.



Two programmable buttons

Speaker plays  
back voice annotation

Vibrant, 4" optically-bonded  
PCAP touchscreen

Scratch-resistant  
Dragontrail™ glass

Li-ion battery for  
extended use times

180° rotating optical block for  
imaging at multiple angles

Mic for voice annotation

**FLIR T500-Series™**  
T530 | T540





Separate Autofocus and  
Image Recording buttons

The image shows a FLIR T540 thermal camera with a large, interchangeable lens. Callout lines point to various features: the top of the camera body for buttons, the lens assembly for the laser and LEDs, and the lens itself for the AutoCal feature. The FLIR logo is visible on the side of the lens housing.

Interchangeable AutoCal™  
24°, 42°, and 14° lenses, plus a  
macro lens\*

Laser aids in precise  
autofocus

Built-in LED lamps

5 MP visible light camera

## EXCELLENCE IN PERFORMANCE AND DESIGN

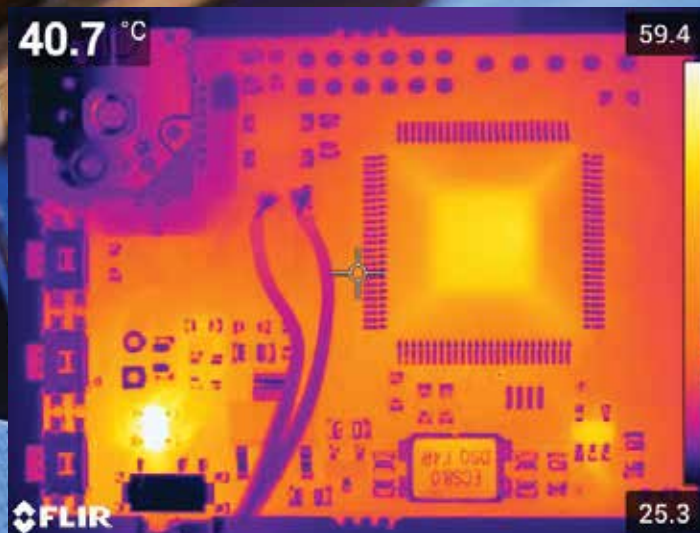
FLIR T530/T540 cameras are packed with performance features that speed up testing and deliver precision results: an ergonomic design, built-in macro mode, razor-sharp macro lens\*, and analysis software that's a snap to learn.

\*not AutoCal-compatible, available in 2018





# INVESTIGATE, ANALYZE, SHARE



With the sensitivity to detect temperature differences of less than 0.03°C, the FLIR T530/T540 allow you to find hidden design flaws and track small thermal gradients. These cameras offer a wide temperature range for quantifying heat generation and thermal dissipation up to 1500°C (T540). Measurements are accurate to  $\pm 2\%$ , promoting quality assurance and factory acceptance of printed circuit boards and other products.



## Optimized for Demanding Lab Environments

- Bright, 4" display with a 160° viewing angle
- 180° optical block rotation for imaging a range of target sizes
- Intuitive folder and naming structure, so images are easy to find
- Streams data directly to computer over Wi-Fi or USB
- Enhanced data collection, analysis, and sharing with FLIR Tools™ or FLIR ResearchIR software solutions



## Specifications

Features By Camera	T530	T540
IR Resolution	320 x 240 (76,800 pixels)	464 x 348 (161,472 pixels)
UltraMax® Resolution	307,200 effective pixels	645,888 effective pixels
Object Temperature Range	-20°C to 120°C (-4°F to 248°F) 0°C to 650°C (32°F to 1202°F) Optional Calibration: 300°C to 1200°C (572°F to 2192°F)	-20°C to 120°C (-4°F to 248°F) 0°C to 650°C (32°F to 1202°F) 300°C to 1500°C (572°F to 2732°F)
Macro Mode	24° lens / 103 µm effective spotsize	24° lens / 71 µm effective spotsize
Digital Zoom	1-4x continuous	1-6x continuous

Common Features	
Detector Type and Pitch	Uncooled microbolometer, 17 µm
Thermal Sensitivity/NETD	<30 mK @ 30°C (42° lens)
Spectral Range	7.5 - 14.0 µm
Image Frequency	30 Hz
Programmable Buttons	2
Lens Identification	Automatic
F-Number	f/1.1 (42° lens), f/1.3 (24° lens), f/1.5 (14° lens)
Focus	Continuous, one-shot with laser distance meter (LDM), one-shot contrast, manual
Minimum Focus Distance	42° lens: 0.15 m (.65 m with MSX®) 24° lens: 0.15 m; optional Macro Mode 14° lens: 1.0 m
Programmable Buttons	2
Image Presentation and Modes	
Display	4", 640 x 480 pixel touchscreen LCD with auto-rotation
Digital Camera	5 MP, with built-in LED photo/video lamp
Color Palettes	Iron, Gray, Rainbow, Arctic, Lava, Rainbow HC
Image Modes	Infrared, visual, MSX®, Picture-in-Picture, optional Macro Mode
Measurement and Analysis	
Accuracy	±2°C (±3.6°F) or ±2% of reading
Spotmeter and Area	3 ea. in live mode
Measurement Presets	No measurement, center spot, hot spot, cold spot, User Preset 1, User Preset 2
Laser Pointer	Yes
Laser Distance Meter	Yes; dedicated button

Annotations	
Voice	60 sec. recording added to still images or video via built-in mic (has speaker) or via Bluetooth
Text	Predefined list or touchscreen keyboard
Image Sketch	From touchscreen, on infrared image only
Distance, Area Measurement	Yes; calculates area inside measurement box in m² or ft²
GPS	Yes; automatic GPS image tagging
METERLiNK®	Yes
Image Storage	
Storage Media	Removable SD card
Image File Format	Standard JPEG with measurement data included
Time Lapse (Infrared)	10 sec to 24 hrs
Video Recording and Streaming	
Radiometric IR Video Recording	Real-time radiometric recording (.csq)
Non-Radiometric IR or Visual Video	H.264 to memory card
Radiometric IR Video Streaming	Yes, over UVC or Wi-Fi
Non-Radiometric IR Video Streaming	H.264 or MPEG-4 over Wi-Fi MJPEG over UVC or Wi-Fi
Communication Interfaces	USB 2.0, Bluetooth, Wi-Fi
Video Out	DisplayPort over USB Type-C
Additional Data	
Battery Type	Li-ion battery, charged in camera or on separate charger
Battery Operating Time	Approx. 4 hours at 25°C (77°F) ambient temperature and typical use
Operating Temperature Range	-15°C to 50°C (5°F to 122°F)
Storage Temperature Range	-40°C to 70°C (-40°F to 158°F)
Shock/Vibration/Encapsulation; Safety	25 g / IEC 60068-2-27, 2 g / IEC 60068-2-6 / IP 54; EN/UL/CSA/PSE 60950-1
Weight/Dimensions w/o Lens	1.3 kg (2.9 lbs), 140 x 201 x 84 mm (5.5 x 7.9 x 3.3 in)
Box Contents	Infrared camera with lens, 2 batteries, battery charger, hand strap, hard transport case, lanyards, front lens cap, rear lens cap, power supplies, printed documentation, SD card (8 GB), cables (US 2.0 A to USB Type-C, USB Type-C to HDMI, USB Type-C to USB Type-C)

Specifications are subject to change without notice. For the most up-to-date specs, go to [www.flir.com](http://www.flir.com)

### T500-Series cameras are backed by FLIR's industry-leading warranty

2 years: Full protection, parts, labor

5 years: Battery

10 years: Detector



LEARN MORE ABOUT THESE T500-SERIES CAMERAS AT [WWW.FLIR.COM/T500SCIENCE](http://WWW.FLIR.COM/T500SCIENCE)

**FLIR T500-Series™**  
T530 | T540



# SPECIFICATIONS & SUPPORT



FLIR offers education and training programs at its production facilities, regionally, or at your location. FLIR assists beginners to seasoned professionals in the following areas:

- On-line Training Courses
- Infrared Thermography for Research and Development
- Advanced Radiometry
- Thermography R&D Application Webinars
- Infrared Technology & Application Seminars
- Customer Site Consultation Services

## The Infrared Training Center

The mission of the Infrared Training Center is to make our customers and partners successful by enhancing their knowledge of IR technology, thermal imaging products, and relevant applications.

At ITC, you can take initial training courses in thermography, or receive more advanced training specific to research and development. All of our instructors are experienced thermal imaging specialists who have practical experience with numerous applications.



## Thermography Certification Training

Level I certifies that you know how a thermal imager works and how to use it. Level II cranks your credibility up a notch with more in-depth concepts and intensive labs. Level III asserts that you have knowledge and skills to administer your company's thermography program. These certifications offer strong validation to support the work you do as a thermographer.

Mobile Training Units and on-site training at your facility are encouraged if you would like to certify a group of 10 or more. For a complete list and schedule of courses and more information, visit [www.infraredtraining.com](http://www.infraredtraining.com).



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