

FLIR T450sc

Compact Infrared Cameras for Research and Science Applications

Portable, ergonomic, and easy-to-use, FLIR's T450sc infrared camera provides excellent infrared image quality at an affordable cost and are packed with innovative features that make them perfect choices for your research and scientific needs. The T450sc camera offers:

RICH FEATURE SET

Infrared image resolution of 320 × 240 along with auto or manual focus options, up to 8× continuous digital zoom, and optional interchangeable infrared lenses allow you to get the information your project demands.

INTEGRATED VISUAL CAMERA

Capture visible-light images at the same time you capture your thermal image with a built-in 3.1 megapixel digital camera that includes a target illuminator for low light situations.

AUTO HOT/COLD SPOT & AUDIBLE/VISUAL ALARMS

Detect high, low, and interval temperatures on the thermal image quickly and efficiently using FLIR's advanced in camera algorithms. Create custom temperature triggers to sound audible or show visible alarms for desired targets

ON-CAMERA RADIOMETRIC RECORDING

Real-time temperature calibrated movie recording at 30Hz to SD card that can be replayed on the camera or exported to ResearchIR 4.0 for playback, analysis and data sharing.

ON-CAMERA MEASUREMENT TOOLS

On-screen emissivity tables, up to 5 temperature measurement spots, and Delta T functionality mean you can quickly acquire and easily compare temperature data.

MSX® ENHANCEMENT AND PICTURE-IN-PICTURE

Merge or overlay visual and infrared images to make identification and interpretation of infrared images easy and intuitive.

ERGONOMIC DESIGN

3.5" LCD touchscreen brings new easy-to-navigate interface and user comfort to a new level. Optics head and display screen are independently rotatable for optimum viewing.

AUTO ORIENTATION

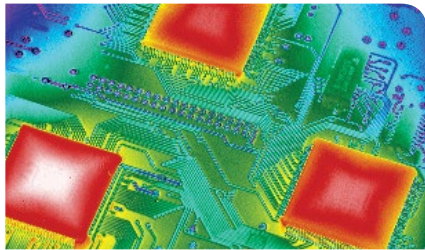
Keeps onscreen measurement data upright for easier reading in vertical or horizontal framing.

MAXIMUM CONNECTIVITY

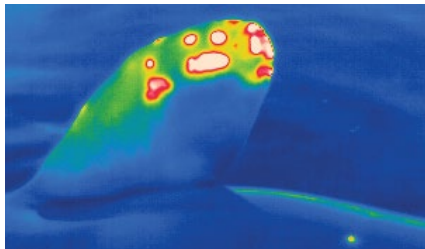
Store thousands of images to a standard removable SD Memory Card or output through standard video and USB outputs. Create visual and infrared non-radiometric MPEG-4 video files.

RESEARCHIR DATA ACQUISITION AND ANALYSIS SOFTWARE (included)

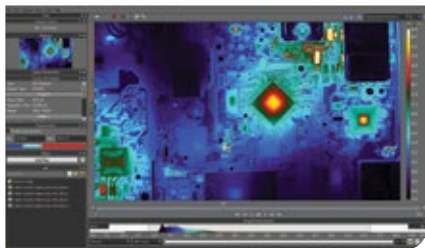
Specifically developed for use in research and scientific environments, FLIR ResearchIR allows T450sc users to remotely control their camera, record movies & snapshots, and conduct detailed thermal analysis in "live" or "playback" mode.



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Whale Fin



ResearchIR Data Acquisition and Analysis Software



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Disclaimer

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General description

The FLIR T450sc is a camera that offers good performance at an affordable price. Excellent ergonomics and a walk-up-and-use interface make the T450sc a truly user-friendly camera for the beginner or advanced user. High accuracy and sensitivity together with radiometric recording and streaming options make the T450sc well suited for research and development.

Benefits:

- Tailor made for research and development: The T450sc has high accuracy and sensitivity to accurately measure the smallest temperature differences. With real-time radiometric recording in the camera, it is possible to capture fast events on the camera's SD card for further analysis by the supplied analysis software.
- Excellent ergonomics: The T450sc has a tiltable IR unit and auto-orientation, which make it easy to capture images from any angle comfortably. The small size and low weight of the camera facilitate its use over a full working day.
- Affordable performance: The T450sc camera is equipped with the innovative 'Multi Spectral Dynamic Imaging (MSX)' feature, which produces an image richer in detail than ever before. You can highlight objects of interest, in both the IR and visual image, by sketching or adding predefined stamps directly on the camera's touch screen.

Imaging and optical data

IR resolution	320 × 240 pixels
Thermal sensitivity/NETD	<30 mK @ +30°C (+86°F)
Field of view (FOV)	25° × 19°
Minimum focus distance	0.4 m (1.31 ft.)
Focal length	18 mm (0.7 in.)
Spatial resolution (IFOV)	1.36 mrad
F-number	1.3
Image frequency	60 Hz
Focus	Automatic (one shot) or manual
Digital zoom	2x, 4x and 8x

Detector data

Detector type	Focal plane array (FPA), uncooled microbolometer
Spectral range	7.5–13 μm

Image presentation

Display	Touch screen, 3.5 in. LCD, 320 × 240 pixels
Image adjustment	Auto or manual

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Image presentation modes	
Image modes	Thermal, Thermal MSX, Picture in Picture, Digital Camera
Multi Spectral Dynamic Imaging (MSX)	Thermal image with enhanced detail presentation
Picture in Picture	Resizable and movable IR area on visual image
Measurement	
Object temperature range	-20°C to +120°C (-4°F to +248°F) 0°C to +650°C (+32°F to +1202°F) +250°C to +1500°C (+482°F to +2732°F)
Accuracy	±1°C (±1.8°F) or ±1% of reading for limited temperature range, ±2°C (±3.6°F) or ±2% of reading
Measurement analysis	
Spotmeter	5
Area	5 areas (boxes or circles) with max./min./average
Profile	1 line profile with max/min temp.
Automatic hot/cold detection	Auto hot or cold spotmeter markers within area and profile
Measurement presets	No measurements, Center spot, Hot spot, Cold spot, User preset 1, User preset 2
Difference temperature	Delta temperature between measurement functions or reference temperature
Reference temperature	Manually set using difference temperature
Emissivity correction	Variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Emissivity, reflected temperature, relative humidity, atmospheric temperature, object distance, external IR window compensation
Alarm	
Measurement function alarm	Audible/visual alarms (above/below) on any selected measurement function
Screening	Difference temperature alarm, audible
Set-up	
Set-up commands	Define user presets, Save options, Programmable button, Reset options, Set up camera, Compass, Language, Time & units, Camera information
Storage of images	
Image storage	Standard JPEG, including digital photo and measurement data, on memory card
Image storage mode	Simultaneous storage of thermal and digital photo in same JPEG. Optional to store digital photo as separate JPEG.
Image annotations	
Text	Add table. Select between predefined templates or create your own in FLIR Tools
Sketch	Draw on thermal/digital photo or add predefined stamps
Report generation	<ul style="list-style-type: none"> Instant Report (*.pdf file) in camera including IR and visual images Separate PC software with extensive report generation

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Geographic Information System	
Compass	Camera direction automatically added to every image
Video recording in camera	
Radiometric IR-video recording	CSQ to memory card
Non-radiometric IR-video recording	MPEG-4 to memory card
Visual video recording	MPEG-4 to memory card
Video streaming	
Radiometric IR-video streaming	Full dynamic to PC using USB
Non-radiometric IR-video streaming	Uncompressed colorized video using USB
Digital camera	
Built-in digital camera	3.1 Mpixel with LED light
Digital camera, focus	Fixed focus
Digital camera, FOV	Adapts to the IR lens
Built-in digital lens data	FOV 53° × 41°
Digital camera, aspect ratio	4:3
Laser pointer	
Laser	Activated by dedicated button
Laser alignment	Position is automatic displayed on the IR image
Laser classification	Class 2
Laser type	Semiconductor AlGaInP diode laser
Laser power	1 mW
Laser wavelength	635 nm (red)
Data communication interfaces	
SD Card	One card slot for removable SD memory cards
USB	
USB	<ul style="list-style-type: none"> • USB-A: Connect external USB device • USB Mini-B: Data transfer to and from PC / Uncompressed colorized video
USB, standard	USB Mini-B: 2.0
USB, connector type	<ul style="list-style-type: none"> • USB-A connector • USB Mini-B connector
Composite video	
Video out	Composite
Video, standard	CVBS (ITU-R-BT.470 PAL/SMPTE 170M NTSC)
Video, connector type	4-pole 3.5 mm jack
Power system	
Battery type	Rechargeable Li Ion battery
Battery voltage	3.7 V
Battery capacity	4.4 Ah, at +20°C to +25°C (+68°F to +77°F)
Battery operating time	Approx. 4 hours at +25°C (+77°F) ambient temperature and typical use
Charging system	In camera (AC adapter or 12 V from a vehicle) or 2-bay charger
Charging time	4 h to 90% capacity, charging status indicated by LED's
Power management	Automatic shutdown and sleep mode (user selectable)

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Power system	
AC operation	AC adapter, 90–260 VAC input, 12 V output to camera
Start-up time from sleep mode	Instant on
Environmental data	
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)
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity +25°C to +40°C (+77°F to +104°F) / 2 cycles
EMC	<ul style="list-style-type: none"> EN 61000-6-2 (Immunity) EN 61000-6-3 (Emission) FCC 47 CFR Part 15 B (Emission)
Magnetic fields	EN 61 000-4-8, Test level 5 for continuous field (Severe industrial environment)
Encapsulation	IP 54 (IEC 60529)
Bump	25 g (IEC 60068-2-29)
Vibration	2 g (IEC 60068-2-6)
Safety	EN/UL/CSA/PSE 60950-1
Physical data	
Camera weight, incl. battery	0.880 kg (1.94 lb.)
Camera size (L × W × H)	106 × 201 × 125 mm (4.2 × 7.9 × 4.9 in.), with built-in lens pointing forward
Tripod mounting	UNC ¼"-20 (adapter needed)
Material	Polycarbonate + acrylonitrile butadiene styrene (PC-ABS) Thixomold magnesium Thermoplastic elastomer (TPE)
Color	Graphite gray and black
Shipping information	
<ul style="list-style-type: none"> Infrared camera with lens Battery (2 ea.) Battery charger Camera lens cap Calibration certificate FLIR ResearchIR Max 4 FLIR Tools download card User documentation CD-ROM Printed documentation Hard transport case Memory card Neckstrap Power supply, incl. multi-plugs Sunshield USB cable Video cable 	
EAN-13	7332558006566
UPC-12	845188006914
Country of origin	Sweden

Supplies & accessories:

- 1196961; IR lens, f = 30 mm, 15° incl. case
- 1196960; IR lens, f = 10 mm, 45° incl. case
- T197215; Close-up 4× (100 µm) incl. case
- T197214; Close-up 2× (50 µm) incl. case
- T197408; IR lens, 76 mm (6°) with case and mounting support for T/B-200/400
- T197412; IR lens, 4 mm (90°) with case and mounting support for T/B2xx-4xx
- T910814; Power supply, incl. multi plugs

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- T197667; Battery package
- T197650; 2-bay battery charger, incl. power supply with multi plugs
- 1196398ACC; Battery
- T911230ACC; Memory card SDHC 4 GB
- 1910423; USB cable Std A <-> Mini-B
- T198509; Cigarette lighter adapter kit, 12 VDC, 1.2 m/3.9 ft.
- 1910582ACC; Video cable
- T198370ACC; Hard transport case for FLIR T/B2xx-4xx
- T198495; Pouch for FLIR T6xx and T4xx series
- 1124545; Pouch
- T198493; Sun shield
- T198499; Neck strap
- T197771ACC; Bluetooth Headset
- T910972; EX845: Clamp meter + IR therm TRMS 1000A AC/DC
- T910973; MO297: Moisture meter, pinless with memory
- T911093; Tool belt
- T198586; FLIR Reporter Professional (license only)
- T198584; FLIR Tools
- T198583; FLIR Tools+ (license only)
- DSW-10000; FLIR IR Camera Player
- APP-10002; FLIR Tools Mobile (Android Application)
- APP-10004; FLIR Tools (MacOS Application)
- T127597L5; FLIR ResearchIR 3 (license only), 5 user licenses
- T127597L10; FLIR ResearchIR 3 (license only), 10 user licenses
- T127598L5; FLIR ResearchIR 3 Max (license only), 5 user licenses
- T127598L10; FLIR ResearchIR 3 Max (license only), 10 user licenses
- T198696; FLIR ResearchIR Max 4
- T198697; FLIR ResearchIR Max + HSDR 4
- T198579; FLIR ResearchIR 3 (CD)
- T198578; FLIR ResearchIR 3 (license only)
- T198575; FLIR ResearchIR 3 Max (CD)
- T198574; FLIR ResearchIR 3 Max (license only)
- T198292; Upgrade previous version to FLIR ResearchIR 3
- T198291; Upgrade previous version to FLIR ResearchIR 3 Max
- T198290; Upgrade FLIR ResearchIR 3 to FLIR ResearchIR 3 Max

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