

TRULY  
**BEYOND COMPARE**



FLIR T-Series  
Smart, compact and powerful



An upgradable range of smart, compact and powerful cameras

# T-Series: Ideal for electrical and mechanical inspections

The FLIR T-Series of portable infrared cameras from FLIR Systems takes infrared camera ergonomics, weight and ease-of-use to a new level. Usability is key: our engineers have translated user feedback on comfort and clarity into a series of comprehensive and innovative features. Furthermore, the T-Series has been specifically developed for industrial environments. The result is a camera range in which all models are equipped with these exceptional features:

- Outstanding ease-of-use
- Excellent ergonomics through small size and light weight
- Tilttable lens unit
- Touch-screen
- Excellent infrared image quality
- Integrated digital camera
- Visualization software and tools
- Possibility to upgrade your camera to grow with your needs.



T200

- 200 x 150 IR resolution
- < 100 mK NETD
- 2x digital zoom
- Visual camera
- Picture in picture (scalable)



200 pixels



T250

- 200 x 150 IR resolution
- < 80 mK NETD
- 2x digital zoom
- Visual camera
- Picture in picture (scalable)
- Text from touch screen
- Voice comments
- Sketch annotations
- Image marker



T360

- 320 x 240 IR resolution
- < 70 mK NETD
- 4x digital zoom
- Visual camera
- Picture in picture (resizable)
- Thermal Fusion
- Simultaneous mode



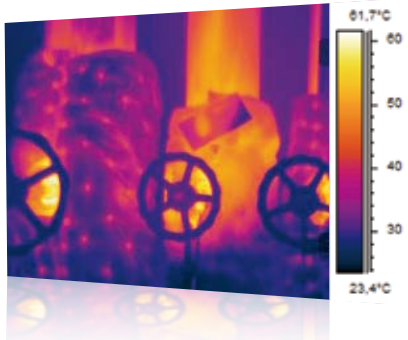
240 pixels

320 pixels

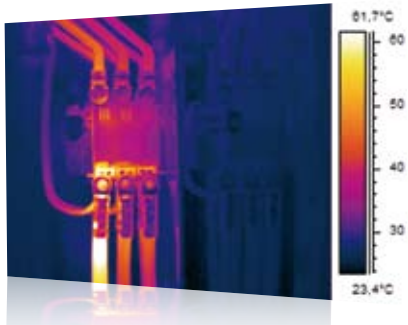


T400

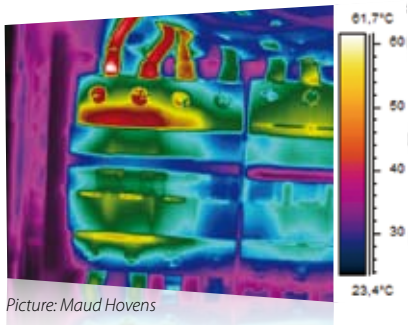
- 320 x 240 IR resolution
- < 60 mK NETD
- 8x digital zoom
- Visual camera
- Picture in picture (resizable)
- Thermal Fusion interval
- Thermal Fusion above
- Thermal Fusion below
- Text comments from list
- Text from touch screen
- Voice comments
- Sketch annotations
- Image marker
- Delta T
- Simultaneous mode
- Mpeg4 Video mode
- Emissivity table



The infrared image shows that insulation is deficient around the middle steam pipe. Thanks to infrared inspection severe burning injuries or even a total facility breakdown is prevented.



Infrared inspection reveals an overheated electrical connection that was discovered just in time to prevent a fire and possibly even save lives.



Picture: Maud Hovens

With the naked eye this circuit breaker looks fine, but in infrared it is clear that it is a highly dangerous situation. This circuit breaker needs to be replaced urgently.

“As long as the simple truth prevails that something gets hot before it breaks down, applications for infrared cameras will be endless.”

Infrared radiation is emitted by every object above a temperature of  $-273^{\circ}\text{C}$ . To capture this radiation and make it visible, you need an infrared camera that can take clear heat pictures, measure temperatures instantly and convert these infrared images into a standard electronic format for further processing.

## Industrial applications

- Supervise the production process and detect hidden faults
- Detect and measure heat development in electrical and mechanical devices
- See blocked pipework and insulation defects
- Optimize product development
- Raise production output
- Secure product quality
- Enhance work safety



## An optimum mix of ergonomics, flexibility and features

### Power / Functionality:



#### Measurement range

The T-Series measures temperatures from -20°C to +120°C or 0°C to 350°C.



#### Up to 320 x 240 pixels

The T-Series infrared image resolution suits most applications.



#### Visual camera

The integrated 1.3 Mpixel digital camera makes observing and inspecting faster and easier.



#### 4 hours battery life

Long lasting battery with in-camera charger or car charger.



#### Interfaces

The T-Series is equipped with standard video, USB outputs as well as a removable SD card.



#### Interchangeable Infrared lens

The T-Series features a standard 25° lens and optional 15° and 45° lenses.



#### MPEG-4 video

Create visual and infrared non radiometric MPEG-4 video files.



#### FLIR Thermal Fusion

Merges visual and infrared images to offer better analysis.



#### Picture in picture

Create an infrared overlay on your visual image. Scalable, moveable and resizable (depending on model).



#### Thumbnail image gallery

An easy-to-access thumbnail image gallery helps you to quickly review and find your infrared images.



#### Radiometric JPG

In camera radiometric JPEG image format. Allows for postprocessing and report writing with Microsoft Word based FLIR software.



### Design / Ergonomics:

#### Tiltable lens unit

A 120° tiltability of the lens unit allows comfortable use in all situations, anywhere and from any perspective.



#### 880 g weight

An excellent functionality-weight ratio due to the use of advanced materials and components.



#### IP54 standard

The T-Series meets the IP54 standard, is dust-proof and water splash-proof, and is designed to be used in harsh industrial environments and all weather conditions.



#### Look-and-feel

The camera comes in a magnesium metal housing. Its exterior parts are made of, or covered with, high-value synthetic materials to ensure a better grip and user comfort.

In 2008, the FLIR T-Series was awarded the "reddot design award" in the measurement and testing systems design category.



### Ease-of-use / Features:



#### Touch screen

A 3.5" LCD touch screen plus stylus brings interactivity and user comfort to a new level. It allows sketching and graphical marks on the imagery.



#### Text annotations

Make text annotations from a pre-defined list or using the touch screen.



#### Sketch annotations

Add sketch annotations on the touch screen.



#### Voice annotations

Add voice comments to clarify your findings.



#### Temperature sound, image alarms

Make surveying easier and faster.



#### Measurement modes

Moveable measurement spots, area with auto hot/cold spot indication, isotherms,  $\Delta T$  calculation.



#### Automatic focus and Manual focus, Digital zoom

Adjust, measure and capture easily and quickly.

Ergonomic design

Easy-to-use controls



Tiltable lens unit

Flashlight

Visual camera

# COMPARISON

Stylus



Tiltable lens unit  
Laser pointer

Interchangeable infrared lens



mini USB  
Headset  
Video  
USB



Touch screen  
Joystick control buttons

Dedicated control buttons

(Screen: sketch mode demonstrated)



Multifunctional LCD touch screen allows sketching and marking directly on the screen.



Multifunctional LCD touch screen allows quick and easy camera software menu handling.



High quality visual images.



## Thermal Fusion

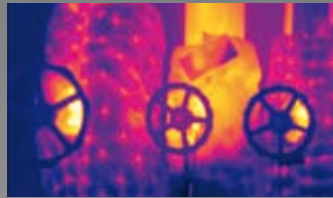
FLIR's new Thermal Fusion functionality allows for easier identification and interpretation of infrared images. This advanced technology enhances the value of an infrared image by allowing you to overlay it directly over the corresponding visible image. This functionality combines the benefits of both the infrared and visual picture at the push of a button. The T-Series camera does this in real-time and the overlay function can be easily adjusted to suit any application such as electrical surveys, building diagnostics and mechanical inspections.



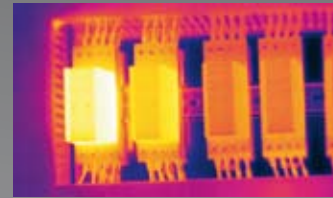
Visual image



Visual image



Infrared image



Infrared image



Thermal Fusion image of steam leaking from a pipe due to insufficient insulation



Thermal Fusion image of an overheated circuit breaker



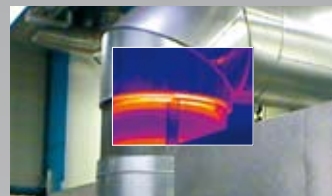
## Picture in Picture

The FLIR T-Series carries a function which allows the user to overlay the infrared image on the visual image while retaining all measurement data. The infrared image can be panned and scaled freely throughout the available visual image. This feature helps to spot and highlight sensitive or dangerous temperature developments so that immediate action can be taken.

This function is built in the camera and is very useful for your reports.



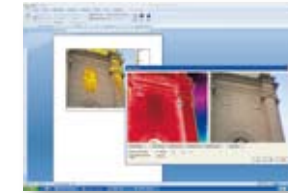
Picture: Maud Hoyens



## All the hardware, software and accessories you need

### Free Quickreport™ software included

This user-friendly reporting software suite enables you to take and store infrared images, and then review, analyze, present and distribute them as required. It also helps you create inspection reports.

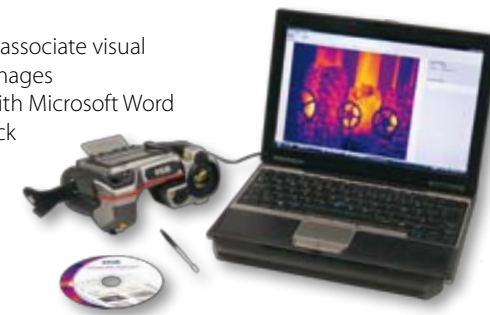


- Drag & Drop
- Incredibly easy
- Microsoft compatible

### FLIR Reporter™ software

This professional reporting suite allows the thermographer to concentrate on reviewing the imagery and making recommendations. The software includes functions such as image processing, automatic report generation, calculation of expected thermal performance (Trending), Picture in Picture and Thermal Fusion. It uses standard word processing and imagery formats.

- Drag & Drop
- Automatically associate visual and infrared images
- Compatible with Microsoft Word with spell check



### Training: Understanding what you see

To get the best performance out of your infrared camera, FLIR Systems cooperates with the Infrared Training Center (ITC) for professional training programs on different levels. For more information visit: [www.infraredtraining.com](http://www.infraredtraining.com)

	T200	T250	T360	T400		T200	T250	T360	T400
<b>Imaging Performance</b>					<b>Measurement</b>				
Field of View (FOV) / Close Focus Limit	25° x 19° / 0.4 m	25° x 19° / 0.4 m	25° x 19° / 0.4 m	25° x 19° / 0.4 m	Object temperature range	-20°C to +120°C 0°C to 350°C (Optional up to +1200°C)	-20°C to +120°C 0°C to 350°C (Optional up to +1200°C)	-20°C to +120°C 0°C to 350°C (Optional up to +1200°C)	-20°C to +120°C 0°C to 350°C (Optional up to +1200°C)
Thermal sensitivity (NETD mK)	100 mK @ +30°C (+86°F)	80 mK @ +30°C (+86°F)	70 mK @ +30°C	60 mK @ +30°C	Accuracy	±2°C or ±2% of reading	±2°C or ±2% of reading	±2°C or ±2% of reading	±2°C or ±2% of reading
Detector Type	Focal Plane Array (FPA) microbolometer	Focal Plane Array (FPA) microbolometer	Focal Plane Array (FPA), microbolometer	Focal Plane Array (FPA), microbolometer	5 Spotmeters	✓	✓	✓	✓
IR resolution	200 x 150 pixels	200 x 150 pixels	320 x 240 pixels	320 x 240 pixels	5 Box areas	✓	✓	✓	✓
Spectral range	7.5 to 13 µm	7.5 to 13 µm	7.5 to 13 µm	7.5 to 13 µm	Isotherm	✓	✓	✓	✓
Digital zoom and pan/focus	1x - 2x continuous auto & manual focus	1x - 2x continuous auto & manual focus	1-4X continuous auto & manual focus	1-8X continuous auto & manual focus	Auto hot/cold spot	✓	✓	✓	✓
IFOV (with 25° lens)	2.18 mRad	2.18 mRad	1.36 mRad	1.36 mRad	Audible/Visual alarm (above/below)	•	•	•	Spotmeters, area boxes and difference temperature
<b>Image Presentation</b>					Color palettes	BW, BW inv, Iron, Rain	BW, BW inv, Iron, Rain	BW, BW inv, Iron, Rain	BW, BW inv, Iron, Rain, Rain HC, Bluered
Thermal	✓	✓	✓	✓	Local adaptation	units, language, date, time and image gallery	units, language, date, time and image gallery	units, language, date, time and image gallery	units, language, date, time and image gallery
Visual	✓	✓	✓	✓	Emissivity	Adjustable in 1.01 increments	Adjustable in 1.01 increments	Adjustable in 1.01 increments	Adjustable in 1.01 increments, emissivity list of predefined materials
Picture in Picture	Scalable	Scalable	moveable & resizeable	moveable & resizeable	Measurement corrections	Reflected ambient temperature and emissivity correction	Reflected ambient temperature and emissivity correction	Reflected ambient temperature and emissivity correction	Reflected ambient temperature and emissivity correction
Thermal Fusion	•	•	Interval	Interval, above/below	<b>Image Storage</b>				
Thumbnail gallery	✓	✓	✓	✓	Type	Removable SD Card	Removable SD Card	Removable SD Card	Removable SD Card
MPEG4	•	•	•	•	Capacity	1000+ JPEG images	1000+ JPEG images	1000+ JPEG images	1000+ JPEG images
Display	Built-in touch-screen LCD display, 3.5 in.	Built-in touch-screen LCD display, 3.5 in.	Built-in touch-screen LCD display, 3.5 in.	Built-in touch-screen LCD display, 3.5 in.	Image storage mode & formats	IR/visible light, standard JPEG	IR/visible light, standard JPEG	IR/visible light, simultaneous storage of IR and visible images, all standard JPEG	IR/visible light, simultaneous storage of IR and visible images, standard JPEG, MPEG4 video (non-rad. video)
Voice annotation (60 sec.)	•	✓	•	✓					
Text from soft keys	•	✓	•	✓					
Text from predefined list	•	•	•	✓					
Sketch	•	✓	•	✓					
Image markers on IR/Visual	•	✓	•	✓					
Video lamp	1000 cd	1000 cd	1000 cd	1000 cd					
Visible light camera resolution	1280 x 1024 (1.3 mp)	1280 x 1024 (1.3 mp)	1280 x 1024 (1.3 mp)	1280 x 1024 (1.3 mp)					

## Standard on all T-series

<b>Laser LocatIR™</b>									
Classification/Type	Class 2/Semiconductor AlGaInP Diode Laser: 1mW/635 nm (red)	Voltage	11-16 VDC	Weight	880 gr.	<b>The camera includes</b>	IR camera with F 1.3 25° lens, Transport case, Lens Cap, Battery, 2-bay battery charger, incl. power supply with local plug, Video Cable, USB cable (2 m), SD Memory Card, Sun Shield, Stylus Pen, User documentation CD-ROM (21 languages), Getting Started guide.		
<b>Power Source</b>		<b>Power management</b>	Automatic shut down and sleep mode after settable time	Size (L x W x H) with lens pointing forward	106 x 201 x 125 mm ,				
Battery type	Rechargeable Lithium-Ion battery	<b>Environmental</b>		Tripod mounting	1/4" - 20				
Battery operating time	4 hours+	Operating temp.range	-15°C to +50°C	<b>Interfaces</b>					
Battery charging	2 bay charging system, 10-16 V input.	Storage temperature range	-40°C to +70°C	USB (cable included)	Image transfer to PC				
Charging status	Indicated by LED's	Humidity	10% to 95%, IEC 359	Video output	PAL / NTSC Video				
AC operation	AC adapter: 90-260 VAC input, 12 V output to camera	Water and dust resistant	IP 54, IEC 360	<b>Software</b>					
		Shock	25G, IEC 68-2-29	FLIR QuickReport™	Included				
		Vibration	2G, IEC 68-2-7	FLIR Reporter™ 8	Optional				

## Value-added accessories

A complete set of accessories is available to enhance your imaging and measurement applications, from a comprehensive range of lenses to multiple charger systems.



Pouch



Extra Battery



Car charger



Battery charger



30 mm / 15° lens



10 mm / 45° lens

## Service and warranty:

Without proper maintenance, an infrared camera can yield false readings. Getting false temperature measurements can compromise worker safety and the reputation of the camera operator.

Local ISO 9001:2000 certified FLIR Systems service centres provide inspection, calibration and repair to all FLIR brand infrared cameras.



[www.flirthermography.com](http://www.flirthermography.com)

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