

# Fluke Ti25, Ti10 and Ti9 Thermal Imagers

## Technical Data

### The ultimate tools for troubleshooting and maintenance

The perfect tools to add to your problem solving arsenal. Built for tough work environments, these high-performance, fully radiometric imagers are ideal for troubleshooting electrical installations, electro-mechanical equipment, process equipment, HVAC/R equipment and others.

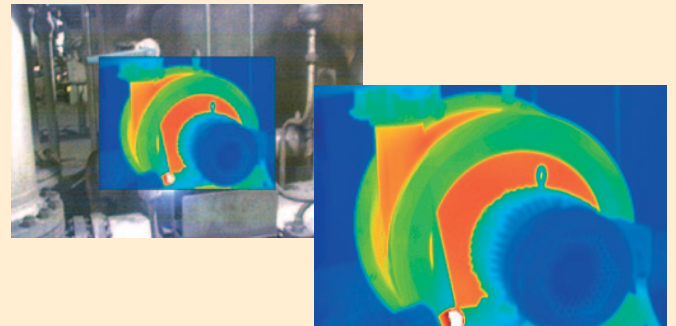
- Fluke Ti25 and Ti10 imagers come with enhanced problem detection and analysis capabilities with IR-Fusion® Technology. Simply scroll through the different viewing modes quickly to better identify trouble areas in Full IR thermal, picture-in-picture, or automatic blend visual and thermal images. Fluke Ti9 imagers can be upgraded to a full Ti10 with IR-Fusion at a later time.
- Optimized for field use in harsh work environments.
- Engineered and tested to withstand a 2 m (6.5 ft) drop—When was the last time you dropped a tool?
- Withstands dust and water—tested to an IP54 rating.
- Delivers the clear, crisp images needed to find problems fast.
- Identify even small temperature differences that could indicate problems with excellent thermal sensitivity (NETD).
- Intuitive, three-button menu is easy to use—simply navigate with the push of a thumb.
- No need to carry pen and paper—record findings by speaking into the camera. Voice annotations can be recorded with every image you take. Voice comments are saved along with individual images for future reference (Ti25 only).
- Everything needed to get started is included.
- Adjustable hand strap for left-or right-handed use.
- Manufactured in the U.S.A.



### IR-Fusion® Technology

See things both ways—infrared and visual (visible light) images fused together communicating critical information faster and easier—traditional infrared images are no longer enough.

Fluke led the way in the development and use of IR-Fusion and the industry followed. Both visible and infrared images allow you to communicate exactly where potential savings can be gained. IR-Fusion is standard on Fluke Ti25 and Ti10 models.



**Detailed specifications**

	<b>Ti25</b>	<b>Ti10</b>	<b>Ti9</b>
<b>Temperature</b>			
Temperature measurement range (not calibrated below -10 °C)	-20 °C to +350 °C (-4 °F to + 662 °F)	-20 °C to +250 °C (-4 °F to + 482 °F)	
Accuracy	± 2 °C or 2 % (whichever is greater)	± 5 °C or 5 % (whichever is greater)	
On-screen emissivity correction	Yes	—	
<b>Imaging performance</b>			
Field of view	23° x 17°		
Spatial resolution (IFOV)	2.5 mRad		
Minimum focus distance	Thermal lens: 15 cm (6 in) Visible (visual) light lens: 46 cm (18 in)		Thermal lens only: 15 cm (6 in)
Focus	Manual, one-handed focus		
Image frequency	9 Hz refresh rate		
Detector type	160 X 120 focal plane array, uncooled microbolometer		
Infrared lens type	20 mm F = 0.8 lens		
Thermal sensitivity (NETD)	≤ 0.1 °C at 30 °C (100 mK)	≤ 0.2 °C at 30 °C (200 mK)	
Infrared spectral band	7.5 μm to 14 μm		
Visual camera	640 x 480 resolution		
<b>Image presentation</b>			
Palettes	Ironbow, blue-red, high contrast, amber, hot metal, grey	Ironbow, blue-red, high contrast, grey	
Level and span	Smooth auto-scaling and manual scaling of level and span		
Minimum span (in manual mode)	2.5 °C (4.5 °F)	5 °C (9 °F)	
Minimum span (in auto mode)	5 °C (9 °F)	10 °C (18 °F)	
IR-Fusion® information	Full infrared with MAX, MID, or MIN automatic blending; and picture-in-picture with MAX, MID, or MIN automatic blending (Visual and IR blending)	Full infrared or picture-in-picture	No IR-Fusion. Full Infrared only. Ti9 models are upgradable to a full Ti10 for an additional fee.*
Picture-In-Picture (PIP)	Three levels of on-screen IR blending displayed in center 320 x 240 pixels	100 % IR displayed in center 320 x 240 pixels	—
Full screen (PIP off)	Three levels of on-screen IR blending displayed in center 640 x 480 LCD	100 % IR displayed in center 640 x 480 LCD	
<b>Voice annotation</b>			
Voice annotation	60 seconds maximum recording time per image	—	
<b>Image and data storage</b>			
Storage medium	SD memory card (2 GB memory card will store at least 1200 fully radiometric (.is2) IR and linked visual images each with 60 seconds voice annotations or 3000 basic (.bmp) IR images)		
File formats	Non-radiometric (.bmp) or fully-radiometric (.is2). No analysis software required for .bmp files.		
Export file formats w/SmartView® software	JPEG, BMP, GIF, PNG, TIFF		

\*Contact your Fluke sales representative for more information about upgrade options.

## General specifications

<b>Temperature</b>	Operating: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to +50 °C (-4 °F to 122 °F) without batteries
<b>Relative humidity</b>	10 % to 90 % non-condensing
<b>Display</b>	9.1 cm (3.6 in) diagonal landscape color VGA (640 x 480) LCD with backlight (selectable bright or auto)
<b>Controls and adjustments</b>	User selectable temperature scale (°C/°F) Language selection Time/Date set Emissivity selection and Reflected Background Temperature Compensation (Ti25 only) User selectable Hot Spot and Cold Spot on the image (Ti25 only) Ti25 allows user to adjust palette, alpha blend, level, span, PIP, and emissivity on a captured image before it is stored.
<b>Software</b>	SmartView® full analysis and reporting software included
<b>Power</b>	Battery: Internal rechargeable battery pack (included) Battery life: Three to four hours continuous use (assumes 50 % brightness of LCD) Battery charge time using ac adapter/charger and dc car charger: Two hours for full charge
<b>AC operation/charging</b>	AC adapter/charger (110 Vac to 220 Vac, 50 Hz to 60 Hz). Charges battery while imager is operating. Universal ac mains adapters included.
<b>Power saving</b>	Sleep mode activated after 5 minutes of inactivity, automatic power off after 20 minutes of inactivity
<b>Safety standards</b>	CE Directive: IEC/EN 61010-1 2nd Edition Pollution Degree 2
<b>Electromagnetic compatibility</b>	EMC directive: EN61326-1 C-Tick: IEC/EN 61326 US FCC: CFR 47, Part 15 Class A
<b>Vibration</b>	2 G, IEC 68-2-29
<b>Shock</b>	25 G, IEC 68-2-29 (2 m or 6.5 ft drop, 6 sides)
<b>Dimensions (HxWxL)</b>	0.27 m x 0.13 m x 0.15 m (10.5 in x 5 in x 6 in)
<b>Weight</b>	1.2 kg (2.65 lb)
<b>IP rating</b>	IP54
<b>Warranty</b>	Two-years
<b>Calibration cycle</b>	Two-years (assumes normal operation and normal aging)
<b>Supported languages</b>	English, Italian, German, Spanish, French, Russian, Portuguese, Swedish, Turkish, Czech, Polish, Finnish, Simplified Chinese, Traditional Chinese, Korean, and Japanese

## Ordering information

<b>FLK-Ti25 9HZ</b>	Thermal Imager
<b>FLK-Ti10 9HZ</b>	Thermal Imager
<b>FLK-Ti9 9HZ</b>	Thermal Imager

Not all models available in all areas.

### Included with product

Thermal imaging camera w/20 mm lens, ac power supply/battery charger (including mains adapters), SD memory card, SD card reader (USB) for downloading images into your computer, SmartView® software with free software upgrades for life, rugged hard, carrying case, soft transport bag, hand strap, users manual, warranty registration card, interactive training DVD.

### Optional accessories

<b>FLK-TI-CHARGER</b>	Thermal Imager Car Charger
<b>FLK-TI-VISOR</b>	Thermal Imager Visor



**Fluke.** Not just infrared.  
Infrared you can use.™

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3 Fluke Corporation Ti25, Ti10 and Ti9 Thermal Imagers

# Fluke Industrial Thermal Imagers

Models: Ti32, Ti29 and Ti27. Three models specifically for industrial and electrical applications.

## Technical Data

**P3**  
Series

Proven  
Practical  
Performance

The P3 Series: Superior, not Superfluous. Fluke is how other tools are measured.



**Ti27**  
• 240x180 IR resolution  
• 43,200 total IR pixels

**Ti29**  
• 280x210 IR resolution  
• 58,800 total IR pixels

**Ti32**  
• 320x240 IR resolution  
• 76,800 total IR pixels



The greatest technological advancement in thermography may be how Fluke has made it so simple to capture images and analyze data right out of the box.

### Superior image quality

Industry-leading thermal sensitivity and spatial resolution combined with a high definition display, creates the sharpest images in the industry.

### One-handed, easy-to-use interface

With just a push of your thumb, go from one-handed manual smart focus to adding picture-in-picture and even add voice comments.

### Torture tested™

Before a Fluke goes into your hands, we drop it from ours. Only Fluke thermal imagers are designed from the inside out to withstand a 6.5 ft drop.

### Patented Fluke IR-Fusion®

(Picture-in-picture and auto blending)  
Precision visible and IR image alignment allows Fluke to offer the only on-camera blended infrared and visible image to better diagnose issues.

### Interchangeable lenses

Interchangeable wide-angle and IR-Fusion compatible telephoto lenses to cover any application.

**Fluke. Not just infrared, infrared you can use.®**



**Industrial**  
Mechanical, electromechanical and general building maintenance.



**Process**  
Refractory insulation, tank and vessel levels, steam systems and traps, pipes and valves, etc.



**Electrical**  
Unbalanced loads, overloaded systems, wiring mistakes or component failure, etc.

**IR-Fusion**®

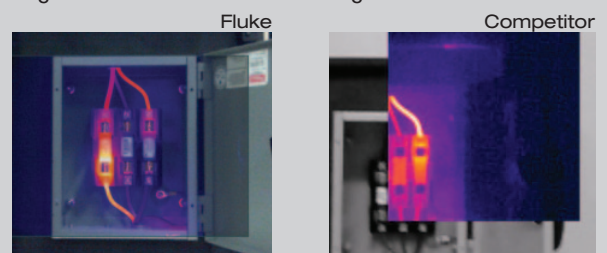
### Patented Fluke IR-Fusion® Technology

#### More than picture in picture

Infrared images alone can be difficult to understand, which is why Fluke pioneered IR-Fusion, a revolutionary marriage of visible and infrared images never before seen in commercial or industrial thermal imagers. Automatically capturing a visible image with every infrared image allows you to always know exactly what you're looking at.

### Not all fusion is created equal

Don't be fooled by imitators. No other manufacturer can boast on-camera blending. Compare the images. Only Fluke has mastered the ability to create the industry's only transparent, perfectly blended and aligned visible and infrared images.



**Detailed specifications**

	Ti32	Ti29	Ti27
<b>Temperature</b>			
Temperature measurement range (not calibrated below -10 °C)	-20 °C to +600 °C (-4 °F to +1112 °F)		
Temperature measurement accuracy	± 2 °C or 2 % (at 25 °C nominal, whichever is greater)		
On-screen emissivity correction	Yes		
On-screen reflected background temperature compensation	Yes		
On-screen transmission correction	Yes		
<b>Imaging performance</b>			
Image capture frequency	9 Hz refresh rate or 60 Hz refresh rate depending upon model variation		
Detector type	Focal Plane Array, uncooled microbolometer, 320 x 240 pixels	Focal Plane Array, uncooled microbolometer, 280 x 210 pixels	Focal Plane Array, uncooled microbolometer, 240 x 180 pixels
Thermal sensitivity (NETD)	≤ 0.045 °C at 30 °C target temp. (45 mK)	≤ 0.05 °C at 30 °C target temp (50 mK)	
Total pixels	76,800	58,800	43,200
Infrared spectral band	7.5 μm to 14 μm (long wave)		
Visual (visible light) camera	Industrial performance 2.0 megapixel		
Minimum focus distance	45 cm (approx. 18 in)		
<b>Standard infrared lens type</b>			
Field of view	23 ° x 17 °		
Spatial resolution (IFOV)	1.25 mRad	1.43 mRad	1.67 mRad
Minimum focus distance	15 cm (approx. 6 in)		
<b>Optional telephoto infrared lens type</b>			
Field of view	11.5 ° x 8.7 °		
Spatial resolution (IFOV)	0.63 mRad	0.72 mRad	0.84 mRad
Minimum focus distance	45 cm (approx. 18 in)		
<b>Optional wide-angle infrared lens type</b>			
Field of view	46 ° x 34 °		
Spatial resolution (IFOV)	2.50 mRad	2.86 mRad	3.34 mRad
Minimum focus distance	7.5 cm (approx. 3 in)		
Focus mechanism	Manual, one-handed Smart Focus capability		
<b>Image presentation</b>			
<b>Palettes</b>			
Standard	Ironbow, Blue-Red, High Contrast, Amber, Amber Inverted, Hot Metal, Grayscale, Grayscale Inverted		
Ultra Contrast™	Ironbow Ultra, Blue-Red Ultra, High Contrast Ultra, Amber Ultra, Amber Inverted Ultra, Hot Metal Ultra, Grayscale Ultra, Grayscale Inverted Ultra		
Level and span	Smooth auto-scaling and manual scaling of level and span		
Fast auto toggle between manual and auto modes	Yes		
Fast auto-rescale in manual mode	Yes		
Minimum span (in manual mode)	2.5 °C (4.5 °F)		
Minimum span (in auto mode)	5 °C (9 °F)		
<b>IR-Fusion® information</b>			
Automatically aligned (parallax corrected) visual and IR blending	Yes		
Picture-In-Picture (PIP)	Three levels of on-screen IR blending displayed in center of LCD		
Full screen infrared	Three levels of on-screen IR blending displayed on LCD		
Color alarms (temperature alarms)	High-temperature alarm (user-selectable)		
Voice annotation	60 seconds maximum recording time per image; reviewable playback on imager		
<b>Image capture and data storage</b>			
	The Ti32, Ti29 and Ti27 allow users to adjust palette, blending, level, span, IR-Fusion® mode, emissivity, and reflected background temperature compensation, and transmission correction on a captured image before it is stored		
Image capture, review, save mechanism	One-handed image capture, review, and save capability		
Storage medium	SD Memory Card (2 GB memory card will store at least 1200 fully radiometric (.is2) IR and linked visual images each with 60 seconds voice annotations, or 3000 basic bitmap (.bmp) images, or 3000 jpeg (.jpeg) images; transferrable to PC via included multi-format USB card reader		
File formats	Non-radiometric (.bmp) or (.jpeg) or fully-radiometric (.is2)		
	No analysis software required for non-radiometric (.bmp and .jpeg) files		
Export file formats w/SmartView® software	BMP, DIB, GIF, JPE, JFIF, JPEG, JPG, PNG, TIF, and TIFF		
Memory review	Thumbnail view navigation and review selection		

## General specifications

<b>Operating temperature</b>	-10 °C to +50 °C (14 °F to 122 °F)
<b>Storage temperature</b>	-20 °C to +50 °C (-4 °F to 122 °F) without batteries
<b>Relative humidity</b>	10 % to 95 % non-condensing
<b>Display</b>	9.1 cm (3.7 in) diagonal landscape color VGA (640 x 480) LCD with backlight and clear protective cover
<b>Controls and adjustments</b>	User selectable temperature scale (°C/°F) Language selection Time/Date set Emissivity selection Reflected background temperature compensation Transmission correction User selectable hot spot and cold spot, and center point on the image (other custom markers and shapes in SmartView® software) High temperature alarm User selectable backlight: "Full Bright" or "Auto" Information display preference
<b>Software</b>	SmartView® full analysis and reporting software included
<b>Batteries</b>	Two lithium ion rechargeable smart battery packs with five-segment LED display to show charge level
<b>Battery life</b>	Four+ hours continuous use per battery pack (assumes 50 % brightness of LCD)
<b>Battery charge time</b>	2.5 hours to full charge
<b>AC battery charging</b>	Two-bay ac battery charger (110 V ac to 220 V ac, 50/60 Hz) (included), or in-imager charging. AC mains adapters included. Optional 12 V automotive charging adapter.
<b>AC operation</b>	AC operation with included power supply (110 V ac to 220 V ac, 50/60 Hz). AC mains adapters included.
<b>Power saving</b>	Sleep mode activated after five minutes of inactivity, automatic power off after 30 minutes of inactivity
<b>Safety standards</b>	CSA (US and CAN): C22.2 No. 61010-1-04, UL: UL STD 61010-1 (2nd Edition), ISA: 82.02.01
<b>Electromagnetic compatibility</b>	Meets all applicable requirements in EN61326-1:2006
<b>C Tick</b>	IEC/EN 61326-1
<b>US FCC</b>	CFR 47, Part 15 Class B
<b>Vibration</b>	0.03 g2/Hz (3.8 grms), IEC 68-2-6
<b>Shock</b>	25 g, IEC 68-2-29
<b>Drop</b>	2 meter (6.5 feet) with standard lens
<b>Size (H x W x L)</b>	27.7 cm x 12.2 cm x 17.0 cm (10.9 in x 4.8 in x 6.7 in)
<b>Weight (battery included)</b>	1.05 kg (2.3 lb)
<b>Enclosure rating</b>	IP54 (protected against dust, limited ingress; protection against water spray from all directions)
<b>Warranty</b>	Two-years (standard), extended warranties are available.
<b>Recommended calibration cycle</b>	Two-years (assumes normal operation and normal aging)
<b>Supported Languages</b>	Czech, English, Finnish, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Traditional Chinese, and Turkish

## Ordering information

- FLK-Ti32 9 Hz** Industrial-Commercial Thermal Imager, 9 Hz
- FLK-Ti32 60 Hz** Industrial-Commercial Thermal Imager, 60 Hz
- FLK-Ti29 9 Hz** Industrial-Commercial Thermal Imager, 9 Hz
- FLK-Ti29 60 Hz** Industrial-Commercial Thermal Imager, 60 Hz
- FLK-Ti27 9 Hz** Industrial-Commercial Thermal Imager, 9 Hz
- FLK-Ti27 60 Hz** Industrial-Commercial Thermal Imager, 60 Hz

### Included

Thermal imager with standard infrared lens; ac power supply and battery pack charger (including mains adapters); two, rugged lithium ion smart battery packs; SD memory card; multi-format USB memory card reader for downloading images into your computer; SmartView® software with free software upgrades for life; rugged, hard carrying case; soft transport bag; adjustable hand strap; printed users manual; warranty registration card.

### Optional accessories

- FLK-LENS/TELE1** Telephoto Infrared Lens
- FLK-LENS/WIDE1** Wide-angle Infrared Lens
- TI-CAR-CHARGER** Thermal Imager Vehicle Charger
- TI-VISOR** Thermal Imager Visor
- BOOK-ITP** Introduction to Thermography Principles Book
- TI-TRIPOD** Tripod Mounting Base Accessory



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Infrared you can use.™

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