

# FLUKE®

## Fluke TiR1, TiR and TiRx Thermal Imagers

### Technical Data



Optimized for building envelope, restoration and remediation, inspection and roofing applications.

The Fluke TiR1, TiR and TiRx Thermal Imagers are the perfect imagers for building envelope, restoration and remediation, inspection and roofing applications.

- The TiR1 and TiR imagers come with IR-Fusion® Technology both in camera and software (combines visible image with IR image in full screen or picture-in-picture views) for easy identification and reporting of problems. Fluke TiRx imagers can be upgraded to a full TiR with IR-Fusion at a later time.\*
- Rugged and reliable: Engineered to withstand a 2 m (6.5 ft) drop
- 9.1 cm (3.6 in) diagonal landscape color VGA (640 x 480) LCD
- Temperature range and thermal sensitivity optimized for building diagnostics applications
- Excellent thermal sensitivity for seeing even small temperature differences (which could indicate problems)
- Adjustable hand strap for left- or right-handed users

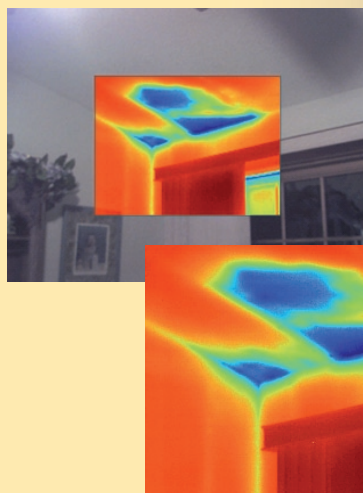
\*Contact your local Fluke sales representative for upgrade information.



### 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 TiR1 and TiR models.



**Detailed specifications**

	Fluke TiR1	Fluke TiR	TiRx
<b>Temperature</b>			
Temperature measurement range (not calibrated below -10 °C)	-20 °C to +100 °C (-4 °F to + 212 °F)		
Accuracy	± 2 °C or 2 % (whichever is greater)	± 5 °C or 5 % (whichever is greater)	
Measurement modes	Smooth auto-scaling and manual scaling		
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: 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)	≤ 0.07 °C at 30 °C (70 mK)	≤ 0.1 °C at 30 °C (100 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)		
Minimum span (in auto mode)	5 °C (9 °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. TiRx models are upgradable to a full TiR 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**

Temperature	Operating: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to +50 °C (-4 °F to 122 °F) without batteries
Relative humidity	10 % to 90 % non-condensing
Display	9.1 cm (3.6 in) diagonal landscape color VGA (640 x 480) LCD with backlight (selectable bright or auto)
Controls and adjustments	User selectable temperature scale (°C/°F) Language selection Time/date set Emissivity selection and reflected background temperature compensation (TiR1 only) User selectable hot spot and cold spot on the image (TiR1 only) TiR1 allows user to adjust palette, alpha blend, level, span, PIP, and emissivity on a captured image before it is stored.
Software	SmartView® full analysis and reporting software included
Power	Battery: Internal rechargeable battery pack (included) Battery life: 3 to 4 hours continuous use (assumes 50 % brightness of LCD) Battery charge time using ac adapter/charger or dc car charger: 2 hours for full charge
AC operation/charging	AC adapter/charger (110 V ac to 220 V ac, 50 Hz to 60 Hz). Charges battery while imager is operating. Universal ac mains adapters included.
Power saving	Sleep mode activated after 5 minutes of inactivity, automatic power off after 30 minutes of inactivity
Safety standards	CE Directive: IEC/EN 61010-1 2nd Edition Pollution Degree 2
Electromagnetic compatibility	EMC directive: EN61326-1 C-Tick: IEC/EN 61326 US FCC: CFR 47, Part 15 Class A
Vibration	2 G, IEC 68-2-29
Shock	25 G, IEC 68-2-29 (2 m or 6.5 ft drop, 6 sides)
Dimensions (HxWxL)	0.27 m x 0.13 m x 0.15 m (10.5 in x 5 in x 6 in)
Weight	1.2 kg (2.65 lb)
IP rating	IP54
Warranty	Two-years
Calibration cycle	Two-years (assumes normal operation and normal aging)
Supported languages	English, Italian, German, Spanish, French, Russian, Portuguese, Swedish, Turkish, Czech, Polish, Finnish, Simplified Chinese, Traditional Chinese, Korean, and Japanese

**Ordering information**

- FLK-TIR1 9HZ Thermal Imager
- FLK-TIR 9HZ Thermal Imager
- FLK-TIRx 9HZ 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, and interactive training DVD.

**Optional accessories**

- FLK-TI-CHARGER Thermal Imager Car Charger
- FLK-TI-VISOR Thermal Imager Visor



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

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