

Fluke TiR1 and TiR Thermal Imagers

Technical Data



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

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

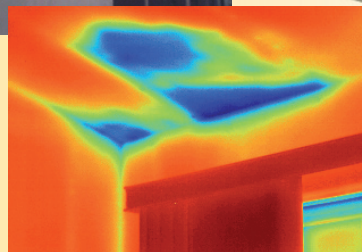
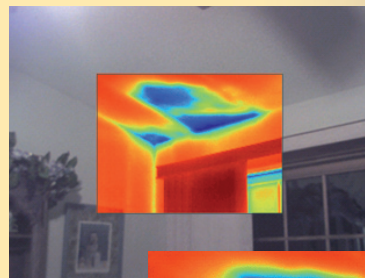
- All Fluke imagers come with IR-Fusion® Technology both in camera and software (combines visible image with IR image in full screen or picture-in-picture views) for easy identification and reporting of problems
- Rugged and reliable: Engineered to withstand a 2 m (6.5 ft) drop
- 9.1 cm (3.6 in) diagonal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

IR-Fusion, a patent-pending technology, simultaneously captures a digital photo in addition to the infrared image and fuses together taking the mystery out of IR image analysis. IR-Fusion is standard on Fluke TiR1 and TiR models.



Detailed specifications

	Fluke TiR1	Fluke TiR
Temperature		
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	—
Imaging performance		
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)	
Focus	Manual	
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	
Image presentation		
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
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
Voice annotation		
Voice annotation	60 seconds maximum recording time per image	—
Image and data storage		
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 non-radiometric (.bmp) files	
Export file formats w/SmartView™ software	JPEG, BMP, GIF, PNG, TIFF, WMF, EXIF, and EMF	

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 (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 (1 m drop, 5 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

FLUKE-TiR1 Thermal Imager
FLUKE-TiR Thermal Imager

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

Optional accessories

Fluke-TI Charger Thermal Imager Car Charger (standard 12 V dc auxiliary power adapter) Compatible with both TiR1 and TiR models.



Fluke. *Keeping your world up and running.®*

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