FLUKE®

Fluke Building Diagnostic Thermal Imagers

Models: TiR1 and TiR

Technical Data

TiR

TiR1

High performance thermal imagers have never been this affordable. This rugged. Or, this easy to use ... until **now**.

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

- These 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 (3.7 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

Incredible performance at unbelievably low prices.

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

Building problems, defects and general maintenance

Energy audit, building inspection, weatherization

Restoration, water damage, roofing

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 to you 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.

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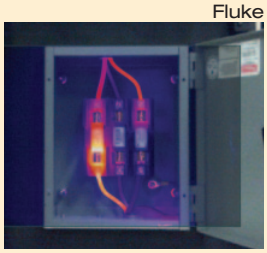
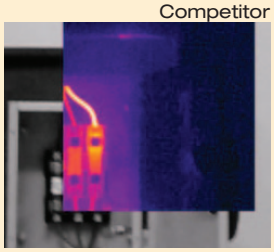


Competitor



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Detailed specifications

	TiR1	TiR
Temperature		
Temperature measurement range (not calibrated below –10 °C)	–20 °C to +150 °C (–4 °F to +302 °F)	–20 °C to +150 °C (–4 °F to +302 °F)
Temperature measurement accuracy	± 2 °C or 2 % (at 25 °C nominal, whichever is greater)	
On-screen emissivity correction	Yes	No
On-screen reflected background temperature compensation	Yes	No
Imaging performance		
Image capture frequency	9 Hz refresh rate	
Detector type	160 X 120 Focal Plane Array, uncooled microbolometer	
Thermal sensitivity (NETD)	≤ 0.07 °C at 30 °C target temp. (70 mK)	≤ 0.09 °C at 30 °C target temp. (90 mK)
Infrared spectral band	7.5 µm to 14 µm (long wave)	
Visual (visible light) camera	Industrial performance 1.3 megapixel	
Minimum focus distance	46 cm (approx. 18 in)	
Field of view	23 ° x 17 °	
Spatial resolution (IFOV)	2.5 mRad	
Minimum focus distance	15 cm (approx. 6 in)	
Focus mechanism	Manual, one-handed Smart Focus capability	
Image presentation		
Standard	Ironbow, Blue-Red, High Contrast, Amber, Hot Metal, Grayscale	Ironbow, Blue-Red, High Contrast, Grayscale
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)	
IR-Fusion® information		
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	100 % IR displayed in center of LCD
Full screen infrared	Three levels of on-screen IR blending displayed on LCD	100 % IR displayed on LCD
Voice annotation	60 seconds maximum recording time per image; reviewable playback on imager	–
Image capture and data storage		
	The TiR1 allows user to adjust palette, blending, level, span, IR-Fusion® mode, emissivity, and reflected background temperature compensation 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 transferrable to PC via included multi-format USB card reader	
File formats	Non-radiometric (.bmp) or fully-radiometric (.is2)	
	No analysis software required for non-radiometic bitmap (.bmp) files	
Export file formats w/SmartView® software	BMP, DIB, GIF, JPE, JFIF, JPEG, JPG, PNG, TIF, and TIFF	
Memory review	Sequential image navigation and review	

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General specifications

Operating temperature	–10 °C to +50 °C (14 °F to 122 °F)
Storage temperature	–20 °C to +50 °C (–4 °F to 122 °F) without batteries
Relative humidity	10 % to 95 % non-condensing
Display	9.1 cm (3.7 in) diagonal landscape color VGA (640 x 480) LCD with backlight and clear protective cover
Controls and adjustments	User selectable temperature scale (°C/°F) Language selection Time/Date set Emissivity selection (TiR1 only) Reflected background temperature compensation (TiR1 only) User selectable hot spot and cold spot, and center point on the image, (TiR1 only) (other custom markers and shapes in SmartView® software) User selectable backlight: "Full Bright" or "Auto"
Software	SmartView® full analysis and reporting software included
Batteries	Internal rechargeable battery pack (included)
Battery life	Three to four hours continuous use (assumes 50 % brightness of LCD)
Battery charge time	2.5 hours to full charge
AC battery charging	AC adapter/charger (110 V ac to 220 V ac, 50/60 Hz) (included), charges battery while imager is operating or turned off, ac mains adapters included.
AC operation	AC operation with included power supply (110 V ac to 220 V ac, 50/60 Hz). AC mains adapters included.
Power saving	Sleep mode activated after five minutes of inactivity, automatic power off after 30 minutes of inactivity
Safety standards	CSA (US and CAN): C22.2 No. 61010-1-04, UL: UL STD 61010-1 (2nd Edition), ISA: 82.02.01
Electromagnetic compatibility	Meets all applicable requirements in EN61326-1:2006
C Tick	IEC/EN 61326-1
US FCC	CFR 47, Part 15 Class B
Vibration	0.03 g2/Hz (3.8 grms), IEC 68-2-6
Shock	25 g, IEC 68-2-29
Drop	2 meter (6.5 feet)
Size (H x W x L)	26.7 cm x 12.7 cm x 15.2 cm (10.5 in x 5.0 in x 6.0 in)
Weight (battery included)	1.2 kg (2.6 lb)
Enclosure rating	IP54 (protected against dust, limited ingress; protection against water spray from all directions)
Warranty	Two-years (standard)
Recommended calibration cycle	Two-years (assumes normal operation and normal wear)
Supported Languages	Czech, English, Finnish, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Traditional Chinese, and Turkish

Ordering information

FLK-TiR1 9Hz Thermal Imager
FLK-TiR 9Hz Thermal Imager
Included
Thermal imager; ac power supply/battery charger (including mains adapters); SD memory card; multi-format USD 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

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

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

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