Fluke Building Diagnostic Thermal Imagers

Models: TiR32, TiR1 and TiR

Technical Data

TiR32

TiR1

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

We, at Fluke, are never satisfied leaving the best tools in the hands of the elite, which is why we recently added a new member to our thermal imaging family. The new Fluke TiR32 combines a powerful 320x240 sensor into the award winning, rugged design of the TiR1 and TiR, delivering the first industrial grade, high performance thermal imager. The result is strikingly crisp, detailed images that, blended with our patented IR-Fusion®, are sure to make a lasting impression on both your customers and business profitability. Don't take our word for it—see it yourself!

All Fluke thermal imagers are designed, tested, and manufactured in the USA, and feature a comprehensive two year warranty—not that you'll need it. These Fluke thermal imagers are able to withstand a 2 meter (6.5 foot) drop and meet the requirements for an IP54 rating against dust and moisture.

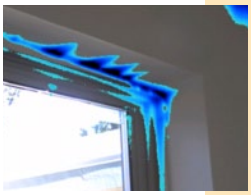
For added versatility and special applications, the TiR32 includes two field-swappable, rechargeable batteries. Use the optional telephoto and wide-angle lenses to bring distant and wide views into sharp focus.

- Building problems, defects and general maintenance
- Energy audit, building inspection, weatherization
- Restoration, water damage, roofing

Incredible performance at unbelievably low prices.

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

Made in the U.S.A.



IR-Fusion® Technology, standard on ALL Fluke thermal imagers

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. Patented IR-Fusion is the only solution with physical parallax correction, enabling the perfect alignment and blending of both infrared and visible images. While many manufacturers have attempted to duplicate Fluke IR-Fusion, none have been able to match it. Turn to Fluke IR-Fusion to deliver the industry's best thermal images.

IR-Fusion®

FLUKE®

Detailed specifications

	TiR32	TiR1	TiR
Temperature			
Temperature measurement range (not calibrated below –10 °C)	–20 °C to +150 °C (–4 °F to +302 °F)	–20 °C to +100 °C (–4 °F to +212 °F)	–20 °C to +100 °C (–4 °F to +212 °F)
Temperature measurement accuracy	± 2 °C or 2 % (at 25 °C nominal, whichever is greater)		± 5 °C or 5 % (at 25 °C nominal, whichever is greater)
On-screen emissivity correction	Yes		–
On-screen reflected background temperature compensation	Yes		–
On-screen transmission correction	Yes	–	
Imaging performance			
Image capture frequency	9 Hz refresh rate or 60 Hz refresh rate depending upon model variation	9 Hz refresh rate	
Detector type	320 X 240 Focal Plane Array, uncooled microbolometer	160 X 120 Focal Plane Array, uncooled microbolometer	
Thermal sensitivity (NETD)	≤ 0.05 °C at 30 °C target temp. (50 mK)	≤ 0.07 °C at 30 °C target temp. (70 mK)	≤ 0.1 °C at 30 °C target temp. (100 mK)
Infrared spectral band	7.5 µm to 14 µm (long wave)		
Visual (visible light) camera	Industrial performance 2.0 megapixel	Industrial performance 1.3 megapixel	
Minimum focus distance	46 cm (approx. 18 in)		
Standard infrared lens type			
Field of view	23 ° x 17 °		
Spatial resolution (IFOV)	1.25 mRad	2.5 mRad	2.5 mRad
Minimum focus distance	15 cm (approx. 6 in)		
Optional telephoto infrared lens type			
Field of view	11.5 ° x 8.7 °	–	
Spatial resolution (IFOV)	0.63 mRad	–	
Minimum focus distance	45 cm (approx. 18 in)	–	
Optional wide-angle infrared lens type			
Field of view	46 ° x 34 °	–	
Spatial resolution (IFOV)	2.50 mRad	–	
Minimum focus distance	7.5 cm (approx. 3 in)	–	
Focus mechanism	Manual, one-handed Smart Focus capability		
Image presentation			
Palettes			
Standard	Ironbow, Blue-Red, High Contrast, Amber, Amber Inverted, Hot Metal, Grayscale, Grayscale Inverted	Ironbow, Blue-Red, High Contrast, Amber, Hot Metal, Grayscale	Ironbow, Blue-Red, High Contrast, Grayscale
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)	2.0 °C (3.6 °F)	2.5 °C (4.5 °F)	
Minimum span (in auto mode)	3 °C (5.4 °F)	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
Color alarms (temperature alarms)	Dewpoint temperature alarm (user-selectable)	–	
Voice annotation	60 seconds maximum recording time per image; reviewable playback on imager		–
Image capture and data storage			
	The TiR32 allows user 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.	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, 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)	Non-radiometric (.bmp) or fully-radiometric (.is2)	
	No analysis software required for non-radiometric (.bmp and .jpeg) files	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	Thumbnail view navigation and review selection	Sequential image navigation and review	

BMP, DIB, GIF, JPE, JFIF, JPEG, JPG, PNG, TIF, and TIFF

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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 (TiR32 and TiR1 only) Reflected background temperature compensation (TiR32 and TiR1 only) Transmission correction (TiR32 only) User selectable hot spot and cold spot, and center point on the image (other custom markers and shapes in SmartView® software) (TiR32 and TiR1 only) Dewpoint temperature alarm (TiR32 only) User selectable backlight: "Full Bright" or "Auto" Information display preference (TiR32 only)
Software	SmartView® full analysis and reporting software included
Batteries	TiR32: Two lithium ion rechargeable smart battery packs with five-segment LED display to show charge level TiR1 and TiR: Internal rechargeable battery pack (included)
Battery life	TiR32: Four+ hours continuous use per battery pack (assumes 50 % brightness of LCD) TiR1 and TiR: Three to four hours continuous use (assumes 50 % brightness of LCD)
Battery charge time	2.5 hours to full charge
AC battery charging	TiR32: 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. TiR1 and TiR: 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	TiR32: 2 meter (6.5 feet) with standard lens, TiR1 and TiR: 2 meter (6.5 feet)
Size (H x W x L)	TiR32: 27.7 cm x 12.2 cm x 17.0 cm (10.9 in x 4.8 in x 6.7 in), TiR1 and TiR: 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)	TiR32 1.05 kg (2.3 lb), TiR1 and TiR: 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 aging)
Supported Languages	Czech, English, Finnish, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Traditional Chinese, and Turkish

Ordering information

FLK-TiR32 9Hz Building Diagnostics Thermal Imager, 9 Hz
FLK-TiR32 60Hz Building Diagnostics Thermal Imager, 60 Hz
Included with TiR32 models
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; interactive training DVD.

FLK-TiR1 9Hz Thermal Imager
FLK-TiR 9Hz Thermal Imager
Included with TiR1 and TiR models
Thermal imager with standard infrared lens; 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; interactive training DVD.

Optional accessories

FLK-LENS/TELE1 Telephoto Infrared Lens (TiR32 only)
FLK-LENS/WIDE1 Wide-angle Infrared Lens (TiR32 only)
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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