

# Fluke TiR1/R Thermal Imagers

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

The new Fluke TiR1 and TiR Thermal Imagers are the perfect imagers for any building application.

- Enhanced problem detection and analysis capabilities with patent-pending IR-Fusion® Technology – only available from Fluke.
- Optimized for tough environments
  - Engineered and tested to withstand a 2 meter (6.5 foot) drop
  - Withstands dust and water—tested to an IP54 rating
- Delivers the clear, crisp images needed to find problems fast
  - Identify the smallest temperature differences common in building and roofing applications with their optimized thermal sensitivity (NETD)
- High performance, low noise sensor provides high quality image and stable temperature reading
- Even the smallest details become visible with the large, widescreen full color LCD display
- 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 annotation comments are saved with the image. (TiR1 only)
- Store more than 3,000 screen images (.bmp format) or 1,200 IR-Fusion images on included 2 GB SD memory card.

**New**



# Fluke TiR1/R specifications

	Fluke TiR1	Fluke TiR
<b>Imaging performance</b>		
Field of View (FOV )	23° horizontal x 17° vertical	
Minimum focus distance	Thermal lens: 15 cm (approx. 6 in), Visible (visual) light lens: 46 cm (approx. 18 in)	
Thermal sensitivity (NETD)	≤ 0.07 °C at 30 °C (70 mK)	≤ 0.1 °C at 30 °C (100 mK)
Minimum span (Auto/Manual)	5 °C / 2.5 °C	5 °C / 2.5 °C
Focus	Manual	
Detector size	160 x 120	
On camera operating modes	Picture-in-Picture (Blending is user selectable between MAX, MID and MIN) and full screen IR (Blending is user selectable between MAX, MED and MIN)	Full Picture-in-Picture and full screen IR
Visual (Visible light) camera	640 x 480 pixels, full color	
<b>Temperature measurement</b>		
Temperature range	-20 °C to +100 °C (-4 °F to +212 °F), 2 ranges	-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	Center point and hot and cold markers	Center point
On-screen emissivity correction	Yes	No
<b>Image presentation</b>		
Digital display	9.1 cm (3.6 in) diagonal landscape color VGA (640 x 480) LCD	
LCD backlight	Selectable bright or auto	
Palettes	Ironbow, blue-red, high contrast, amber, hot metal, grey	Ironbow, blue-red, high contrast, grey
<b>Image and data storage</b>		
Fully radiometric	Yes	
Storage medium	2 GB SD card stores up to 3000 .bmp IR images or 1200 .IS2 IR-Fusion images	
File formats supported	Exportable to JPEG, BMP, GIF, PNG, TIFF, WMF EXIF, and EMF	
Voice memo recorder (voice annotation)	Yes	No
<b>Software Controls and adjustments</b>		
Software	SmartView ; Full analysis and reporting software included	
Set-up controls	Date/time, °C/°F, language, emissivity, hot spot and cold spot on image	Date/time, °C/°F, language
Language selection	English, German, French, Spanish, Portuguese, Italian, Swedish, Finnish, Russian, Czech, Polish, Turkish, Simplified Chinese, Traditional Chinese, Korean, Japanese	
Image controls	Smooth auto scaling and manual scaling	
On-screen indicators	Battery status, real time clock and center point temperature, range and span indication and high and low alarm settings	
<b>Power</b>		
Battery type	Internal rechargeable battery (included)	
Battery operating time	3 to 4 hours continuous operation	
Battery charging	2 hours with ac charger or dc car charger (charges battery while operating)	
AC operation	AC adapter/charger 110/230 V ac, 50/60 Hz	
Power saving	Automatic shutdown and sleep modes (user specified)	
<b>Environmental and mechanical design</b>		
Operating temperature	-10 °C to +50 °C (+14 °F to +122 °F)	
Storage temperature	-20 °C to +50 °C (-4 °F to +122 °F)	
Relative humidity	Operating and storage 10 % to 90 %, non-condensing	
Water and dust resistant	IP54	
Two meter (6.5 feet) drop test	Yes	
Protective lens cover	Yes	
Weight (including battery)	1.2 kg (2.6 lbs)	
Imager size (HxWxD)	267 mm x 127 mm x 152 mm (10.5 in x 5.0 in x 6.0 in)	
<b>Other</b>		
Warranty	Two-years	
EN 61010-1 2nd edition and EN61326-1	Yes	

# TiR4FT, TiR3FT and TiR2FT IR FlexCam® Thermal Imagers

## The experts' choice for building diagnostics

The Fluke TiR4FT, TiR3FT and TiR2FT IR FlexCam® Thermal Imagers are for professionals demanding the best and most thorough solution in building diagnostics applications

- Enhanced problem detection and analysis capabilities with patent-pending IR-Fusion® Technology – only available from Fluke.
- View crisp, clear images on large LCD screen
- Industry leading thermal sensitivity ( $\leq 0.05$  °C NETD on TiR4FT) ( $\leq 0.07$  °C NETD on TiR3FT and TiR2FT) provides solid resolution and ultra high-quality images.
- Easily view around obstructions with the 180 ° articulating lens
- Exceptional image resolution delivered with 320 x 240 focal plan array and 20 mm high quality germanium lens on TiR3FT and TiR4FT models (TiR2FT available with 160 x 120 FPA)
- SmartFocus allows for easy one finger continuous focus
- Generate fast, easy customizable reports with included SmartView™ software
- Intuitive, easy to use operation with Windows CE® interface.



# Fluke TiR4FT, TiR3FT and TiR2FT specifications

	TiR4FT	TiR3FT	TiR2FT	
<b>Imaging performance</b>	<b>Thermal</b>			
	Field of view (FOV)*	23° horizontal x 17° vertical		
	Spatial resolution (IFOV)*	1.30 mrad	2.60 mrad	
	Minimum focus distance*	0.15 m		
	Thermal sensitivity (NETD)	≤ 0.05 °C at 30 °C	≤ 0.07 °C at 30 °C	
	Detector data acquisition / Image frequency	60 Hz		30 Hz
	Focus	SmartFocus; one finger continuous focus		
	IR digital zoom	2x, 4x, 8x	2x	
	Detector type	Focal Plane Array (FPA) Uncooled Microbolometer		
	Detector size	320 x 240 FPA		160 x 120 FPA
	Spectral band	8 µm to 14 µm		
	Digital image enhancement	Automatic full-time enhanced		
	<b>Visual</b>			
	On camera operating modes	Full thermal, full visual light or merged thermal-visual images. Picture-in-picture. Alarm.		
	Visible light camera	1280 x 1024 pixels, full color (1.3 Mega pixel)		
Visible light digital zoom	2x, 4x	2x		
<b>Temperature measurement</b>	Calibrated temperature range	-20 °C to 100 °C (-4 °F to 212 °F)		
	Accuracy	± 2 °C or 2 % (whichever is greater)		
	Measurement modes	TiR2FT/TiR4FT - Centerpoint, center box (area min/max, average) moveable spot, TiR3FT - Centerpoint, center box (area min/max, average)		
	Emissivity correction	0.1 to 1.0 (0.01 increments)		
<b>Image presentation</b>	Digital display	5" large high-resolution digital display		
	LCD backlight	Sunlight readable color LCD		
	Video output	RS170 EIA/NTSC or CCIR/PAL composite video		
	Palettes	Grayscale, grayscale inverted, blue red, high contrast, hot metal, iron		
<b>Optional lens</b>	<b>10.5 mm wide-angle lens</b>	High precision Germanium lens		
	Field of view (FOV)	42° horizontal x 32° vertical		
	Spatial resolution (IFOV)	2.45 mrad	4.9 mrad	
	Minimum focus distance	0.3 m		
<b>Image and data storage</b>	Storage medium	Compact flash card stores more than 1000 IR images (512 MB card standard)		
	File formats supported	14 bit measurement data included. Exportable BMP, GIF, JPEG, PNG, TIFF		
<b>Interfaces and software</b>	Interface	Compact flash card reader included		
	Software	SmartView; full analysis and reporting software included		
<b>Laser</b>	Classification	Class II		
	Laser targeting	Laser dot visible on screen when blending thermal and visible image		
<b>Controls and adjustments</b>	Set-up controls	Date/time, temperature units C/F, language, calibration range, LCD intensity (high/normal/low)		
	Image controls	Level, span, auto adjust, emissivity and background (continuous/manual)		
	On-screen indicators	Battery status, target emissivity, background temperature and realtime clock		
<b>Power</b>	Battery type	Li-Ion smart battery, rechargeable, field-replaceable		
	Battery operating time	Two hours continuous operation		
	Battery charging	2 bay intelligent charger powered via AC outlet		
	AC operation	AC adapter 110/220 VAC, 50/60 Hz (TiR2FT/TiR4FT only)		
	Power saving	Automatic shutdown and sleep modes (user specified)		
	DC operation	Vehicle 12 volt adaptor optional		
<b>Environmental and mechanical design</b>	Operating temperature	-10 °C to +50 °C (14 °F to 122 °F)		
	Storage temperature	-40 °C to +70 °C (-40 °F to 158 °F)		
	Relative humidity	Operating and storage 10 % to 95 %, non-condensing		
	Water and dust resistant	IP54		
	Weight (including batteries)	1.95 kg (4.29 pounds)		
	Camera size (HxWxD)	162 mm x 262 mm x 101 mm (6.5 in x 10.5 in x 4.0 in)		
<b>Other</b>	Warranty	Two-years		

\*standard 20 mm Germanium lens



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