



Fluke TiR4FT, TiR3FT and TiR2FT IR FlexCam® Thermal Imagers

Technical Data

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 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 TiR4FT and TiR3FT models (TiR2FT available with 160 x 120 FPA)
- Easy focus function using one finger
- Generate fast, easy customizable reports with included SmartView™ software
- Intuitive, easy to use operation with Windows CE® interface.

Typical applications

Detect (potential) problem areas such as:

- Moisture intrusion in roof systems, walls, flooring, ceilings and other building areas
- Leaks in water pipes, buried steam lines, water lines or underground heating systems and sprinkler systems
- Missing or inadequate insulation areas
- Heat or cooling loss, HVAC/R problem areas
- Connection problems in low voltage electrical systems
- Termite and pest issues
- Construction failure areas

Features	TiR4FT	TiR3FT	TiR2FT
High-resolution, low noise VOx detector for high-quality images	320 x 240		160 x 120
Temperature range for building diagnostic applications	-20 to +100 °C		
High thermal sensitivity (NETD) for viewing even the smallest temperature differences	≤0.05 °C at 30 °C (50mK)	≤0.07 °C at 30 °C (70mK)	
180° articulating flexible lens to view images in every situation	•	•	•
Choice of two interchangeable lenses to cover building applications	•	•	•
Large 5" high-contrast color LCD for a clear picture independent of lighting conditions	•	•	•
Fully radiometric for detailed temperature analysis and tracking	•	•	•
SmartFocus for best image quality and accurate temperature measurements	•	•	•
Windows CE based menu structure for ease of use	•	•	•
Personalized instrument set-up for multiple user profiles	•	•	•
CompactFlash memory cards store more than 1000 IR images plus fully radiometric temperature data	•	•	•
SmartView reporting and analysis software included	•	•	•
AutoCapture for making intermittent problems visible	•		•
On-board analysis functions	•		
User defined text annotations for simplified reporting	•		•
Built-in visible light (digital) camera	•	•	•
IR-Fusion blending thermal and visible light images to easily pinpoint suspect components*	•	•	•
IR/visible alarm function	•	•	•
Laser pointer for easy targeting	•	•	•
Flash and torch light for high quality images in dark environments	•	•	•

* Full IR-Fusion capability only with 20 mm lens.

Specifications

	TiR4FT	TiR3FT	TiR2FT	
Imaging performance	Thermal			
	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 (50mK)	≤ 0.07 °C at 30 °C (70mK)	
	Detector data acquisition / image frequency	60 Hz		30 Hz
	Focus	SmartFocus; one finger continuous focus		
	IR digital zoom	2x, 4x, 8x	2x	
	Detector type	Vanadium oxide (VOx) uncooled microbolometer focal plane array		
	Detector size	320 x 240 FPA	160 x 120 FPA	
	Spectral band	8 µm to 14 µm		
	Digital image enhancement	Automatic full-time enhanced		
	Visual (IR-Fusion models only)			
	On camera operating modes	Full thermal, full visible 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		
Temperature measurement	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, user defined field/text annotations, isotherms, automatic hot and cold point detection, visible color alarm above and below TiR3FT - Centerpoint, center box (area min/max, average)		
	Emissivity correction	0.1 to 1.0 (0.01 increments)		
Image presentation	Digital display	5" (diagonal) 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 bow, amber, amber inverted		
Optional lens	10.5 mm wide-angle lens	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		
Image and data storage	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		
Interfaces and software	Interface	Compact flash card reader included		
	Software	SmartView; full analysis and reporting software included		
Laser	Classification	Class II		
	Laser targeting	Laser dot visible on screen when blending thermal and visible image		
Controls and adjustments	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		
Power	Battery type	Li-Ion smart battery, rechargeable, field-replaceable (two included)		
	Battery operating time	Two hours continuous operation (per battery)		
	Battery charging	Two bay intelligent charger powered via ac outlet		
	AC operation	AC adapter 110/220 V ac, 50/60 Hz (TiR2FT/TiR4FT only)		
	Power saving	Automatic shutdown and sleep modes (user specified)		
Environmental and mechanical design	DC operation	Vehicle/12 volt adaptor optional		
	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)		
Other	Camera size (HxWxD)	162 mm x 262 mm x 101 mm (6.5 in x 10.5 in x 4.0 in)		
	Warranty	Two-years		

*standard 20 mm Germanium lens

Ordering information

- FLK-TiR2/FT-20** IR FlexCam BD Thermal Imager with IR-Fusion
- FLK-TiR3/FT-20** IR FlexCam BD Thermal Imager with IR-Fusion
- FLK-TiR4/FT-20** IR FlexCam BD Thermal Imager with IR-Fusion

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Included with product

Heavy duty carrying case, two rechargeable battery packs, battery charger, ac adapter, video cable, 512 MB compact flash card, compact flash card reader and USB cable, PCMCIA compact flash card reader, neck strap, printed getting started guide, SmartView reporting and analysis, software on CD, complete user manual on CD.

