IR-Fusion®

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Fluke Ti5xFT and Ti4xFT FlexCam® Thermal Imagers

Technical Data

The experts' choice for problem solving and preventive/predictive maintenance

Features	Ti55FT	Ti50FT	Ti45FT	Ti40FT
High resolution, low noise VOx detector for high quality images	320 x 240		160 x 120	
Temperature range to cover broad industrial applications	-20 °C to +600 °C (-4 °F to 1112 °F)	-20 °C to +350 °C (-4 °F to 662 °F)	-20 °C to +600 °C (-4 °F to 1112 °F)	-20 °C to +350 °C (-4 °F to 662 °F)
High temperature option	–		1200 °C (2192 °F)	–
High thermal sensitivity for viewing even the smallest temperature differences	≤0.05 °C at 30 °C (50 mK)	≤0.07 °C at 30 °C (70 mK)	≤ 0.08 °C at 30 ° C (80 mK)	≤ 0.09 °C at 30 ° C (90 mK)
180 ° articulating flexible lens to view images in every situation	•	•	•	•
Choice of 3 interchangeable lenses to cover every application*	•	•	•	•
Large 5 inch 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 person use	•	•	•	•
CompactFlash memory cards to store over 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 (visual) light camera	•	•	•	•
IR-Fusion blending thermal and visible light images	•	•	•	•
IR/Visible Alarm function	•		•	
Laser pointer for easy targeting	•	•	•	•
Flash and torch light for high quality images in dark environments	•	•	•	•

*10 mm and 54 mm lenses are optional and are only available at time of initial order.

The Fluke Ti5xFT and Ti4xFT models feature everything needed for virtually any thermography task.

All Fluke FlexCam Thermal Imagers come standard with the patent-pending Fluke IR-Fusion® Technology fusing visual (visible light) images with infrared images. SmartView™ IR analysis and reporting software is included with each purchase along with free software upgrades for the life of your product.

The Ti4xFT models feature 160 x 120 detectors and temperature sensitivity (NETD) down to 0.08 °C (80 mK) in the higher end model.

The Ti5xFT models feature 320 x 240 detectors and temperature sensitivity (NETD) down to 0.05 °C (50 mK) in the higher end model.

Choose Fluke FlexCam Thermal Imagers when you need industry leading thermal sensitivity for high resolution, ultra high-quality images.

Typical applications:

- **Troubleshooting**—Pinpointing the location of specific problems in equipment and systems.
- **Preventive/predictive maintenance**—Identify electrical and mechanical problems before they cause failure.
- **Industrial maintenance**—Check whether repairs have been performed correctly.
- **Process monitoring**—Real-time observation to ensure efficient and safe operations.
- **Quality control**—Examine prototypes and refine thermal management designs.
- **Research and development**—Quantify heat patterns to improve product designs (Ti5XFT models).
- **Electronic design**—Circuit board analysis (Ti5XFT models).

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Detailed specifications

	Fluke Ti55FT	Fluke Ti50FT	Fluke Ti45FT	Fluke Ti40FT
Imaging performance				
Field of view (FOV)*	23° horizontal x 17° vertical			
Spatial resolution (IFOV)*	1.30 mrad		2.60 mrad	
Min focus distance*	0.15 m (5.9 in)			
Thermal sensitivity (NETD)	≤ 0.05 °C at 30 °C (50 mK)	≤ 0.07 °C at 30 °C (70 mK)	≤ 0.08 °C at 30 °C (80mK)	≤ 0.09 °C at 30 °C (90mK)
Detector data acquisition/ image frequency	60 Hz/60 Hz		30 Hz/30 Hz	
Focus	SmartFocus; one finger continuous focus (manual)			
IR digital zoom	2x, 4x, 8x	2x	2x	–
Detector type	320 x 240 Focal Plane Array, Vanadium Oxide (VOx) Uncooled Microbolometer		160 x 120 Focal Plane Array, Vanadium Oxide (VOx) Uncooled Microbolometer	
Spectral band	8 µm to 14 µm			
Digital image enhancement	Automatic full time enhanced			
On camera operating modes	Full thermal, full visual light or merged thermal-visual images. Picture-in-Picture		Full thermal, full visual light or merged thermal-visual images. Picture-in-Picture	
Visible light camera	1280 x 1024 pixels, full color			
Visible light digital zoom	2x, 4x	2x	2x	–
Temperature measurement				
Calibrated temperature range	-20 °C to 600 °C (-4 °F to 1112 °F) in three ranges Range one =-20 °C to 100 °C (-4 °F to 212 °F) Range two = -20 °C to 350 °C (32 °F to 662 °F) Range three = 250 °C to 600 °C (482 °F to 1112 °F)	-20 °C to 350 °C (-4 °F to 662 °F) in two ranges Range one = -20 °C to 100 °C (-4 °F to 212 °F) Range two = -20 °C to 350 °C (32 °F to 662 °F)	-20 °C to 600 °C (-4 °F to 1112 °F) in three ranges Range one = -20 °C to 100 °C (-4 °F to 212 °F) Range two = -20 °C to 350 °C (32 °F to 662 °F) Range three = 250 °C to 600 °C (482 °F to 1112 °F)	-20 °C to 350 °C (-4 °F to 662 °F) in two ranges Range one = -20 °C to 100 °C (-4 °F to 212 °F) Range two = -20 °C to 350 °C (32 °F to 662 °F)
Optional—High temperature	–	–	Up to 1200 °C (2192 °F) Range 4 = 500 °C to 1200 °C (932 °F to 2192 °F)	–
Accuracy	± 2 °C or 2 % (whichever is greater)			
Measurement modes	Centerpoint, center box (area min/max, average), moveable spots/boxes, user defined field/text annotations, automatic hot and cold point detection, visible color alarm above and below	Centerpoint, center box (area min/max, average)	Centerpoint, center box (area min/max, average), moveable spots/boxes, user defined field/text annotations, automatic hot and cold point detection, visible color alarm above and below	Centerpoint, center box (area min/max, average)
Emissivity correction	0.1 to 1.0 (0.01 increments)			
Image presentation				
Digital display	13 cm (5 in) 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, ironbow, amber, amber inverted			
Optical lenses				
54 mm telephoto lens	High precision Germanium lens Field of view (FOV): 9° horizontal x 6° vertical			
	Spatial resolution (IFOV): 0.47 mrad		Spatial resolution (IFOV): 0.94 mrad	
	Min focus distance: 0.6 m (1.97 ft)			

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General specifications

	Fluke Ti55FT	Fluke Ti50FT	Fluke Ti45FT	Fluke Ti40FT
Optical lenses (continued)				
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		Spatial resolution (IFOV): 4.9 mrad	
	Min focus distance: 0.3 m (0.98 ft)			
Image and data storage				
Storage medium	Compact flash card stores over 1000 IR images (1 GB card standard)			
File formats supported	14 bit measurement data included. Exportable Images: bmp, gif, jpg, png, tiff; Data formats: comma separated (csv), tab separated (txt).			
Interface 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, scale, LCD intensity (high/normal/low)			
Image controls	Level, span, auto adjust (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			
Continuous ac operation	AC adapter 110/220 V ac, 50/60 Hz	—	AC adapter 110/220 V ac, 50/60 Hz	—
Power saving	Automatic shutdown and sleep modes (user specified)			
Environmental and mechanical design				
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 (4.3 lb)			
Camera size (H x W x D)	162 mm x 262 mm x 101 mm (6.5 in x 10.5 in x 4.0 in)			
Other				
Warranty	Two-years			

*Standard 20 mm Germanium lens

Ordering information

FLK-Ti40FT-20	IR FlexCam Thermal Imager with IR-Fusion
FLK-Ti45FT-20	IR FlexCam Thermal Imager with IR-Fusion
FLK-Ti50FT-20	IR FlexCam Thermal Imager with IR-Fusion
FLK-Ti55FT-20	IR FlexCam Thermal Imager with IR-Fusion

Included with product
Heavy duty carrying case, 2 rechargeable battery packs, battery charger, ac adapter (for Ti45FT and Ti55FT only), 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

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

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