FLUKE®

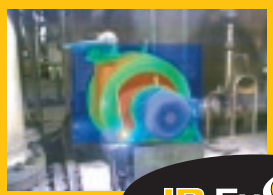
Fluke IR FlexCam® Thermal Imagers

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

IR-Fusion® Technology—infrared and visual images fused together makes infrared easy to understand

See the smallest details with the extra-large display, high resolution and maximum thermal sensitivity

Models for any application and budget



IR-Fusion®

Fluke IR FlexCam® Thermal Imagers

The thermal imagers for professionals demanding the best

The Fluke IR FlexCams produce the industry's largest and sharpest thermal images. All models feature the innovative IR-Fusion® technology to better pinpoint impending problems.

See exactly what you are viewing
Fluke IR-Fusion technology links a real world visual image with a thermal image. It merges the two images into one, with the possibility to blend between the two images or create picture-in-picture combinations. Alarm limits can be superimposed over the visible light image to exactly pinpoint the components exceeding a specified temperature limit. Both the visual images and thermal images are available for use in reports. This speeds up documentation by reducing the need to look for individual images taken with a separate digital camera. IR-Fusion helps to better identify and report suspect components and enable the repair to be done right the first time.

Large, sharp thermal images
Thanks to the largest display (five-inch) available on this type of thermal imager in combination with low-noise VOx sensors, the Fluke IR FlexCam units produce exceptionally high-quality images making even the smallest temperature differences visible. This is comparable with images normally only obtained on far more expensive instruments.

A sharp image in every situation
The innovative 180 ° articulating lens makes it possible to view and capture images in areas with poor accessibility. The display remains clearly visible while viewing over high objects, under a machine or around immoveable obstructions. The SmartFocus wheel simplifies getting a stable and sharp image. No need to take your hand off the instrument to turn a focus ring.

Make anomalies visible
Thanks to built-in functions like AutoCapture, the IR FlexCam Thermal Imagers help to troubleshoot difficult problems. The instrument is easily set up to automatically capture only those images where a temperature limit is exceeded. This way, difficult to find intermittent problems can be captured and analyzed quicker by concentrating only on the images containing the anomalies.

Analysis and reporting comes standard
The SmartView™ software (supplied with the unit) includes a complete range of infrared image viewing, analysis, annotation and reporting tools. It even allows for customized reports to accommodate specific company work processes or requirements like multiple image reporting and comparisons.

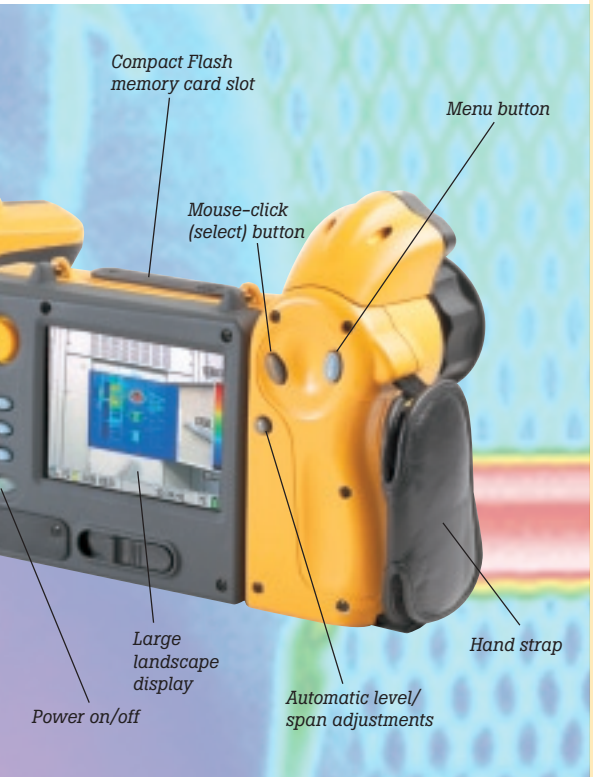
IR-Fusion® Technology

Infrared and visible light images fused together on one display

Patent-pendng IR-Fusion® Technology captures a visible light image in addition to the infrared image and takes the mystery out of IR image analysis. It helps to better identify and report suspect components and enable the repair to be done right the first time.

See things both ways

To communicate critical information, infrared images only are no longer enough. With revolutionary IR-Fusion technology, one can better identify details, manage and analyze images by combining both the infrared and visible light images. IR-Fusion technology simultaneously captures pixel-for-pixel infrared and visible light images and allows full image optimization with 5 different on-camera as well as software viewing modes. With the integrated laser pointer visible on the images, precise and accurate (faulty) component identification is very easy. All models of the Fluke IR FlexCam Thermal Imagers feature this unique technology.



5 viewing modes

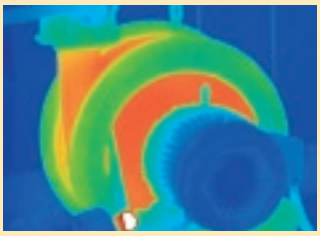
Full IR – For troubleshooting and analyzing equipment and installations with very high resolution IR imaging. For detecting the smallest temperature variations to track down the origin of problems and fully document the extent of remediation. Full IR images are automatically linked to full visible light images.

Picture-in-Picture – For creating an IR 'window' surrounded by a visible light frame to easily identify thermal anomalies, while maintaining a frame of reference with surroundings.

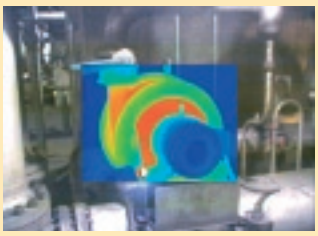
Alpha Blending – For combining visible and infrared images together in any ratio to create a single image with enhanced detail that will help in precisely locating problems.

IR/Visible Alarm – For displaying only temperatures that fall above, below, or in between a specified range as IR image, leaving the rest of the scene as a fully visible light image (Ti55FT and T145FT models only).

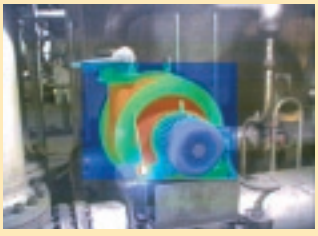
Full Visible Light – A bright, detailed pixel-for-pixel reference image of subject areas for documentation and reporting.



Full IR



Picture in Picture



Alpha Blending

IR/Visible Alarm

Full Visible Light

IR-Fusion®

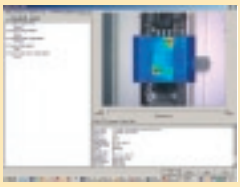
Fluke SmartView™ Software

Fluke SmartView™ software is included with each Fluke thermal imager.

- Powerful, modular suite of software tools for viewing, annotating, editing and analyzing infrared images.
- Generate fully customizable and professional-looking reports in a few easy steps.
- Full support of IR-Fusion® Technology lets you edit images in five viewing modes.
- Easy to use, yet delivers high-end analysis performance

SmartView software system requirements

- Windows®/2000 SP4 with update roll up 1/XP SP2/Vista
- A web browser for product registration. Internet Explorer 5.0 or newer or Netscape® 5.0 or newer
- 500 MB available disk space, not counting space requirements for web browser
- 16-bit color, 800 x 600 resolution video or better
- Color printer for printing the images
- CD-ROM drive (for installing SmartView software)



Keeping your world up and running

Fluke offers a wide range of electronic, electrical and power quality troubleshooting tools for the industry. With our long experience in delivering top quality, easy-to-use and safe tools, we understand your job and the challenges you face day in-day out. Fluke tools are designed to improve your ability to do a better job by offering rugged, reliable and innovative instruments.

Fluke 435 *Three-Phase Power Quality Analyzer*

Fluke 289 *True-rms Industrial Logging Multimeter with TrendCapture*

Fluke 337 *True-rms Clamp Meter*

Fluke 1587 *Insulation Multimeter*

Fluke 771 *Milliamp Process Clamp Meter*

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

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IR-Fusion®

FLUKE®

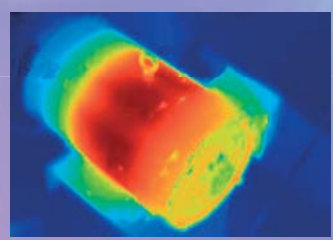
Ti40FT and Ti45FT IR FlexCam® Thermal Imagers

The versatile choice for maintenance and production engineers and technicians.

The Fluke Ti4x models feature everything needed for virtually every thermography task. With a 160 x 120 detector and a temperature sensitivity to 0.08 °C (NETD) they deliver high resolution images where even the smallest temperature differences can be seen. The units are extremely easy to use through the Windows® CE menu structure and offer an extended troubleshooting feature set to allow on the spot analysis in the field.

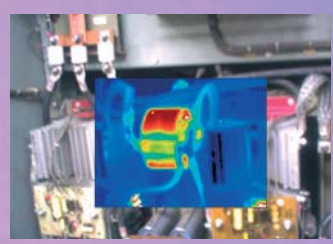
Features

	Ti45FT	Ti40FT
High resolution, low noise VOx detector for high quality images	160 x 120	
Temperature range to cover broad industrial applications	–20 to +600 °C	–20 to +350 °C
High temperature option	1200 °C	
High thermal sensitivity for viewing even the smallest temperature differences	≤0.08 °C (80 mk)	≤0.09 °C (90 mk)
180° articulating flexible lens to view images in every situation	●	●
Choice of 3 interchangeable lenses to cover every application	●	●
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 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 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	●	●



Motor

3-phase system



Predictive maintenance

Typical applications:

- Predictive maintenance – Identify electrical and mechanical problems before they cause failure
- Industrial maintenance – Check whether repairs have been performed successfully
- Quality control – Examine prototypes and refine thermal management designs
- Process monitoring – Real-time observation to ensure efficient and safe operation

Specifications

		Fluke Ti45FT	Fluke Ti40FT
Imaging performance	**Thermal**		
	Field of view (FOV)*	23° horizontal x 17° vertical	
	Spatial resolution (IFOV)*	2.60 mrad	
	Min focus distance*	0.15 m	
	Thermal sensitivity (NETD)	≤0.08 °C at 30 °C (80 mk)	≤0.09 °C at 30 °C (90 mk)
	Detector data acquisition / Image frequency	30 Hz/30 Hz or 7.5 Hz/7.5 Hz	
	Focus	SmartFocus; one finger continuous focus	
	IR digital zoom	2x	-
	Detector type	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	
	Visual		
	On camera operating modes	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	-
Temperature measurement	Calibrated temperature range	-20 °C to 600 °C in 3 ranges	-20 °C to 350 °C in 2 ranges
		Range 1 = -20 °C to 100 °C	Range 1 = -20 °C to 100 °C
		Range 2 = -20 °C to 350 °C	Range 2 = -20 °C to 350 °C
		Range 3 = 250 °C to 600 °C	-
	Optional - High temperature	Up to 1200 °C	-
		Range 4 = 500 °C to 1200 °C	-
	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, isotherms, 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	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, ironbow, amber, amber inverted	
Optional lenses (only available at time of purchase)	**54 mm Telephoto lens**	High precision Germanium lens	
	Field of view (FOV)	9° horizontal x 6° vertical	
	Spatial resolution (IFOV)	0.94 mrad	
	Min focus distance	0.6 m	
	10.5 mm wide angle lens	High precision Germanium lens	
	Field of view (FOV)	42° horizontal x 32° vertical	
	Spatial resolution (IFOV)	4.9 mrad	
	Min focus distance	0.3 m	
Image and data storage	Storage medium	Compact flash card stores over 1000 IR images (512MB card standard)	
	File formats supported	14 bit measurement data included. Exportable JPEG, BMP, PNG, GIF, 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, 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	
	Battery operating time	3 hours continuous operation (2 hours with IR-Fusion engaged)	
	Battery charging	2 bay intelligent charger powered via AC outlet	
	AC operation	AC adapter 110/220 VAC, 50/60 Hz	-
	Power saving	Automatic shutdown and sleep modes (user specified)	
Environmental and mechanical design	Operating temperature	-10 °C to +50 °C	
	Storage temperature	-40 °C to +70 °C	
	Relative humidity	Operating and storage 10% to 95%, non-condensing	
	Water and dust resistant	IP54	
	Weight (including batteries)	1.95 kg	
	Camera size (HxWxD)	162 x 262 x 101mm	
Other	Warranty	2 years	

*standard 20 mm Germanium lens

Included accessories

Heavy duty carrying case
2 rechargeable battery packs
Battery charger
AC adapter (for Ti45 only)
Video cable
512 MB compact flash card
Compact flash card reader and USB cable
PCMCIA compact flash card reader
Neck strap
SmartView reporting and analysis software on CD
User manual on CD

Ordering information*

Fluke Ti40FT-20	IR FlexCam Thermal Imager with Fusion
Fluke Ti45FT-20	IR FlexCam Thermal Imager with Fusion

*For ordering information of optional lenses check the Fluke web

Visit the Fluke web site for complete specifications

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Pub_ID: 11324-eng

IR-Fusion®

FLUKE®

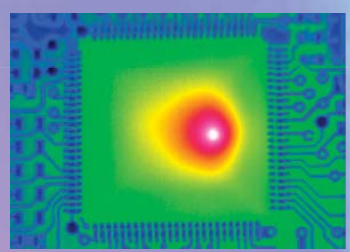
Ti50FT and Ti55FT IR FlexCam® Thermal Imagers

The professional's choice when demanding the highest sensitivity

Choose the Fluke Ti5x models when you need the best images. They feature 320 x 240 detectors with industry leading thermal sensitivity (≤ 0.05 °C NETD) for high resolution, ultra high-quality images. In addition, with a 60 Hz detector acquisition rate temperatures are displayed live on the large 5-inch color display.

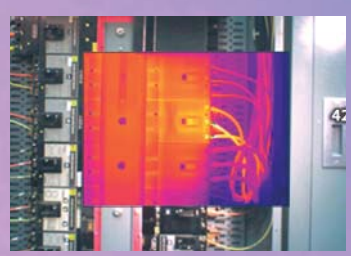
Features

	Ti55FT	Ti50FT
High resolution, low noise VOx detector for high quality images	320 x 240	
Temperature range to cover broad industrial applications	-20 to +600 °C	-20 to +350 °C
High thermal sensitivity for viewing even the smallest temperature differences	≤0.05 °C (50 mk)	≤0.07 °C (70 mk)
180° articulating flexible lens to view images in every situation	●	●
Choice of 3 interchangeable lenses to cover every application	●	●
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 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 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	●	●



Printed circuit board

Power/utilities



Electrical system

Typical applications

- Predictive maintenance – Identify electrical and mechanical problems before they cause failure
- Power/utilities – Real-time analysis of substations, transmission lines and equipment
- Process monitoring – Real-time observation to ensure efficient and safe operation
- Research and development – Quantify heat patterns to improve product designs
- Electronic design – Close up circuit board analysis

Specifications

		Fluke Ti55FT	Fluke Ti50FT
Imaging performance	**Thermal**		
	Field of view (FOV)*	23° horizontal x 17° vertical	
	Spatial resolution (IFOV)*	1.30 mrad	
	Min focus distance*	0.15 m	
	Thermal sensitivity (NETD)	≤0.05 °C at 30 °C (50 mk)	≤0.07 °C at 30 °C (70 mk)
	Detector data acquisition / Image frequency	60 Hz/60 Hz or 7.5 Hz/7.5 Hz	
	Focus	SmartFocus; one finger continuous focus	
	IR digital zoom	2x, 4x, 8x	2x
	Detector type	320 x 240 Focal Plane Array, Vanadium Oxide (VOx) Uncooled Microbolometer with 25 micron pitch	
	Spectral band	8 µm to 14 µm	
	Digital image enhancement	Automatic full-time enhanced	
	Visual		
	On camera operating modes	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
Temperature measurement	Calibrated temperature range	-20 °C to 600 °C in 3 ranges	-20 °C to 350 °C in 2 ranges
		Range 1 = -20 °C to 100 °C	Range 1 = -20 °C to 100 °C
		Range 2 = -20 °C to 350 °C	Range 2 = -20 °C to 350 °C
		Range 3 = 250 °C to 600 °C	-
	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, isotherms, 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	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, ironbow, amber, amber inverted	
Optional lenses (Only available at time of purchase)	**54 mm Telephoto lens**	High precision Germanium lens	
	Field of view (FOV)	9° horizontal x 6° vertical	
	Spatial resolution (IFOV)	0.47 mrad	
	Min focus distance	0.6 m	
	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	
	Min focus distance	0.3 m	
Image and data storage	Storage medium	Compact flash card stores over 1000 IR images (512 MB card standard)	
	File formats supported	14 bit measurement data included. Exportable JPEG, BMP, PNG, GIF, 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, 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	
	Battery operating time	3 hours continuous operation (2 hours with IR-Fusion engaged)	
	Battery charging	2 bay intelligent charger powered via AC outlet	
	AC operation	AC adapter 110/220 VAC, 50/60 Hz	-
	Power saving	Automatic shutdown and sleep modes (user specified)	
Environmental and mechanical design	Operating temperature	-10 °C to +50 °C	
	Storage temperature	-40 °C to +70 °C	
	Relative humidity	Operating and storage 10% to 95%, non-condensing	
	Water and dust resistant	IP54	
	Weight (including batteries)	1.95 kg	
	Camera size (HxWxD)	162 x 262 x 101 mm	
Other	Warranty	2 years	

*standard 20 mm Germanium lens

Included accessories

Heavy duty carrying case
2 rechargeable battery packs
Battery charger
AC adapter (for Ti55 model only)
Video cable
512 MB compact flash card
Compact flash card reader and USB cable
PCMCIA compact flash card reader
Neck strap
SmartView reporting and analysis software on CD
User manual on CD

Ordering information*

Fluke Ti50FT-20	IR FlexCam Thermal Imager with IR-Fusion
Fluke Ti55FT-20	IR FlexCam Thermal Imager with IR-Fusion

*For ordering information of optional lenses check the Fluke web

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