

TECHNICAL DATA

# Ti480 PRO and Ti450 PRO Infrared Cameras

## The Fluke Professional Series



Fluke Connect® compatible

The Fluke PRO series cameras introduce a leading-edge visual infrared experience. Smartest, most intuitive user interface. Increased thermal sensitivity to capture the smallest differences. Latest technology for on-screen clarity. Lens compatibility to capture targets tiny-to-large.

- Increased sensitivity to visualize temperature differences, NETD for the Ti450 PRO is  $\leq 0.025\text{ }^{\circ}\text{C}$  at  $30\text{ }^{\circ}\text{C}$  target temp (25 mK)
- Easier to visualize and diagnose issues with sharper on-screen images, multiple rectangle markers and 9 color palettes
- More intuitive visual interface, improved, user-tested, touch screen interface
- More flexibility to visualize targets—tiny to large with interchangeable smart lenses—no calibration required, 2x and 4x telephoto, wide angle and macro lenses are compatible with Ti480 PRO and Ti450 PRO
- Capture a clear, accurate image focused throughout the field of view with MultiSharp™ Focus.
- Get an instant in-focus image of your designated target. LaserSharp® Auto Focus uses a built-in laser distance meter that calculates and displays the distance from your designated target
- Get 4x the pixel data with SuperResolution, which captures multiple images and combines them to create a 1280 x 960 image (Ti480 PRO) or a 640 x 480 image (Ti450 PRO)
- Reduce the need to take notes in the field with two helpful features; IR-PhotoNotes™ and voice annotations
- Highlight areas that are outside your pre-set 'normal' temperature ranges quickly with color alarms
- Save time—wirelessly sync images directly from your camera to the Fluke Connect® system, and attach to an asset record or work order. Make faster decisions by accessing inspection measurements from anywhere. Team members can instantly see the same data, at the inspection site and the office.

### SUPERIOR IMAGE QUALITY

#### SPATIAL RESOLUTION

**Ti480 PRO** 0.93 mRad

**Ti450 PRO** 1.31 mRad

#### RESOLUTION

**Ti480 PRO** 640 x 480

SuperResolution mode: 1280 x 960

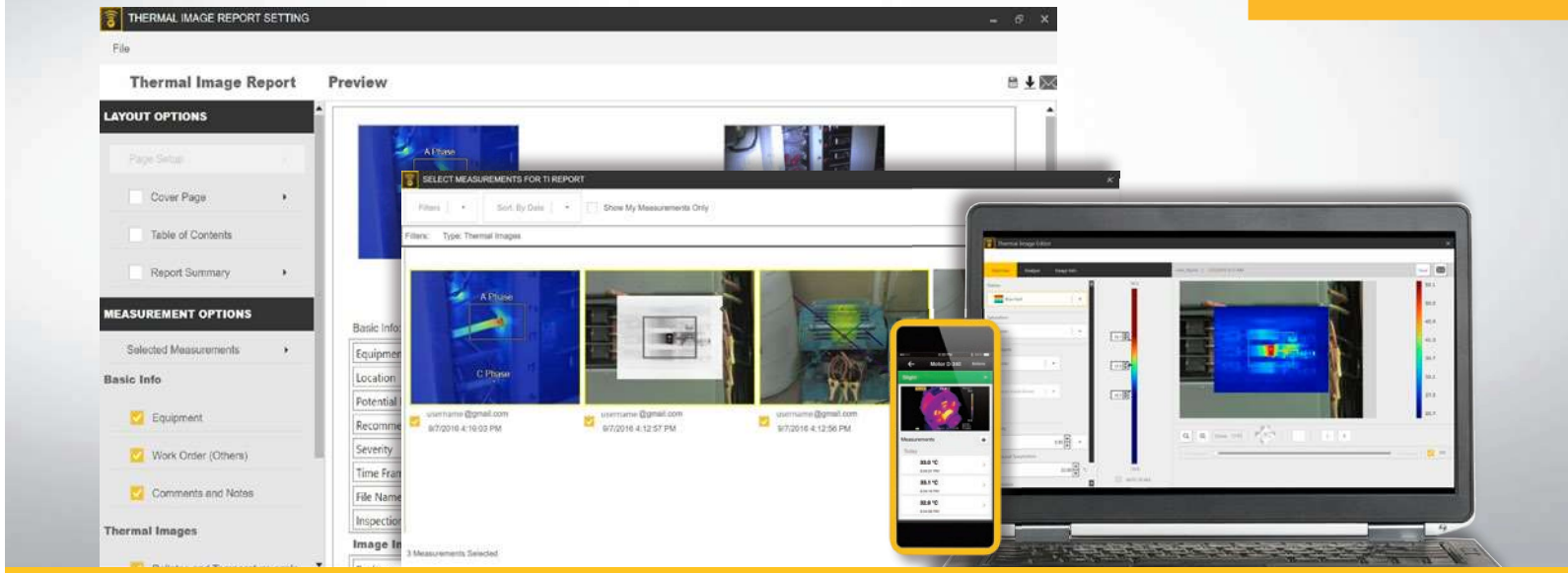
**Ti450 PRO** 320 x 240

SuperResolution mode: 640 x 480

#### FIELD OF VIEW

**Ti480 PRO** 34 °H x 24 °V

**Ti450 PRO** 24 °H x 17 °V



**Powerful, easy-to-use Fluke Connect®**

A comprehensive and connected platform that represents the future of integrated equipment maintenance, monitoring, analysis and reporting. It's easier than ever to optimize thermal images, perform analytics, generate quick, customizable, robust reports, and export images to the format of your choice in the cloud. And you will be able to integrate with Fluke Connect—the largest integrated system of maintenance software and tools in the world.

- Modern visual design
- Intuitive navigation—easier to learn, easier and faster to work in
- Simplified work flows
- Simplified reporting workflow and better report templates
- Fluke Connect Cloud storage

**100 % Focused—Every object. Near and far. MultiSharp™ Focus.**



Manual focus



MultiSharp Focus, available on the Ti450 PRO

## Detailed specifications

	Ti480 PRO	Ti450 PRO
<b>Key features</b>		
Detector resolution	640 x 480 (307,200) or 1280 x 960 with SuperResolution	320 x 240 (76,800 pixels) or 640 x 480 with SuperResolution
SuperResolution	Yes, in software. Captures and combines 4x the data to create a 1280 x 960 image	Yes, in software. Captures and combines 4x the data to create a 640 x 480 image
<b>IFOV with standard lens (spatial resolution)</b>		
	0.93 mRad, D:S 1065:1	1.31 mRad, D:S 753:1
Field of view	34 °H x 24 °V	24 °H x 17 °V
Minimum focus distance	15 cm (approx. 6 in)	
MultiSharp™ Focus	Yes, focused near and far, throughout the field of view	
LaserSharp® Auto Focus	Yes, for consistently in-focus images. Every. Single. Time.	
Laser distance meter	Yes, calculates distance to the target for precisely focused images and displays distance on screen	
Advanced manual focus	Yes	
<b>Wireless connectivity</b>		
	Yes, to PC, iPhone+ and iPad® (iOS 4s and later), Android™ 4.3 and up, and WiFi to LAN (where available)	
Fluke Connect® app compatible	Yes*, connect your camera to your smartphone, and images taken automatically upload to the Fluke Connect app for saving and sharing	
Fluke Connect® Assets optional software	Yes*, assign images to assets and create work orders. Easily compare measurement types in one location.	
Fluke Connect® Instant Upload	Yes*, connect your camera to your building's WiFi network, and images taken automatically upload to the Fluke Connect system for viewing on your smartphone or PC	
Fluke Connect® tool compatible	Yes*, connects wirelessly to select Fluke Connect enabled tools and displays measurements on camera screen.	
<b>IR-Fusion® technology</b>		
	Yes, adds the context of the visible details to your infrared image	
AutoBlend™ mode	Min, Mid, Max IR plus full visible on camera; continuously variable in software	
Picture-In-Picture (PIP)	Yes	
Ruggedized touchscreen display	3.5 inch (landscape) 640 x 480 LCD	
Rugged, ergonomic design for one-handed use	Yes	
Thermal sensitivity (NETD)**	≤ 0.05 °C at 30 °C target temp (50 mK)	≤ 0.025 °C at 30 °C target temp (25 mK)
<b>Level and span</b>		
	Smooth auto and manual scaling	
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)	
Minimum span (in auto mode)	3.0 °C (5.4 °F)	
Built-in digital camera (visible light)	5MP	
Frame rate	60 Hz or 9 Hz versions	
Laser pointer	Yes	
LED light (torch)	Yes, improved output torch	
Digital zoom	2x and 4x	
<b>Data storage and image capture</b>		
Extensive memory options	Removable 4 GB micro SD memory card, 4 GB internal flash memory, save to USB flash drive capability, upload to for permanent storage	
Image capture, review, save mechanism	One-handed image capture, review, and save capability	
Image file formats	Non-radiometric (.bmp) or (.jpeg) or fully-radiometric (.is2); no analysis software required for non-radiometric (.bmp, .jpg and .avi) files	
Memory review	Thumbnail and full screen review	
Software	SmartView® software—full analysis and reporting software	
Export file formats with Fluke Connect® desktop software	Bitmap (.bmp), GIF, JPEG, PNG, TIFF	
Voice annotation	60 seconds maximum recording time per image; reviewable playback on camera, optional bluetooth headset available but not required	
IR-PhotoNotes™	Yes (5 images)	
Text annotation	Yes	
Video recording	Standard and radiometric	
File formats video	Non-radiometric (MPEG – encoded .AVI) and fully-radiometric (.IS3)	
Remote display viewing	Yes, see the live stream of the camera display on your PC, smartphone, or TV monitor. Via USB, WiFi hotspot, or WiFi network to SmartView® software on a PC; via WiFi hotspot to the Fluke Connect® app on a smartphone; or via HDMI to a TV monitor	
Remote control operation	Yes, through SmartView® software or Fluke Connect® mobile app	
Auto capture (temperature and interval)	Yes	
<b>Battery</b>		
Batteries (field-replaceable, rechargeable)	Two lithium ion smart battery packs with five-segment LED display to show charge level	
Battery life	2–3 hours per battery (*Actual life varies depending on settings and usage)	3–4 hours per battery (*Actual life varies depending on settings and usage)
Battery charge time	2.5 hours to full charge	
Battery charging system	Two-bay battery charger or in-imager charging. Optional 12 V automotive charging adapter	
AC operation	AC operation with included power supply (100 V AC to 240 V AC, 50/60 Hz)	
Power saving	User selectable sleep and power off modes	

\*Fluke Connect analysis and reporting software is available in all countries but Fluke Connect is not. Please check availability with your authorized Fluke distributor.

\*\* Best possible

## Detailed specifications

	Ti480 PRO	Ti450 PRO
<b>Temperature measurement</b>		
Temperature measurement range (not calibrated below -10 °C)	≤ -10 °C to +1000 °C (-14 °F to 1832 °F)	-10 °C to 1500 °C (14 °F to 2732 °F)
Accuracy	± 2 °C or 2% (at 25 °C nominal, whichever is greater)	
On-screen emissivity correction	Yes (both value and table)	
On-screen reflected background temperature compensation	Yes	
On-screen transmission correction	Yes	
Live line marker	Yes	
<b>Color palettes</b>		
Standard palettes	9: Rainbow, Ironbow, Blue-Red, High Contrast, Amber, Amber Inverted, Hot Metal, Grayscale, Grayscale Inverted	
Ultra Contrast™ palettes	9: Rainbow, Ironbow, Blue-Red, High Contrast, Amber, Amber Inverted, Hot Metal, Grayscale, Grayscale Inverted	
<b>Lens compatibility</b>		
Macro-25 micron lens: 25 MAC2	Yes	
2 x telephoto lens: TELE 2	Yes	
4 x telephoto lens: TELE4	Yes	
Wide angle lens: WIDE 2	Yes	
<b>General specifications</b>		
Color alarms (temperature alarms)	High temperature, low temperature, and isotherms (within range)	
Infrared spectral band	7.5 μm to 14 μm (long wave)	
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	
Center-point temperature measurement	Yes	
Spot temperature	Hot and cold spot markers	
User-definable spot markers	3 user-definable spot markers	
Center box	Up to 3 expandable-contractible measurement box with MIN-MAX-AVG temp display	
Safety	IEC 61010-1: Overvoltage category II, Pollution Degree 2	
Electromagnetic compatibility	IEC 61326-1: Basic EM environment. CISPR 11: Group 1, Class A	
Australian RCM	IEC 61326-1	
US FCC	CFR 47, Part 15 Subpart C Sections 15.207, 15.209, 15.249	
Vibration	0.03 g2/Hz (3.8 g), 2.5 g IEC 68-2-6	
Shock	25 g, IEC 68-2-29	
Drop	Engineered to withstand 2 meter (6.5 feet) drop with standard lens	
Size (H x W x L)	27.7 cm x 12.2 cm x 16.7 cm (10.9 in x 4.8 in x 6.5 in)	
Weight (battery included)	1.04 kg (2.3 lb)	
Enclosure rating	IEC 60529: IP54 (protected against dust, limited ingress; protection against water spray from all directions)	
Warranty	Two-years (standard), extended warranties are available	
Recommended calibration cycle	Two-years (assumes normal operation and normal aging)	
Supported languages	Czech, Dutch, English, Finnish, French, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Traditional Chinese, and Turkish	
RoHS compliant	Yes	





**Ordering information**

- FLK-Ti480 PRO 60 Hz Infrared Camera
- FLK-Ti480 PRO 9 Hz Infrared Camera
- FLK-Ti450 PRO 60 Hz Infrared Camera
- FLK-Ti450 PRO 9 Hz Infrared Camera

**Included**

Infrared camera with standard infrared lens; AC power supply and battery pack charger (including universal AC adapters); two rugged lithium ion smart battery packs; USB cable; HDMI video cable; 4 GB micro SD card; rugged, hard carrying case; soft transport bag and adjustable hand strap. **Available by free download:** Fluke Connect® desktop software\* and user manual.

**Optional accessories**

- FLK-LENS/TELE2 Infrared Telephoto Lens (2X magnification)
- FLK-LENS/4XTELE2 Infrared Telephoto Lens (4X magnification)
- FLK-LENS/WIDE2 Infrared Wide Angle Lens
- FLK-LENS/MACRO2 Infrared Macro Lens (close-up 0.5 times)
- TI-CAR-CHARGER Car Charger
- FLK-TI-VISOR3 Sun Visor
- BOOK-ITP Introduction to Thermography Principles Book
- TI-TRIPOD3 Tripod Mounting Accessory
- FLK-TI-BLUETOOTH Bluetooth headset
- FLK-TI-SBP3 Additional Smart Battery
- FLK-TI-SBC3B Additional Smart Battery Charger

**\*Only available in certain countries.**

**The Expert Series**

Go expert with the Fluke TiX580, TiX560, TiX520 or TiX500, and get up to 640 x 480 resolution along with maximum flexibility of a screen that rotates a full 240 degrees and a 5.7 inch touchscreen LCD. Includes in-field analysis and post-capture image processing on camera, along with other expert-level features and more lens options.



**Preventive maintenance simplified. Rework eliminated.**

Save time and improve the reliability of your maintenance data by wirelessly syncing measurements using the Fluke Connect® system.

- Eliminate data-entry errors by saving measurements directly from the tool and associating them with the work order, report or asset record.
- Maximize uptime and make confident maintenance decisions with data you can trust and trace.
- Move away from clipboards, notebooks and multiple spreadsheets with a wireless one-step measurement transfer.
- Access baseline, historical and current measurements by asset.
- Share your measurement data using ShareLive™ video calls and emails.
- The Ti450 PRO and Ti480 PRO infrared cameras are part of a growing system of connected test tools and equipment maintenance software. Visit the website to learn more about the Fluke Connect® system.

Find out more at



All trademarks are the property of their respective owners. WiFi or cellular service required to share data. Smartphone, wireless service and data plan not included with purchase. First 5 GB of storage is free. Phone support details can be viewed at

**Smart phone wireless service and data plan not included with purchase. Fluke Connect is not available in all countries.**