

TECHNICAL DATA

# Ti480, Ti450, Ti400 and Ti300 Infrared Cameras

## The Fluke Professional Series



Fluke Connect® compatible

### Focus redefined.

- Capture a clear, accurate image focused throughout the field of view with **MultiSharp™ Focus**. Simply point and shoot—the camera automatically processes a stack of images focused near and far (Ti480 and Ti450)
- Get an instant in-focus image of your designated target. **LaserSharp® Auto Focus**, exclusive to Fluke, uses a built-in laser distance meter that calculates and displays the distance from your designated target with pinpoint\* accuracy
- Get 4x the pixel data with **SuperResolution**, which captures multiple images and combines them to create a 1280 x 960 image (Ti480) or a 640 x 480 image (Ti450)
- 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.
- Reduce the need to take notes in the field with two helpful features:
  - IR-PhotoNotes™ annotation system—captures digital images of the surrounding area to reference conditions or actual location
  - Any additional details can also be saved to the file with voice annotation
- **Highlight areas that are outside your pre-set 'normal' temperature ranges quickly with color alarms**
- **See the details you need** with interchangeable smart lenses—2x and 4x telephoto and wide angle—no calibration required
- **Included Fluke Connect® SmartView® desktop software:** Optimize thermal images, perform analytics, generate quick, customizable, robust reports and export images to the format of your choice in the cloud

### SUPERIOR IMAGE QUALITY

#### SPATIAL RESOLUTION

**Ti480** 0.93 mRad

**Ti450 and Ti400** 1.31 mRad

**Ti300** 1.75 mRad

#### RESOLUTION

**Ti480** 640 x 480

*SuperResolution mode: 1280 x 960*

**Ti450** 320 x 240

*SuperResolution mode: 640 x 480*

**Ti400** 320 x 240

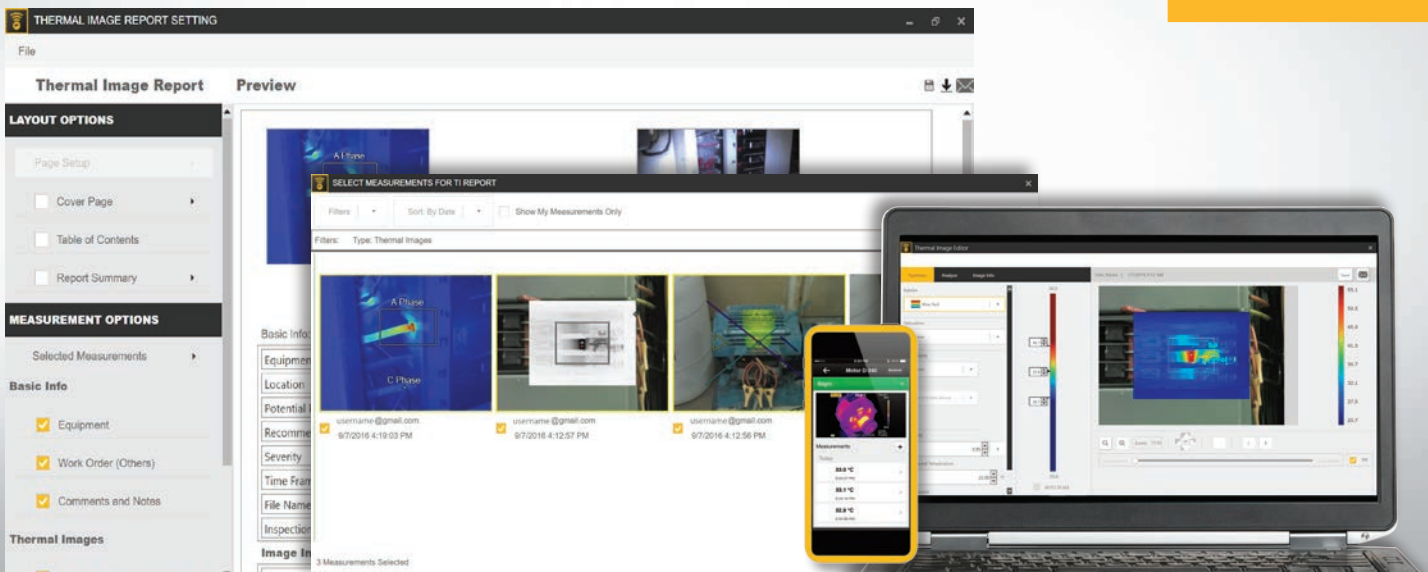
**Ti300** 240 x 180

#### FIELD OF VIEW

**Ti480** 34 °H x 24 °V

**Ti450, Ti400, Ti300** 24 °H x 17 °V

\*Up to 30 meters (100 feet)



**Powerful, new, easy-to-use Fluke Connect® SmartView® desktop software.**

Now available, a comprehensive and connected software 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

Fluke Connect SmartView® desktop software is included with your camera purchase.

Download at [fluke.com/FlukeConnectTI](http://fluke.com/FlukeConnectTI)

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



Manual focus



MultiSharp Focus, available on the Ti450.

## Detailed specifications

|   | Ti480   | Ti450   | Ti400                                  | Ti300                     |
|---|---|---|--|---------------------------|
| <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                                   | 320 x 240 (76,800 pixels)              | 240 x 180 (43,200 pixels) |
| SuperResolution                                     | Yes, on camera and in software. Captures and combines 4x the data to create a 1280 x 960 image  | Yes, on camera and 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  |  | 1.75 mRad, D:S 565:1      |
| Field of view                                       | 34 °H x 24 °V   | 24 °H x 17 °V   |  |                           |
| Minimum focus distance                              | 15 cm (approx. 6 in)  |   |  |                           |
| IR-Fusion* technology                               | Full screen   |   |  |                           |
| 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)  | ≤ 0.03 °C at 30 °C target temp (30 mK)  | ≤ 0.05 °C at 30 °C target temp (50 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   |   |  |                           |
| 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 Fluke Cloud™ for permanent storage                 |   |  |                           |
| Image capture, review, save mechanism               | One-handed image capture, review, and save capability   |   |  |                           |

\*Fluke Connect SmartView® 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   | Ti450   | Ti400 | Ti300                                 |
|---|---|---|-------|---------------------------------------|
| 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  | Fluke Connect desktop software—full analysis and reporting software with access to the Fluke Connect system   |   |       |                                       |
| 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 Fluke Connect 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 Fluke Connect SmartView® desktop 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<br>(*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   |   |       |                                       |
| <b>Temperature measurement</b>                              |   |   |       |                                       |
| Temperature measurement range (not calibrated below -10 °C) | ≤ -20 °C to +800 °C<br>(-4 °F to 1472 °F)   | -20 °C to +1200 °C (-4 °F to +2192 °F)                                      |       | -20 °C to +650 °C (-4 °F to +1202 °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   | 8: Ironbow, Blue-Red, High Contrast, Amber, Amber Inverted, Hot Metal, Grayscale, Grayscale Inverted  |   |       |                                       |
| Ultra Contrast™ palettes                                    | 8: Ironbow Ultra, Blue-Red Ultra, High Contrast Ultra, Amber Ultra, Amber Inverted Ultra, Hot Metal Ultra, Grayscale Ultra, Grayscale Inverted Ultra  |   |       |                                       |
| <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  | 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 B   |   |       |                                       |
| 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   |   |       |                                       |

## Ordering information

FLK-Ti480 60 Hz Infrared Camera  
 FLK-Ti480 9 Hz Infrared Camera  
 FLK-Ti450 60 Hz Infrared Camera  
 FLK-Ti450 9 Hz Infrared Camera  
 FLK-Ti400 60 Hz Infrared Camera  
 FLK-Ti400 9 Hz Infrared Camera  
 FLK-Ti300 60 Hz Infrared Camera  
 FLK-Ti300 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® SmartView® desktop software and user manual.

### Optional accessories

**FLK-LENS/TELE2** Infrared Telephoto Lens (2X magnification), Ti480, Ti450, Ti400, Ti300  
**FLK-LENS/4XTELE2** Infrared Telephoto Lens (4X magnification), Ti450, Ti400, Ti300  
**FLK-LENS/WIDE2** Infrared Wide Angle Lens, Ti480, Ti450, Ti400, Ti300  
**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

### Kits

**FLK-TI400 60HZ/FCA\*** Infrared Camera, 3000 FC DMM, a3001FC iFlex Module  
**FLK-TI300 60HZ/FCA\*** Infrared Camera, 3000 FC DMM, a3001FC iFlex Module  
**FLK-TI400 60HZ/FCC\*** Infrared Camera, 3-a3001FC iFlex Modules, 805 Vibration Tester  
**FLK-TI400 9HZ/FCA** Infrared Camera, 3000 FC DMM, a3001FC iFlex Module  
**FLK-TI300 9HZ/FCA** Infrared Camera, 3000 FC DMM, a3001FC iFlex Module  
**FLK-TI400 9HZ/FCC** Infrared Camera, 3-a3001FC iFlex Modules, 805 Vibration Tester

Visit [www.fluke.com](http://www.fluke.com) to get complete details on these products or ask your local Fluke sales representative.

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

RF connection time (binding time) may take up to 1 minute.

## 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 Ti4XX Series and Ti300 is 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 [flukeconnect.com](http://flukeconnect.com)



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

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

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