

TECHNICAL DATA

# 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 (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 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. Having access to maintenance records simultaneously at the inspection site and from the office or an off-site location enables faster decision making and real time collaboration between team members
- **Get the context** of the visual and infrared details all in one precisely blended or picture-in-picture image with IR-Fusion® technology
- **See the details you need** with interchangeable smart lenses—2x and 4x telephoto and wide angle—no calibration required

### SUPERIOR IMAGE QUALITY

#### SPATIAL RESOLUTION

**Ti450 and Ti400**

1.31 mRad

**Ti300**

1.75 mRad

#### RESOLUTION

**Ti450**

320 x 240

SuperResolution mode: 640 x 480

**Ti400**

320 x 240

**Ti300**

240 x 180

#### FIELD OF VIEW

**Ti450, Ti400, Ti300**

24 °H x 17 °V

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



Manual Focus



MultiSharp™ Focus, available on the Ti450.

## Detailed specifications

|   | Ti450  | Ti400                     | Ti300                     |
|---|--|---------------------------|---------------------------|
| <b>Key features</b>                                 |  |                           |                           |
| Detector resolution                                 | 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 640 x 480 image  | —                         | —                         |
| <b>IFOV with standard lens (spatial resolution)</b> | 1.31 mRad, D:S 753:1   |                           | 1.75 mRad, D:S 565:1      |
| Field of view                                       | 24 °H x 17 °V  |                           |                           |
| Minimum focus distance                              | 15 cm (approx. 6 in)   |                           |                           |
| <b>IFOV with optional 2x telephoto smart lens</b>   | 0.65 mRad, D:S 1529:1  |                           | 0.87 mRad, D:S 1147:1     |
| Field of view                                       | 12 °H x 9 °V   |                           |                           |
| Minimum focus distance                              | 45 cm (approx. 18 in)  |                           |                           |
| IR-Fusion® technology                               | Picture-in-picture and full screen   |                           |                           |
| <b>IFOV with optional 4x telephoto smart lens</b>   | 0.33 mRad, D:S 2941:1  |                           | 0.44 mRad, D:S 2208:1     |
| Field of view                                       | 6.0 °H x 4.5 °V  |                           |                           |
| Minimum focus distance                              | 1.5 m (approx. 5 ft)   |                           |                           |
| IR-Fusion® technology                               | Picture-in-picture and full screen   |                           |                           |
| <b>IFOV with optional wide-angle smart lens</b>     | 2.62 mRad, D:S 377:1   |                           | 3.49 mRad, D:S 283:1      |
| Field of view                                       | 46 °H x 34 °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—whether mechanical, electrical or infrared images—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. Five simultaneous connections supported               |                           |                           |
| <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)   |                           |                           |
| Filter mode (NETD improvement)                      | ≤ 0.03 °C at 30 °C target temp (30 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® system is not available in all countries. Please check availability with your authorized Fluke distributor.

## Detailed specifications

|   | 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  | SmartView® software—full analysis and reporting software and Fluke Connect® system   |       |                                       |
| Export file formats with SmartView® 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)   |       |                                       |
| Streaming video (remote display)                            | 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  | 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 +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  |       |                                       |
| <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-Ti450 60Hz Infrared Camera  
 FLK-Ti450 9Hz Infrared Camera  
 FLK-Ti400 60Hz Infrared Camera  
 FLK-Ti400 9Hz Infrared Camera  
 FLK-Ti300 60Hz Infrared Camera  
 FLK-Ti300 9Hz 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:** SmartView® 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  
 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 TiX560, TiX520 or TiX500, and get maximum flexibility with an articulating lens 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.



Set up and sustain preventive maintenance practices with ease, using the Fluke Connect® system of wireless test tools and asset management software.

- Improve your ability to prevent or predict failures
- Make confident decisions with data you can trust and trace
- Access your infrared images from anywhere, anytime with secure cloud storage
- Connect and collaborate with your team – even when you are in different places
- Provide more complete information to your maintenance teams by generating work orders that include measurements and infrared images
- Edit and analyze images; create and send reports from your smartphone directly from the field

Find out more and take a free trial at: [flukeconnect.com](http://flukeconnect.com)

### Download the app at:



WiFi or cellular service is 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 [fluke.com/phones](http://fluke.com/phones).

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

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