

TECHNICAL DATA

# Ti401 PRO, Ti480 PRO, TiX501 and TiX580 Infrared Cameras



## Fluke Connect™ compatible

We recognize that it's not one approach for all—each industry, business and success measure is unique. Optimally engineered, Fluke cameras are aligned to drive efficiency through the latest in thermography technology advancements. They offer everything needed for industrial professionals to safely, quickly and easily find, assess and solve mission-critical problems before they result in downtime, become costly or even disastrous.

- In-focus images in a matter of seconds. LaserSharp™ Auto Focus uses a built-in laser distance meter that calculates and displays the distance from your designated target and immediately adjusts the focus.
- Shoot images near...and far. Interchangeable Smart Lenses require no calibration and give you the versatility and image quality needed to conduct inspections in almost any environment.
- Simply the best optics to transmit energy and produce high quality infrared images. Fluke uses only 100 % diamond-turned germanium lenses with specialty coatings.
- See more details when you adjust the level of infrared and visible light with patented IR-Fusion™ technology.
- Edit and analyze images on camera—edit emissivity, enable color alarms and markers, and adjust IR-Fusion™ visual and infrared image blending.
- Manage data, capture multiple measurements (mechanical, electrical and thermal) and organize them by piece of equipment with Fluke Connect™ software.
- Inspect multiple complex targets or targets from varying distances. Capture a clear, accurate image focused throughout the field of view with MultiSharp™ Focus. The camera automatically processes a stack of images focused near and far with the Ti480 PRO and TiX580.

## SUPERIOR IMAGE QUALITY

### INFRARED RESOLUTION

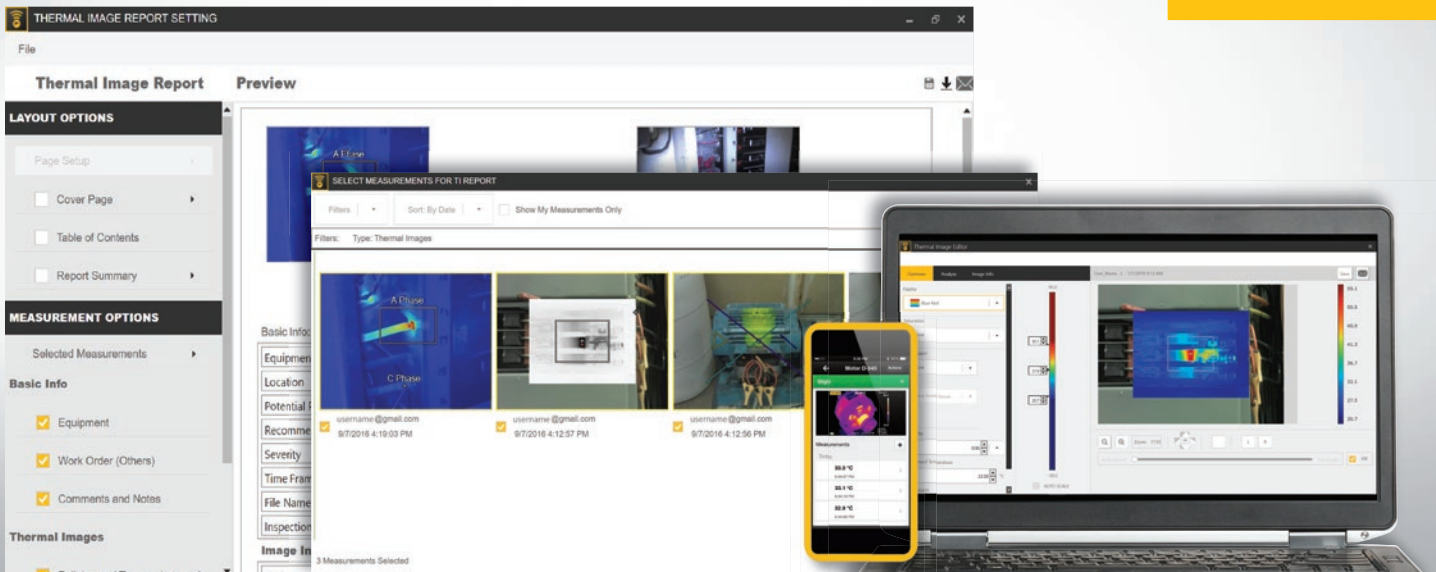
640 x 480 (307,200 pixels)

### SPATIAL RESOLUTION

0.93 mRad

### FIELD OF VIEW

34 °H x 24 °V



## Powerful, easy-to-use Fluke Connect™

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

Download at [flukeconnect.com](https://www.flukeconnect.com)

**Fluke Connect and Fluke Connect cloud storage not available in all countries.**

## Specifications

Key Features	Ti401 PRO	Ti480 PRO	TiX501	TiX580
Infrared resolution	640 x 480 (307,200 pixels)			
SuperResolution	No	Yes, in software. Captures and combines 4x the data to create a 1280 x 960 image	No	Yes, in software. Captures and combines 4x the data to create a 1280 x 960 image
IFOV with standard lens (spatial resolution)	0.93 mRad			
Field of view	34 °H x 24 °V			
Minimum focus distance	15 cm (approx. 6 in)			
MultiSharp Focus	No	Yes, automatically captures in focus objects at different distances using multiple images	No	Yes, automatically captures in focus objects at different distances using multiple images
LaserSharp Auto Focus	Yes, for consistently in-focus images			
Laser distance meter	Yes, calculates distance to the target for precisely focused images and displays distance on screen			
Manual focus	Yes			
Wireless connectivity	Yes, to PC, iPhone® and iPad® (iOS 4s and later), Android™ 4.3 and up			
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			
IR-Fusion technology	Five modes of image blending (AutoBlend™ mode, Picture-in-Picture (PIP), IR/Visible alarm, Full IR, Full visible light) add the context of the visible details to your infrared image			
Touchscreen display	3.5 inch (landscape), 640 x 480 LCD		5.7 inch (14.4 cm) landscape 640 x 480 LCD	
Ergonomic design	Pistol-grip design for one-handed use		240 ° rotatable (articulating) lens	
Thermal sensitivity (NETD)	≤ 0.075 °C at 30 °C target temp (75 mK)	≤ 0.050 °C at 30 °C target temp (50 mK)	≤ 0.075 °C at 30 °C target temp (75 mK)	≤ 0.050 °C at 30 °C target temp (50 mK)
Level and span	Smooth auto and manual scaling			
Adjustable level/span	Yes			
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	No	2x and 4x	2x	2x, 4x, 8x
Data storage and image capture				
Extensive memory options	Removable 16 GB micro SD memory card, 4 GB internal flash memory, save to USB flash drive capability, upload for permanent storage			
Image capture, review, save mechanism	One-handed image capture, review, and save capability		Yes, edit and analyze captured images on camera	
Image file formats	bmp, jpeg, is2	bmp, jpeg, is2, is3, AVI	bmp, jpeg, is2, AVI	bmp, jpeg, is2, is3, AVI
Memory review	Thumbnail and full screen review			
Software	Full analysis and reporting software with access to the Fluke Connect system			
Analyze and store radiometric data on a PC	Yes			
Export file formats with Fluke Connect software	Bitmap (.bmp), GIF, JPEG, PNG, TIFF			

## Specifications continued

Key Features	Ti401 PRO	Ti480 PRO	TiX501	TiX580
Voice annotation	60 seconds maximum recording time per image; reviewable playback on camera, optional Bluetooth headset available but not required			
IR-PhotoNotes	Yes - 2 images	Yes - 5 images	60 seconds maximum recording time per image; reviewable playback on camera. Bluetooth headset required, not included	60 seconds maximum recording time per image; reviewable playback on camera. Bluetooth headset required, not included
Text annotations	Yes. Including standard shortcuts as well as user programmable options			
Video recording and formats	Yes. Including standard shortcuts	Yes. Including standard shortcuts	Standard	Standard and radiometric
Remote control operations	Remote display through Fluke Connect	Remote display and control operation through Fluke Connect	Remote display through Fluke Connect	Remote display and control operation through Fluke Connect
Auto capture (temperature and interval)	No	Yes	No	Yes
MATLAB® and LabVIEW® tool boxes	No	Integrate camera data, infrared video and images into software to support R&D analysis	No	Integrate camera data, infrared video and images into software to support R&D analysis
<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 hours per battery (actual life varies depending on settings and usage)			
Battery charging 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 +650 °C (-4 °F to +1,202 °F)	-20 °C to +1,000 °C (-4 °F to 1,832 °F)	-20 °C to +650 °C (-4 °F to +1,202 °F)	-20 °C to +1,000 °C (-4 °F to 1,832 °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			
Line temperature graph	No	Yes	No	Yes
<b>Color palettes</b>				
Standard palettes	9: Rainbow, Ironbow, Blue-Red, High Contrast, Amber, Amber Inverted, Hot Metal, Grayscale, Grayscale Inverted		8: 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		8: Ironbow Ultra, Blue-Red Ultra, High Contrast Ultra, Amber Ultra, Amber Inverted Ultra, Hot Metal Ultra, Grayscale Ultra, Grayscale Inverted Ultra	
<b>Smart lenses</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	

## Specifications continued

Key Features	Ti401 PRO	Ti480 PRO	TiX501	TiX580
<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		Hot and cold spot markers, individually enabled	
User-definable spot markers	No	3 user-definable spot markers	2 user-definable spot markers	3 user-definable spot markers
User defined measurement boxes	1 expandable-contractible measurement box with MIN-MAX-AVG temp display	Up to 3 expandable-contractible measurement box with MIN-MAX-AVG temp display	1 expandable-contractible measurement box with MIN-MAX-AVG temp display	3-Expandable-contractible measurement box with MIN-MAX-AVG temp display
Hard Case	Rugged, hard carrying case; soft transport bag	Rugged, IP67 rated, airtight hardcase with custom foam insert		
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 g <sup>2</sup> /Hz (3.8 g), 2.5 g IEC 60068-2-6			
Shock	25 g, IEC 68-2-29			
Drop	Engineered to withstand 2 meter (6.5 feet) drop with standard lens		Engineered to withstand 1 meter (3.3 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)		27.3 cm x 15.9 cm x 9.7 cm (10.8 in x 6.3 in x 3.8 in)	
Weight (battery included)	1.04 kg (2.3 lb)		1.54 kg (3.4 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, Turkish, and Arabic*			
RoHS compliant	Yes			

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

## Ordering information

FLK-Ti401 PRO 60 Hz Infrared Camera  
 FLK-Ti401 PRO 9 Hz Infrared Camera  
 FLK-Ti480 PRO 60 Hz Infrared Camera  
 FLK-Ti480 PRO 9 Hz Infrared Camera  
 FLK-TiX501 60 Hz Infrared Camera  
 FLK-TiX501 9 Hz Infrared Camera  
 FLK-TiX580 60 Hz Infrared Camera  
 FLK-TiX580 9 Hz Infrared Camera

### Included

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; 4GB micro SD card; and adjustable hand strap. **Available by free download:** Fluke Connect™ desktop software and user manual.

### Ti401 PRO only

Rugged, hard carrying case, soft transport bag

### Ti480 PRO, TiX501, TiX580 only

Rugged, IP67 rated, airtight hard carrying case

### TiX501, TiX580 only

Adjustable neck strap

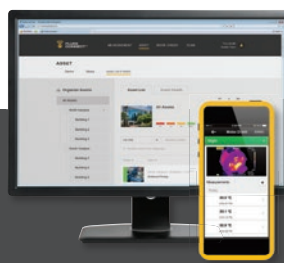
### Optional accessories

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/25MAC2 25 Micron Macro Infrared 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  
 FLK-TIX5XX-SBP4 Additional Smart Battery  
 FLK-TI-SBC3B Additional Smart Battery Charger

### TiX501 and TiX580 additional accessories

FLK-TIX5X-LENS CAP Infrared Lens Cover  
 FLK-TIX5XX-NECK Neck strap  
 FLUKE-TIX5XX HAND Hand strap  
 FLK-TI-BLUETOOTH Bluetooth Headset  
 FLK-TIX5XX-HDMI HDMI Cable

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



## 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 Ti300+ infrared camera is part of a growing system of connected test tools and equipment maintenance software. Visit the Fluke website to learn more about the Fluke Connect system.

Find out more at [fluke.com](http://fluke.com)



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 5GB of storage is free.

**Smartphone 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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