TiX1000, TiX660 and TiX640 Infrared Cameras
The Fluke Expert Series

Technical Data

Fluke Infrared Cameras
Experience. Performance. Confidence.

Take the guesswork out of your inspection and analysis.

- **The first HD* infrared camera with our Fluke Connect™ technology**–10 times the on-camera pixels than standard 320x240 cameras (1024x768 resolution, 786,432 pixels)

- **Enhanced image quality and temperature measurement accuracy**–get 4 times the resolution and pixels than standard mode with SuperResolution (up to 3,145,728 pixels)

- **Work from safer distances**–inspect areas that you could not get close to before and still get spectacular, detailed infrared images

- **Get a premium in-field viewing experience** for quick issue identification with the large 5.6 inch high resolution LCD screen

- **Save time focusing** with the most advanced focus options available for consistently in focus image: LaserSharp® Auto Focus, auto focus, manual and EverSharp multifocal recording features–available on one camera.

- **The Fluke Expert Series offers the best flexibility of the entire Fluke infrared camera portfolio** to capture spectacular images close up or from a distance. The TiX1000, TiX660 and TiX640 are compatible with 8 lens options (2x and 4x telephoto lenses, 2 wide angle lenses, 3 macro lenses and 1 standard lens) so great images can be captured despite certain obstacles.

PREMIUM IMAGE QUALITY

SPATIAL RESOLUTION
TiX1000
0.6 mRad
TiX660 and TiX640
0.8 mRad

RESOLUTION
TiX1000
1024 x 768 (786,432 pixels)
TiX660 and TiX640
640 x 480 (307,200 pixels)

SUPER RESOLUTION MODE
TiX1000
2048 x 1536 (3,145,728 pixels)
TiX660
1280 x 960 (1,228,800 pixels)

FIELD OF VIEW
TiX1000
32.4 ° x 24.7 ° (1.0/30 mm)
TiX660 and TiX640
30.9 ° x 23.1 ° (1.0/30 mm)

TEMPERATURE RANGE
-40 to 2000 °C (-40 to 3632 °F)
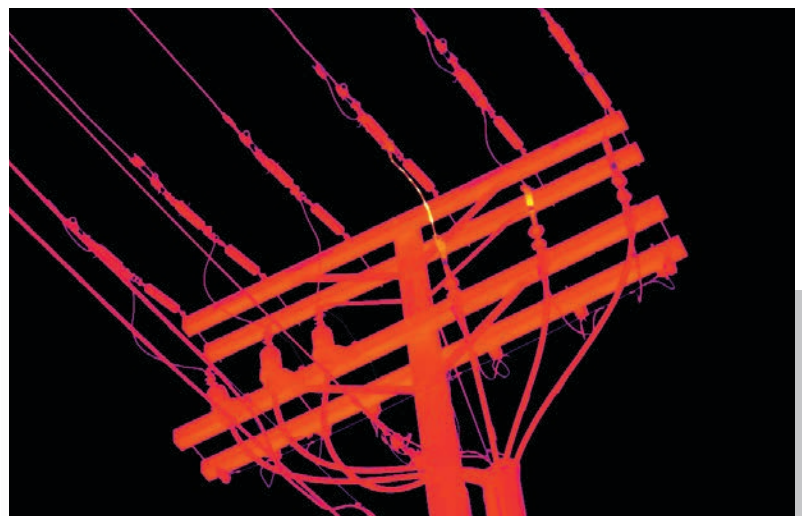*TiX1000 and TiX660*
-40 to 1200 °C (-40 to 2192 °F) TiX640

Built with
FLUKE CONNECT™

Electrical utility distribution lines

*HD images are captured by the TiX1000 in SuperResolution mode and viewable in the SmartView® software.

Detailed specifications

	TiX1000		TiX660		TiX640
Key features					
IFOV with standard lens (spatial resolution)	0.6 mRad		0.8 mRad		
Detector resolution	1024 x 768 (786,432 pixels)	2048 x 1536 (3,145,728 pixels SuperResolution mode)	640 x 480 (307,200 pixels)	1280 x 960 (1,228,800 pixels SuperResolution mode)	640 x 480 (307,200 pixels)
Field of View (FOV) w/standard 30mm lens	32.4 ° x 24.7 °		30.9 ° x 23.1 °		
SuperResolution and Dynamic SuperResolutin (resolution enhancement)	Yes, MicroScan technology quadruples IR measurement pixels				No
Subwindowing modes available (add on at time of order)	Option 1: 640 x 480 (60 fps) Option 2: 384 x 288 (120 fps) Option 3: 1024 x 96 (240 fps)		Option 1: 384 × 288 (120 fps) Option 2: 640 × 120 (240 fps)		
LaserSharp® Auto Focus	Yes				No
Laser distance meter	Yes, Accuracy: ± 1.5 mm, Range: 70 m (76.5 ft.), Wavelength: 635 nm (red), Laser class: 2				No
Auto focus	Yes				
Advanced manual focus	Yes				
EverSharp multifocal recording	Yes, Multifocal recording captures images from different focal distances and combines them into one image displaying each object sharply for the best image quality				
Spectral range	7.5 µm to 14 µm				
Video recording/video streaming	Non-radiometric infrared video recording (to SD card); Visual and infrared video streaming (radiometric and non-radiometric) with optional Ethernet converter cable				
Display	Extra-large 5.6" color TFT display, 1280 × 800 pixel resolution, Suitable for daylight operation				
Wireless connectivity					
Fluke Connect® compatible	Yes, with Fluke Connect® WiFi SD Card, available in approved certified regions only				
IR-Fusion® technology					
AutoBlend™ mode	Yes				
Viewing options available	Picture-in-picture, continuous blending, color alarms (above and below user defined temperatures)				
Thermal sensitivity [NETD]	≤ 0.05 °C at 30 °C target temp (50 mK)		≤ 0.03 °C at 30 °C target temp (30 mK)		
Filter mode	Yes				
Level and span	Smooth auto and manual scaling				
Minimum span (in manual mode)	2.5 °C (4.5 °F)				
Minimum span (in auto mode)	4.0 °C (7.2 °F)				
Built-in digital camera (visble light)	Yes, up to 8 Megapixel resolution for image and video recording				
Frame rate	30 Hz or 9 Hz versions		60 Hz or 9 Hz versions		
Laser pointer	Yes, class 2				
LED light (torch)	Yes				
Digital zoom	Up to 32x				
Geo-localization	Yes				
Data storage and image capture					
Extensive memory options	Removable micro SD memory card				
Image capture, review, save mechanism	One-handed image capture, review, and save capability				
Post-capture image editing (on camera)	Yes. Conduct on-camera analysis for in-field results				
Advanced text annotation	Yes. Including standard shortcuts as well as user programmable options				
File formats	.irb, jpg, .wav, .avi				
Memory review	Thumbnail view navigation and review selection				
Software	SmartView® software, included				
Export file formats with SmartView® software	BMP, DIB, GIF, JPE, JFIF, JPEG, JPG, PNG, TIF and TIFF				
Voice annotation	Yes				
Audio	Integrated microphone and loudspeaker for voice annotations				
IR-PhotoNotes™	Yes				
Text annotation	Yes				

Detailed specifications

	TiX1000	TiX660	TiX640
Video recording/video streaming	Yes		
Image/video storage	SD HC memory card		
Interfaces for image/data transfer	Supported in camera data ports: SD card, GigE vision, RS-232, USB 2.0, DVI-D and composite video Supported in SmartView® software: SD card (GigE Vision, RS-232 available in January 2015)		
Battery			
Batteries (field replaceable, rechargeable)	Two standard lithion ion video camera batteries with LED charge level indicator		One standard lithion ion video camera battery with charge level indicator
Battery charging system	External: 12 V dc to 24 V dc		
AC operation	Yes		
Temperature measurement			
Temperature measurement range	–40 °C to +1200 °C (–40 °F to 2192 °F) High temperature option: up to 2000 °C (3632 °F)		–40 °C to +1200 °C (–40 °F to 2192 °F)
Accuracy	± 1.5 K or ± 1.5 %		
On screen emissivity correction	Yes		
On-screen reflected background temperature compensation	Yes		
Correction functions	LDC™ - Laser rangefinder based distance correction, emissivity (manual or material table)		Emissivity (manual or material table)
	Transmissivity I Ambient temperature I Humidity (option)		
Color palettes			
Standard palettes	Rainbow, grayscale, ironbow, blue-red, marked, high contrast, steps, black rd, hot metal, menthol, sepia, grayscale/rainbow		
General specifications			
Color alarms	High-temperature and low-temperature		
Infrared spectral band	7.5 µm to 14 µm (long wave)		
Operating temperature	–25 °C to +55 °C (13 °F to 131 °F)		
Storage temperature	–40 °C to +70 °C (–40 °F to 158 °F)		
Relative humidty	10 % to 95 %, non-condensing		
Center-point temperature measurement	Yes		
Measurement functions (selection)	Multiple measurement spots, Hot/cold spot detection, Isotherms, Profiles, Differences (subtraction)		
Center box	Yes. Adjustable shapes (region of interest) for advanced analysis (min, max and avg)		
Vibration	Operational: 2G, IEC 68-2-6		
Shock	Operational: 25G, IEC 68-2-29		
Size (H x W x L)	210 mm × 125 mm × 155 mm (8.25 in x 4.9 in x 6.1 in)		206mm x 125mm x 139mm (8.1 in x 4.9 in x 5.5 in)
Weight	1.95 kg (4.3 lb)		1.4 kg (3.2 lb)
Viewfinder	Tiltable LCoS color viewfinder display, 800 × 600 pixel resolution		None
Ergonomics	Camcorder w/ handle		Camcorder
Enclosure rating	IP54		
Warranty	Two-years		
Recommended calilbration cycle	Two-years (assumes normal operation and normal aging)		
Supported languages	Czech, Dutch, English, Finnish, French, German, Hugarian, Italian, Japanese, Korean, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Traditional Chinese and Turkish.		

Available optional lenses* with IP54-proof bayonet mount				1024 x 768		640 x 480	
Fluke Model	Lens description	Focal distance (mm)	Focus (m)	iFOV (mRad)	FOV (°)	iFOV (mRad)	FOV (°)
FLK-Xlens/SupWide	Super wide-angle lens	7.5	0.17	2.3	135.8 x 101.4	3.3	128.9 x 92.7
FLK-Xlens/Wide	Wide-angle lens	15	0.47	1.1	67.8 x 50.7	1.7	62.3 x 46.4
FLK-Xlens/Stan	Normal lens	30	0.72	0.6	32.4 x 24.7	0.8	30.9 x 23.1
FLK-Xlens/Tele	Telephoto lens	60	1.99	0.3	16.4 x 12.4	0.4	14.9 x 11.3
FLK-Xlens/SupTele	Super telephoto lens	120	6.58	0.1	8.1 x 6.2	0.2	7.5 x 5.7
FLK-Xlens/Macro1	Close-up 0.2x	For 30	137.4	85.5 x 63.2	81	78.1 x 57.9	119
FLK-Xlens/Macro2	Close-up 0.5x	For 30	47.4	34.3 x 25.3	32	31.3 x 23.2	47
FLK-Xlens/Macro3**	Close up 0.5x	For 60	100	35.1 x 26.5	35	32.3 x 24.4	50

*Optional lenses must be calibrated to the individual camera. If lens purchase is post camera purchase, the camera will need to be returned for calibration with the lens.
**Macro3 lens must be used with the Telephoto lens (FLK-Xlens-Tele).

Ordering information

FLK-TiX1000 30Hz Thermal Imager; 1024x768; 30 Hz
FLK-TiX1000 9Hz Thermal Imager; 1024x768; 9 Hz
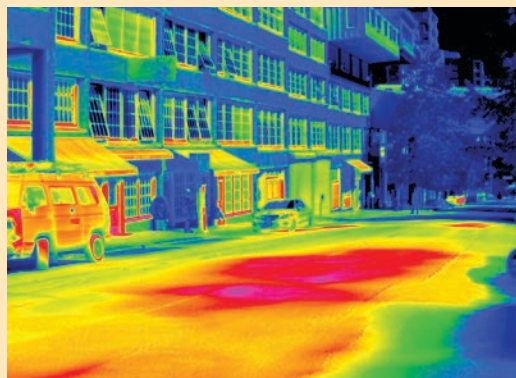**FLK-TiX660 60Hz** Thermal Imager; 640x480; 60 Hz
FLK-TiX660 9Hz Thermal Imager; 640x480; 9 Hz
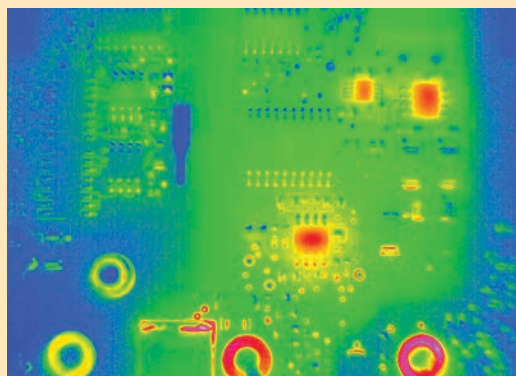**FLK-TiX640 60Hz** Thermal Imager; 640x480; 60 Hz
FLK-TiX640 9Hz Thermal Imager; 640x480; 9 Hz

Included with product
These infrared cameras are shipped with a rechargeable battery (2 for TiX1000 and TiX660; 1 for TiX640), battery charger and adapter, AC adapter, SD card reader, FC SD card for Fluke Connect, protective lens cap, hand strap, neck strap, carrying case, warranty card, safety instructions, calibration certificate, CD includes product manuals in English, Chinese, German, Portuguese, Spanish, French, Italian, Korean, Japanese, Russian and Turkish (printed in English and Chinese) and SmartView® software. (Software is also available via download at **www.fluke.com/smartviewdownload**).

Steam vents under city street

Printed circuit board assembly inspection

Built with
FLUKE CONNECT™

See it. Save it. Share it.
All the facts, right in the field.

Fluke Connect™ with ShareLive™ video call is the only wireless measurement system that lets you stay in contact with your entire team without leaving the field*. The Fluke Connect™ mobile app is available for Android™ versions: Galaxy S4, Nexus 5, HTC One running Android™ 4.4.x or higher and iOS (iPhone 4x and up running iOS 7 or higher, iPad (in an iPhone frame on iPad) and works with over 20 different Fluke products—the largest system of connected test tools in the world. And more are on the way. Go to the Fluke website to find out more.

*Within provider's wireless service area.

Download the app at:

Download on the **App Store**

ANDROID APP ON **Google play**

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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