TECHNICAL DATA

TiX1000, TiX660, TiX640 and TiX620 Infrared Cameras

The Fluke Expert Series

PREMIUM IMAGE QUALITY

SPATIAL RESOLUTION

TiX1000
0.57 mRad
TiX660 and TiX640
0.85 mRad
TiX620
0.84 mRad

RESOLUTION

TiX1000
1024 x 768 (786,432 pixels)
TiX660, TiX640 and TiX620
640 x 480 (307,200 pixels)

SUPER RESOLUTION MODE

TiX1000
2048 x 1536 (3,145,728 pixels)
TiX660, TiX640 and TiX620
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)
TiX620
32.7° x 24.0° (1.0/20 mm)

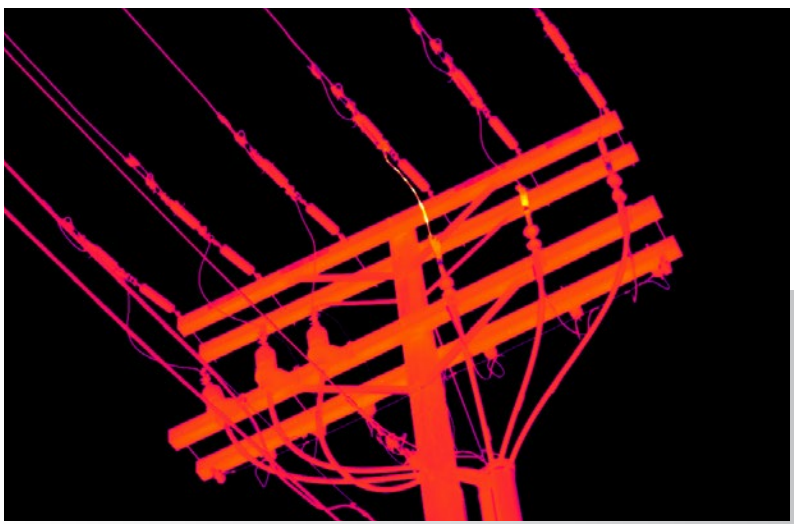
TEMPERATURE RANGE

TiX1000 and TiX660
-40 to 2000 °C (-40 to 3632 °F)
TiX640
-40 to 1200 °C (-40 to 2192 °F)
TiX620
-40 to 600 °C (-40 to 1112 °F)

Fluke Infrared Cameras

Take the guesswork out of your inspection and analysis.

- **10 times the on-camera pixels** than standard 320 x 240 cameras (1024 x 768 resolution, 786,432 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
- **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)
- **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 with up to eight lens options (2x and 4x telephoto lenses, two wide angle lenses, three macro lenses and one standard lens) so great images can be captured despite certain obstacles



Electrical utility distribution lines

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

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Detailed specifications

	TiX1000	TiX660	TiX640	TiX620
Key features				
IFOV with standard lens (spatial resolution)	0.57 mRad	0.84 mRad		0.85 mRad
Detector resolution	1024 x 768 (786,432 pixels)	640 x 480 (307,200 pixels)		
Field of View (FOV) w/standard 30mm lens	32.4° x 24.7°	30.9° x 23.1°		32.7° × 24.0°
SuperResolution and Dynamic SuperResolution (resolution enhancement)	Yes, MicroScan technology quadruples IR measurement pixels			
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)		384 × 288 (60 fps)
LaserSharp® Auto Focus	Yes		–	
Laser distance meter	Yes, Accuracy: ± 1.5 mm, Range: 70 m (76.5 ft.), Wavelength: 635 nm (red), Laser class: 2			
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 in color TFT display, 1280 × 800 pixel resolution, suitable for daylight operation			
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)		≤ 0.04 °C at 30 °C target temp (40 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		30 Hz
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			

FLUKE®

Detailed specifications

	TiX1000	TiX660	TiX640	TiX620
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			
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)			-40 to 600 °C (-40 to 1112 °F)
	High temperature option: up to 2000 °C (3632 °F)			
Accuracy	± 1.5 K or ± 1.5 % (±1 K when target measures 0 °C to 100 °C)			± 2 K or ± 2 %
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			
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 calibration 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.			

Compatible lenses

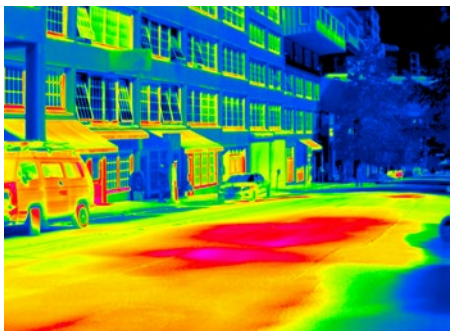
Available optional lenses* with IP54-proof bayonet mount				1024 x 768		640 x 480			Compatibility			
Fluke Model	Lens description	f / Focal Length	Minimum focus distance	FOV	IFOV/ Resolution	FOV	IFOV/ Resolution	IFOV (w/ SuperRes)	TiX1000	TiX660	TiX640	TiX620
FLK-Xlens/SupWide	Super wide-angle lens	1.0 / 7.5 mm	200 mm	136° x 101°	2.3 mRad	125° x 93°	3.4 mRad	1.7 mRad	X	X	X	-
FLK-Xlens/Wide	Wide-angle lens	1.0 / 15 mm	500 mm	68° x 51°	1.2 mRad	62° x 46°	1.7 mRad	0.8 mRad	X	X	X	-
FLK-Xlens/Stan	Standard lens	1.0 / 30 mm	750 mm	32 x 25°	0.6 mRad	31° x 23°	0.8 mRad	0.4 mRad	X	X	X	-
FLK-Xlens/Tele	Telephoto lens	1.0 / 60 mm	2,000 mm	16° x 12°	0.3 mRad	15° x 11°	0.4 mRad	0.2 m Rad	X	X	X	-
FLK-Xlens/SupTele	Super-telephoto lens	1.0 / 120 mm	6,000 mm	8.1° x 6.2°	0.1 mRad	7.5° x 5.7°	0.2 mRad	0.1 mRad	X	X	X	-
FLK-Xlens/Macro1	M 0.2x Close-up lens for 30 mm lens	-	137 mm	86° x 63°	81 µm	78° x 58°	119 µm	-	X	X	X	-
FLK-Xlens/Macro2	M 0.5x Close-up lens for 30 mm lens	-	47 mm	34° x 25°	32 µm	31° x 23°	47 µm	-	X	X	X	-
FLK-Xlens/Macro3**	M 0.2x Close-up lens for 60 mm lens	-	100 mm	35° x 27°	35 µm	32° x 24°	50 µm	-	X	X	X	-
FLK-Xlens/Wide10	Wide-angle lens	1.0 / 10 mm	250 mm	-	-	57° x 44°	1.6 mRad	0.8 mRad	-	-	-	X
-	Standard lens	1.0 / 30 mm	500 mm	-	-	33° x 24°	0.9 mRad	0.4 mRad	-	-	-	X
FLK-Xlens/Tele40	Telephoto lens	1.0 / 40 mm	1,300 mm	-	-	15.5° x 11.6°	0.4 mRad	0.2 mRad	-	-	-	X

*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).

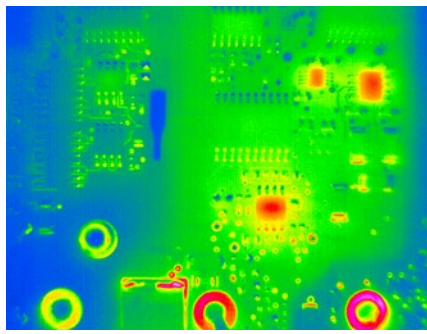
Ordering information

FLK-TiX1000 30Hz Thermal Imager; 1024 x 768; 30 Hz
FLK-TiX1000 9Hz Thermal Imager; 1024 x 768; 9 Hz
FLK-TiX660 60Hz Thermal Imager; 640 x 480; 60 Hz
FLK-TiX660 9Hz Thermal Imager; 640 x 480; 9 Hz
FLK-TiX640 60Hz Thermal Imager; 640 x 480; 60 Hz
FLK-TiX640 9Hz Thermal Imager; 640 x 480; 9 Hz
FLK-TiX620 30Hz Thermal Imager; 640 x 480; 30 Hz

Included with product
These infrared cameras are shipped with a rechargeable battery (2 for TiX1000/TiX660; 1 for TiX640/620), battery charger and adapter, AC adapter, SD card reader, protective lens cap, hand strap, neck strap, carrying case, warranty card, safety instructions, calibration certificate. Software is available via download at **www.fluke.com/smartviewdownload**



Steam vents under city street



Printed circuit board assembly inspection

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

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