Technical Data

Fluke Ti480U, Ti401U, Ti300U Thermal Imagers

Classic Ultra Series, Sharper & Smarter

The NEW Fluke Classic Ultra Series introduces a leading edge visual infrared experience. Smartest, most intuitive user interface, with increased thermal sensitivity to capture the smallest differences and latest technology for on-screen clarity. A professional 640 x 480 Infrared Camera with improved spatial resolution and UltraFocus focusing technology makes the Ti480U/401U/300U the go to camera range for the professional moving to the next level.

With the support of the new sensor, the Ultra Series now makes a substantial progress in image quality, focus speed and test functions,taking performance to whole new level. While retaining the classic industrial design, it improves the user experience and help users with their efficient practical workflow.

We believe that every day Thermographers are making things better around them, and Fluke is striving for this common goal together with its users.

- It is equipped with a new sensor and optical system, the imaging effect breaks the parameter limit, the image sharpness is further improved, the target is clearer, and the problem region is presented more clearly

- UltraFocus focusing technology: effective focusing with image algorithm, it can automatically focus in 1 s according to the temperature difference in complex scenes; laser autofocus, free choice of test targets; continuous auto focus function makes inspection work easier

- Up to 30Hz frame rate, the full range of "camera motion" for smooth and free observation, video recording without frame drop or lag

- Temperature measurement range up to 1200° C to verify higher process requirements and explore more R&D fields

- Support up to 10x digital zoom, free screen zooming, check long-distance targets: high-voltage equipment, overhead pipelines, large mechanical equipment

- SmartView IR software for PC to process thermal video, analyze data, export reports, and complete the final step of the job

- Classic industrial design: inheriting the appearance design and material of the Ultra Series, it is still comfortable to hold with one hand and easy to operate, and it is not easy to fatigue for long time use

Ti480U

- 640 × 480 Pixels
- 0.68 mrad Spatial Resolution (IFOV)
- –20 ℃ to 1200℃ Temperature Measurement Range

Ti401U

- 640 × 480 Pixels
- 0.68 mrad Spatial Resolution (IFOV)
- –20 ℃ to 650℃ Temperature Measurement Range

Ti300U

- 384 × 288 Pixels
- 1.14 mrad Spatial Resolution (IFOV)
- –20 ℃ to 650℃ Temperature Measurement Range

Specifications

	Fluke Ti480U	Fluke Ti401U	Fluke Ti300U
Basic Parameters			
IR resolution	640 × 480	640 × 480	384 × 288
SuperResolution	1280 × 960	–	–
Detector type	Uncooled focal plane infrared detector		
Thermal sensitivity (NETD) @30 °C	50 mk (0.05°C)	75 mk (0.075°C)	75 mk (0.075°C)
Spectral response	7–14 µm		
Image frame rate	30 Hz	9/30Hz	9/30Hz
Lens Field of View (FOV)	25° x 19°		
Spatial resolution (IFOV)	0.68 mrad	0.68 mrad	1.14 mrad
Minimum imaging distance	0.25 m		0.1 m
Lens focal distance	f24.8		f15
Focus	Auto / Manual Focus		
Lens recognition	Auto		
Optional lens	2x telephoto lens 4x telephoto lens Wide–angle lens		
Digital zoom	1–10x	1–10x	1–4x
Measurement Analysis			
Temperature range	–20°C to 1200°C	–20°C to 650°C	
Temperature measurement range	–20°C to 120°C 0°C to 650°C 300°C to 1200°C	–20°C to 120°C 0°C to 650°C	
Intelligent range	Yes	Yes	Yes
Temperature accuracy	±2°C or 2%, whichever is greater (@ 15°C to 35°C ambient temperature)		
Temperature measurement area	Spots: 16 Lines: 8 Areas: 12		
Global temperature measurement correction	Support emissivity, environment temperature, reflected temperature, relative humidity, temperature measurement distance, IR window (temperature and transmittance) correction		
Area temperature measurement correction	Yes		
Area audible alarm	Support high and low temperature alarm for the highest, lowest and average temperature of the area		
Temperature rise function	Reference temperature can be the highest, lowest or custom temperature of the area		
On-screen analysis	The thermal photos or videos are directly analyzed in the Imager		
Analysis software for PC	SmartView IR		

Specifications

Image Display

Display screen	3.5" LCD, 640*480
Image mode	Thermal image, visible image, PIP, Fusion
Color palettes	Grey, Iron 10, IronRed, Rainbow, Grey10, GreyRed, MidGrey, Yellow and Rain Palettes can be inverted Support real-time palette preview and switching
Temperature span mode	Support automatic adjustment of temperature span (min. 3°C) Support manual adjustment of temperature span (min. 2°C) The maximum and minimum value of temperature span can be selected by touch (min. 2°C)
Audible alarm	Yes. Above the temperature, below the temperature and between the temperature
Information displayed on the image	Display the global maximum, minimum, average temperature and temperature measurement parameters
High/low temperature tracking	Marking and automatically tracks high and low temperature points

IR-Fusion

Blending degree of a visual photo and an infrared thermal image	0% to 100%
Picture-in-Picture (PIP)	Yes. The size, position and blending degree of infrared window can be adjusted

Shooting Function

Digital camera	Industrial grade digital camera with 13-megapixel lens		
Memory card	Micro SD card, standard 32GB; expandable to 64GB, 128GB		
Shooting mode	Support single frame and time-lapse shooting		
Image format	.bmp.jpg		
Screen freeze	Support single frame shooting and fully-radiometric video recording	Support single frame shooting	Support single frame shooting and fully-radiometric video recording
Code scanning function	Yes. A QR code can be scanned as a label		
Annotation function	Support voice, text and label annotation		
Fully-radiometric video recording	Support thermal video recording for analysis	–	Support thermal video recording for analysis
Non-fully-radiometric video recording	Support thermal video, visible video recording (only for viewing, not for analysis)	–	Support thermal video, visible video recording (only for viewing, not for analysis)
Video frame rate	1 Hz to 9/16 Hz	–	1 Hz to 9/16 Hz
Video format	.is5, .mp4	–	.is5, .mp4
Gallery	Support viewing, editing and deleting captured images and video files		

Data Connection

Bluetooth connection	Support BT4.2LE		
USB interface	Type-A, USB 2.0		
HDMI interface	Mini HDMI interface, HDMI 1.4		
Fully-radiometric video analysis via PC software	Yes	–	Yes
Remote display via software	Yes	–	Yes
Remote operation via software	Yes	–	Yes
HDMI output	Support connection to a display or a projector via the HDMI interface		

Specifications

Ancillary Function	
Laser	Yes
Temperature feature measurement	Support measuring the length of the temperature measurement line; support measuring the rectangular and circular area of the temperature measurement area
LED torch/flashlight	Support flashlight and flash mode

Power System	
Battery type	7.2V, 19Whr lithium battery, replaceable and rechargeable on field
Battery life	2 to 3 hours/battery (*Actual life depends on settings and usage)
Charge mode	10-15V DC charging
Charge time	2.5 hours to full charge
Energy saving management	Auto screen-off
Battery Charge	Ti SBC3B Two Bay Battery Charger (100 V ac to 240 V ac, 50/60 Hz, included), or in-Imager charging. Optional 12 V automotive charging adapter.
External power supply	Power adapter (100 to 240V, 50/60Hz AC power)

Reliability and Certification		
Safety standard	IEC61010-1: Pollution Degree 2	
Electromagnetic Compatibility (EMC)	International: IEC 61326-1: Industrial Electromagnetic Environment: CISPR 11: Group 1, Class A Korea (KCC): Class A Equipment (Industrial Broadcasting & Communication Equipment)	
Radio frequency	2400MHz to 2483.5MHz	
Radio output power	<100mW	
Laser	IEC 60825-1, Class 2, 650nm, <1mW	
Ingress protection	IEC60529: IP52	
Drop test	Designed for 1 m drop resistance	
RoHS3 Directive	Yes	

Specifications		
Operating temperature	-10°C to 50°C	
Storage temperature	-20°C to 50°C, without battery	
Relative humidity	0% to 95% (non-condensing)	
Dimensions	279 mm x 121 mm x 175 mm	
Weight	1215 g	1188 g

Warranty and Maintenance	
Warranty	2 years
Recommended calibration period	2 years

Supported language	
Supported language	Simplified Chinese, English, Japanese, Korean, Traditional Chinese

Optional Lenses

IR Resolution		Standard Lens	4X Tele Lens	2X Tele Lens	Wide Lens
		TI480/401U-STD, 25° TELE LEN	TI480/401U-4XTELE, 7° TELE LEN	TI480/401U-2XTELE, 12° TELE LEN	TI480/401U-WIDE, 44° WIDE LEN
640*480			5584363	5595322	5584356
	Measurement Range	–20°C to 1200°C / –20°C to 650°C	–20°C to 1200°C / –20°C to 650°C	–20°C to 1200°C / –20°C to 650°C	–20°C to 1200°C / –20°C to 650°C
	Lens Material	Germanium	Germanium	Germanium	Germanium
	IFOV(Spatial resolution) mrad	0.68mrad	0.19mrad	0.33mrad	1.20mrad
	Field of View	25° x 19°	7° x 5°	12° x 9°	44° x 34°
	Minimum Focus Distance	0.25m	3m	1m	0.1m
	Focal Length	24.8mm	87.5mm	51.2mm	13.7mm

IR Resolution		Standard Lens	4X Tele Lens	2X Tele Lens	Wide Lens
		TI300U-STD, 25° TELE LEN	TI300U-4XTELE, 7° TELE LEN	TI300U-2XTELE, 12° TELE LEN	TI300U-WIDE, 44° WIDE LEN
384*288			5584342	5584339	5584321
	Measurement Range	–20°C to 650°C	–20°C to 650°C	–20°C to 650°C	–20°C to 650°C
	Lens Material	Germanium	Germanium	Germanium	Germanium
	IFOV(Spatial resolution) mrad	1.14mrad	0.32mrad	0.55mrad	2.00mrad
	Field of View	25° x 19°	7° x 5°	12° x 9°	44° x 34°
	Minimum Focus Distance	0.1m	1m	0.25m	0.1m
	Focal Length	15mm	51.2mm	24.8mm	8mm

Ordering Information

Packing List	Ti300U	Ti401U	Ti480U
The Imager (standard field angle lens included)	√	√	√
SBP3 smart battery pack	2	2	2
SBC3 power adapter	√	√	√
SBC3 battery charging base	√	√	√
Hand strap	√	√	√
Hard carrying case	-	√	√
Carrying case	√	-	-
Soft carrying case	√	-	-
Mini HDMI cable	√	√	√
USB-A dual-port cable	√	√	√
32GBMICROSD	√	√	√
Quick reference guide	√	√	√
Safety information	√	√	√
Detection report	√	√	√

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