

TECHNICAL DATA

# Fluke Ti400 a3001 FC iFlex® Kit



## Key features

### The Ti400 offers:

- Consistently in-focus images with the exclusive LaserSharp® Auto Focus system
- See the crucial details needed to help clearly identify potential problems with precisely blended visual and infrared images – only with IR Fusion® technology with AutoBlend™ mode.
- Fluke Connect® compatible - the largest network for wirelessly enabled tools
- Faster communication with wireless image transfer directly to your PC, Apple® iPhone® or iPad®
- High-temperature measurement up to 1200 °C
- Ruggedized high resolution 640 x 480 capacitive touch screen for quick menu navigation
- Capture additional digital images to show location or additional site details with IR-PhotoNotes™ Annotation System
- More advanced display output options to get the details via streaming video to PC or high definition monitor (USB and HDMI)
- Voice recording and annotation gets additional details saved with the image file
- Optional interchangeable lenses for greater flexibility in additional applications
- Ruggedized Touchscreen Display (Capacitive) 8.9 cm (3.5 in) diagonal landscape color VGA (640 x 480) LCD with backlight for quick menu navigation
- 5 MP industrial-performance digital camera for high definition image quality
- Included SmartView® and SmartView Mobile App Analysis and Reporting Software

### The 3000 FC Wireless Multimeter offers:

- AC and DC voltage measurements to 1000 V
- AC and DC current with 0.01 mA resolution

- Continuity, resistance, diode test, capacitance and frequency measurements
- MIN/MAX Recording
- CAT III 1000 V, Cat IV 600 V; IP54

**The iFlex™ Wireless Current Module allows you to measure around awkward sized conductors or get into tight spaces and makes wire access easier. The a3001 FC offers:**

- One (1) true-RMS flexible current meter
- One (1) iFlex i2500-10 flexible current probe
- Measure up to 2500 A AC
- Use as a standalone meter or as part of the system
- Logging function for recording and saving up to 65,000 readings
- Inrush function
- Magnetic hanging strap

## Product overview: Fluke Ti400 a3001 FC iFlex® Kit

[See How It Works](#)  
[Fluke Connect FAQs](#)

The Ti400 Thermal Camera combined with the Fluke Connect® App and the a3001 FC iFlex module is a high performance cutting edge kit that helps you accurately troubleshoot issues and get you back online. Safely capture AC current measurements with your Fluke a3001 FC iFlex module from up to 20 meters away on the 3000 FC DMM, while simultaneously conducting an infrared inspection with your Ti400 thermal camera. Upload all your measurement data to the Cloud via your smart phone and you can analyze and share your inspection results for each piece of equipment from anywhere, with any team member, at any time - only with Fluke Connect.

The Ti400 is one of only three thermal cameras in the Fluke portfolio equipped with LaserSharp® Auto Focus for consistently in-focus images. Every. Single. Time. Without an in-focus image, temperature measurements may be off by as much as 20 degrees, making it much easier to miss a potential problem. LaserSharp Auto Focus tells you exactly where you are focusing. It uses a laser to calculate the distance to your target before it focuses. Place the red laser dot on the equipment you are inspecting, then pull and release the trigger for a perfect in-focus image. Uptime or downtime. Your Results Matter.

## Specifications: Fluke Ti400 a3001 FC iFlex® Kit

### Fluke Ti400 Infrared Camera

| Detailed Specifications                                    |  |
|--|--|
| Temperature  |  |
| Temperature measurement range (not calibrated below -10°C) | -20°C to +1200°C<br>(-4°F to +2192°F)              |
| Temperature measurement accuracy                           | ±2°C or 2% (at 25°C nominal, whichever is greater) |
| On-screen emissivity correction                            | Yes (by number and table)                          |
| On-screen reflected background temperature compensation    | Yes  |
| On-screen transmission correction                          | Yes  |
| Imaging Performance  |  |

|  |   |
|--|---|
| Image capture frequency                        | 60 Hz refresh rate  |
| Detector type                                  | Focal Plane Array, uncooled microbolometer, 320 x 240 pixels  |
| Thermal sensitivity (NETD)                     | ≤ 0.05°C at 30°C target temp (50 mK)  |
| Total pixels                                   | 76,800  |
| Infrared spectral band                         | 7.5 μm to 14 μm (long wave)   |
| Visual (visible light) camera                  | Industrial performance 5.0 megapixel  |
| <b>Standard Infrared Lens Type</b>             |   |
| Field of view                                  | 24° x 17°   |
| Spatial resolution (IFOV)                      | 1.31 mRad   |
| Minimum focus distance                         | 15 cm (approx. 6 in)  |
| <b>Optional Telephoto Infrared Lens Type</b>   |   |
| Field of view                                  | 12° x 9°  |
| Spatial resolution (IFOV)                      | 0.65 mRad   |
| Minimum focus distance                         | 45 cm (approx. 18 in)   |
| <b>Optional Wide-Angle Infrared Lens Type</b>  |   |
| Field of view                                  | 46° x 34°   |
| Spatial resolution (IFOV)                      | 2.62 mRad   |
| Minimum focus distance                         | 15 cm (approx. 6 in)  |
| <b>Focus Mechanism</b>                         |   |
| LaserSharp® Auto Focus system                  | Yes   |
| Advanced manual focus                          | Yes   |
| <b>Image Presentation</b>                      |   |
| Palettes                                       |   |
| Standard                                       | Ironbow, Blue-Red, High Contrast, Amber, Amber Inverted, Hot Metal, Grayscale, Grayscale Inverted   |
| Ultra Contrast™                                | Ironbow Ultra, Blue-Red Ultra, High Contrast Ultra, Amber Ultra, Amber Inverted Ultra, Hot Metal Ultra, Grayscale Ultra, Grayscale Inverted Ultra |
| Level and span                                 | Smooth auto-scaling and manual scaling of level and span  |
| 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)   |
| <b>IR-Fusion® Information</b>                  |   |
| Picture-in-Picture (PIP)                       | Yes   |
| Full screen infrared                           | Yes   |
| AutoBlend™ mode                                | Yes   |

|  |   |
|--|---|
| Color alarms (temperature alarms)                                    | High-temperature , low-temperature, and isotherm (user-selectable)  |
| <b>Image Capture and Data Storage</b>                                |   |
| Image capture, review, save mechanism                                | One-handed image capture, review, and save capability   |
| Storage medium   | Micro SD Memory Card, on-board flash memory, save-to-USB capability, direct download via USB-to-PC connection |
| File formats   | Non-radiometric (.bmp) or (.jpeg) or fully-radiometric (.is2)   |
|  | No analysis software required for non-radiometric (.bmp and jpg) files  |
| Export file formats w/SmartView® software                            | BMP, DIB, GIF, JPE, JFIF, JPEG, JPG, PNG, TIF, and TIFF   |
| Memory review  | Thumbnail view navigation and review selection  |
| <b>Other Time-Saving and Productivity Features</b>                   |   |
| Voice annotation   | 60 seconds maximum recording time per image; reviewable playback on imager                                    |
| IR-PhotoNotes™   | Yes   |
| Wi-Fi connectivity   | Yes, to PC, iPhone®, iPad® and WiFi to LAN <sup>1</sup>   |
| Text annotation <sup>1</sup>   | Yes   |
| Video recording <sup>1</sup>   | Standard and radiometric  |
| Streaming video  | Via USB to PC and HDMI to HDMI compatible screen  |
| Fluke Connect compatible   | Yes (where available)   |
| Auto capture (temperature and interval) <sup>1</sup>                 | Yes   |
| Remote control and operation (for special and advanced applications) | Yes   |
| <b>General Specifications</b>  |   |
| 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   |
| Ruggedized touchscreen display (capacitive)                          | 8.9 cm (3.5 in) diagonal landscape color VGA (640 x 480) LCD with backlight                                   |

|                               |   |
|-------------------------------|---|
| Controls and adjustments      | User selectable temperature scale (°C / °F)   |
|                               | Language selection  |
|                               | Time/Date set   |
|                               | Emissivity selection  |
|                               | Reflected background temperature compensation   |
|                               | Transmission correction   |
|                               | User selectable hot spot and cold spot, and center point on the image   |
|                               | Expandable-contractable Measurement Box with MIN-AVG-MAX temp   |
|                               | Color alarms  |
|                               | User selectable backlight setting graphical information display preference  |
|                               | Graphical information display preference  |
| Software                      | SmartView® and SmartView Mobile App - full analysis and reporting software included   |
| Batteries                     | Two lithium ion rechargeable smart battery packs with five-segment LED display to show charge level, all models   |
| Battery life                  | Four+ hours continuous use per battery pack (assumes 50% brightness of LCD and average usage)   |
| Battery charge time           | 2.5 hours to full charge  |
| AC battery charging           | Two-bay AC battery charger (110 VAC to 220 VAC, 50/60 Hz) (included), or in-imager charging. AC mains adapters included. Optional 12 V automotive charging adapter. |
| AC operation                  | AC operation with included power supply (110 VAC to 220 VAC, 50/60 Hz). AC mains adapters included.   |
| Power saving                  | User selectable sleep and power off modes   |
| Safety standards              | UL 61010-1:2012 CAN/CSA-C22.2 No.61010-1-12 IEC 61010-1 3rd Edition (2010)  |
| Electromagnetic compatibility | EN 61326-1:2006 IEC 61326-1:2005  |
| C Tick                        | IEC/EN 61326-1  |
| US FCC                        | CFR 47, Part 15 Subpart B Class B   |
| Vibration                     | 0.03 g <sup>2</sup> /Hz (3.8 grms), 2.5 g IEC 68-2-6  |
| Shock                         | 25 g, IEC 68-2-29   |
| Drop                          | Engineered to withstand 2 meter (6.5 feet) with standard lens   |
| Size (H x W x L)              | 27.7 x 12.2 x 16.7 cm (10.9 x 4.8 x 6.5 in)   |
| Weight (battery included)     | 1.04 Kg (2.3 lb)  |
| Enclosure rating              | 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 |
| 1. Coming soon via firmware update. Users notified via SmartView software when available. |   |

### Fluke 3000 FC Series Wireless Multimeter

\* For all specifications: accuracy is specified for one year after calibration, at operating temperatures of 18°C to 28°C, with relative humidity at 0% to 90%. Accuracy specifications take the form of  $\pm([\% \text{ of Reading}] + [\text{Number of least significant digits}])$ .

#### Detailed Specifications

##### AC Voltage

|                                 |   |          |
|---------------------------------|---|----------|
| Range <sup>1</sup> / Resolution | 600.0 mV / 0.1 mV<br>6.000 V / 0.001 V<br>60.00 V / 0.01 V<br>600.0 V / 0.1 V<br>1000 V / 1 V |          |
| Accuracy <sup>2 3 4</sup>       | <b>45 Hz to 500 Hz</b>  | 1.0% + 3 |
|                                 | 500 Hz to 1 kHz   | 2.0% + 3 |

1. All AC voltage ranges are specified from 1% of range to 100% of range.
2. Crest factor of  $\leq 3$  at full scale up to 500 V, decreasing linearly to crest factor  $< 1.5$  at 1000 V.
3. For non-sinusoidal waveforms, add  $\pm(2\% \text{ of reading} + 2\% \text{ full scale})$  typical, for crest factor up to 3.
4. Do not exceed 107 V-Hz.

#### DC Voltage, Continuity, Resistance, Diode Test and Capacitance

##### Function

|          |                           |  |
|----------|---------------------------|--|
| mV       | <b>Range / Resolution</b> | 600.0 mV / 0.1 mV  |
|          | Accuracy                  | 0.09% + 2  |
| V        | <b>Range / Resolution</b> | 6.000 V / 0.001 V<br>60.00 V / 0.01 V<br>600.0 V / 0.1 V<br>1000 V / 1 V   |
|          | Accuracy                  | 0.09% + 2<br>0.15% + 2   |
| )))      | <b>Range / Resolution</b> | 600 $\Omega$ / 1 $\Omega$  |
|          | Accuracy                  | Meter beeps at $< 25 \Omega$ , beeper detects opens or shorts of 250 $\mu\text{s}$ or longer.  |
| $\Omega$ | <b>Range / Resolution</b> | 600.0 $\Omega$ / 0.1 $\Omega$<br>6.000 k $\Omega$ / 0.001 k $\Omega$<br>60.00 k $\Omega$ / 0.01 k $\Omega$<br>60.00 k $\Omega$ / 0.1 k $\Omega$<br>600.0 k $\Omega$ / 0.001 M $\Omega$<br>50.00 M $\Omega$ / 0.01 M $\Omega$ |
|          | Accuracy                  | 0.5% + 2<br>0.5% + 1<br>1.5% + 3   |

|            |                           |  |
|------------|---------------------------|--|
| Diode test | <b>Range / Resolution</b> | 2.000 V / 0.001 V  |
|            | Accuracy                  | 1% + 2   |
| μF         | <b>Range / Resolution</b> | 1000 nF / 1 nF<br>10.00 μF / 0.01 μF<br>100.0 μF / 0.1 μF<br>9999 μF <sup>1</sup> / 1 μF |
|            | Accuracy                  | 1.2% + 2<br>10% typical  |

1. In the 9999 μF range for measurements to 1000 μF, the measurement accuracy is 1.2% + 2.

### AC and DC Current

Function

|                           |                                       |  |
|---------------------------|---------------------------------------|--|
| mA AC<br>(45 Hz to 1 kHz) | <b>Range<sup>1</sup> / Resolution</b> | 60.00 mA / 0.01 mA<br>400.0 mA <sup>3</sup> / 0.1 mA |
|                           | Accuracy                              | 1.5% + 3   |
| mA DC <sup>2</sup>        | <b>Range<sup>1</sup> / Resolution</b> | 60.00 mA / 0.01 mA<br>400.0 mA <sup>3</sup> / 0.1 mA |
|                           | Accuracy                              | 0.5% + 3   |

1. All AC current ranges are specified from 5% of range to 100% of range.

2. Input burden voltage (typical): 400 mA input 2 mV/mA.






3. 400.0 mA accuracy specified up to 600 mA overload.

### Frequency

|                       |  |
|-----------------------|--|
| Range / Resolution    | 99.99 Hz / 0.01 Hz<br>999.9 Hz / 0.1 Hz<br>9.999 kHz / 0.001 kHz<br>99.99 kHz / 0.01 kHz |
| Accuracy <sup>1</sup> | 0.1% + 1   |

1. Frequency is specified up to 99.99 kHz in volts and up to 10 kHz in amps.

### Input Characteristics

| Function  | Overload protection | Input impedance (nominal) | Common mode rejection ratio (1 kΩ unbalance) | Normal mode rejection         |                               |
|---|---------------------|---------------------------|--|-------------------------------|-------------------------------|
|  | 1100 Vrms           | > 10 MΩ < 100 pF          | > 120 dB at DC, 50 Hz or 60 Hz               | > 60 dB at 50 Hz or 60 Hz     |                               |
|  | 1100 Vrms           | > 10 MΩ < 100 pF          | > 60 dB, DC to 60 Hz                         | > 60 dB at 50 Hz or 60 Hz     |                               |
|  | 1100 Vrms           | > 10 MΩ < 100 pF          | > 120 dB at DC, 50 Hz or 60 Hz               | > 60 dB at 50 Hz or 60 Hz     |                               |
| Open circuit test voltage   |                     |                           | Full scale voltage                           | Typical short circuit current |                               |
|   |                     |                           | To 6 MΩ                                      | 50 MΩ                         | Typical short circuit current |
|  | 1100 Vrms           | < 2.7 VDC                 | < 0.7 VDC                                    | < 0.9 VDC                     | < 350 mA                      |
|  | 1100 Vrms           | < 2.7 VDC                 | 2.000 VDC                                    |                               | < 1.1 mA                      |

| <b>mA Function</b>                                    |   |               |
|---|---|---------------|
| Overload protection                                   | Fused, 44/100 A, 1000 V FAST Fuse   |               |
| Overload  | 600 mA overload for 2 minutes maximum, 10 minutes rest minimum  |               |
| <b>MIN/MAX Recording Accuracy</b>                     |   |               |
| DC functions  | The specified accuracy of the measurement function $\pm 12$ counts for changes > 350 mS in duration.  |               |
| AC functions  | The specified accuracy of the measurement function $\pm 40$ counts for changes > 900 mS in duration.  |               |
| <b>General Specifications</b>                         |   |               |
| Maximum voltage between any terminal and earth ground | 1000 VDC or AC rms  |               |
| $\Omega$ fuse protection from A inputs                | 0.44 A (44/100 A, 440 mA), 1000 V FAST Fuse, Fluke specified part only  |               |
| Display (LCD)   | <b>Update rate</b>  | 4/sec         |
|   | Volts, amps, ohms   | 6000 counts   |
|   | Frequency   | 10,000 counts |
|   | Capacitance   | 1,000 counts  |
| Battery type  | Three AA Alkaline batteries, NEDA 15A IEC LR6   |               |
| Battery life  | 250 hours minimum   |               |
| RF communications                                     | 2.4 GHZ ISM Band  |               |
| RF communication range                                | <b>Open air, unobstructed</b>   | Up to 20 m    |
|   | Obstructed, sheetrock wall  | Up to 6.5 m   |
|   | Obstructed, concrete wall, or steel electrical enclosure  | Up to 3.5 m   |
| Temperature   | <b>Operating</b>  | -10°C to 50°C |
|   | Storage   | -40°C to 60°C |
| Temperature coefficient                               | 0.1 x (specified accuracy) / °C (< 18°C or > 28°C)  |               |
| Relative humidity                                     | 0% to 90% (0°C to 35°C)<br>0% to 75% (35°C to 40°C)<br>0% to 45% (40°C to 50°C)   |               |
| Altitude  | <b>Operating</b>  | 2,000 m       |
|   | Storage   | 12,000 m      |
| Electromagnetic compatibility<br>EMI, RFI, EMC, RF    | EN 61326-1:2006, EN 61326-2-2:2006<br>ETSI EN 300 328 V1.7.1:2006, ETSI EN 300 489<br>V1.8.1:2008,<br>FCC Part 15 Subpart C Sections 15.207, 15.209, 15.249<br>FCCID : FCC: T68-FDMMBLE IC: 6627A-FDMMBLE |               |
| Safety compliance                                     | ANSI/ISA 61010-1 / (82.02.01): 3rd edition<br>CAN/CSA-C22.2 No 61010-1-12: 3rd edition<br>UL 61010-1: 3rd edition<br>IEC/EN 61010-1:2010  |               |
| Certifications  | CSA, FCC, CE  |               |



|  |  |
|--|--|
| Ingress Protection (IP) rating           | IP54   |
| Pollution Degree                         | 2  |
| Size (H x W x L)                         | 4.75 x 9.3 x 20.7 cm (1.87 x 3.68 x 8.14 in) |
| Weight                                   | 340 g (12 oz)                                |
| Warranty                                 | Three years                                  |
| Not compatible with Fluke CNX test tools |  |

### Fluke a3001 FC Wireless iFlex AC Current Module

| Specifications               |   |             |
|------------------------------|---|-------------|
| Range                        | 0.5 A to 2500 A AC  |             |
| Resolution                   | 0.1 A   |             |
| Accuracy                     | 3% ±5 digits (5 Hz to 500 Hz)   |             |
| Crest factor (50 Hz / 60 Hz) | 3.0 at 1100 A<br>2.5 at 1400 A<br>1.42 at 2500 A<br>add 2% for C.F. > 2 |             |
| LCD w/ backlight             | 3½ digits   |             |
| Log rate/interval            | 1 sec minimum/adjustable by PC or front panel                           |             |
| Battery type                 | 2 AA, NEDA 15 A, IEC LR6  |             |
| Battery life                 | 400 hours   |             |
| Memory                       | Record up to 65,000 readings  |             |
| RF communications            | 2.4 GHZ ISM Band  |             |
| RF communication range       | <b>Open air, unobstructed</b>   | Up to 20 m  |
|                              | Obstructed, sheetrock wall  | Up to 6.5 m |
|                              | Obstructed, concrete wall or steel electrical enclosure                 | Up to 3.5 m |
| Operating temperature        | -10°C to +50°C  |             |
| Storage temperature          | -40°C to +60°C  |             |
| Temperature coefficient      | Add 0.1 x (specified accuracy) / °C (< 18°C or > 28°C)                  |             |
| Operating humidity           | 90% at 35°C<br>75% at 40°C<br>45% at 50°C                               |             |
| Altitude                     | <b>Operating</b>  | 2,000 m     |
|                              | Storage   | 12,000 m    |
| EMC                          | EN 61326-1:2006   |             |
| Safety compliance            | IEC 61010-1, 600 V CAT IV/1000 V CAT III, 3rd edition                   |             |
| Safety rating                | CAT IV 600 V, CAT III 1000 V  |             |
| Certifications               | CSA, CE, FCC: T68-FBLE IC: 6627A-FBLE                                   |             |



|  |   |
|--|---|
| Ingress Protection (IP) rating           | IP42                                      |
| Pollution Degree                         | 2   |
| Jaw opening                              | 25.4 cm (10 in) coil                      |
| Size (H x W x D)                         | 16.5 x 6.35 x 1.4 cm (6.5 x 2.5 x 1.4 in) |
| Weight                                   | .22 kg (8 oz)                             |
| Warranty                                 | Three years                               |
| Not compatible with Fluke CNX test tools |   |

## Ordering information



### **FLK-Ti400 60HZ/FCA**

Fluke Ti400 a3001 FC iFlex® Kit

Includes:

Ti400 Infrared Camera

- AC power supply and battery pack charger (including mains adapters)
- Two, rugged lithium ion smart battery packs
- Micro SD memory card
- USB cable
- HDMI video cable
- SmartView® software available via free download
- Rugged, hard carrying case
- Soft transport bag
- Adjustable hand strap
- Warranty registration card
- International adapter set (9 Hz only)

3000 FC Series Wireless Multimeter

- Fluke 3000 FC Wireless Digital Multimeter with three (3) AA batteries (installed)
- One (1) a3001 FC Module with two (2) AA batteries (installed)
- One (1) iFlex 10" coil
- One (1) magnet/strap
- TL175 Test Leads (1 pair)
- AC175 Alligator Clips (1 pair)
- C3003 3-compartment soft case
- Information pack



### 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.
- Access baseline, historical and current measurements by asset.
- Move away from clipboards, notebooks and multiple spreadsheets with a wireless one-step measurement transfer.
- Share your measurement data using ShareLive™ video calls and emails.

Find out more at [flukeconnect.com](https://flukeconnect.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 5 GB of storage is free. Phone support details can be viewed at [fluke.com/phones](https://fluke.com/phones).

**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.®**

**Fluke Corporation**  
PO Box 9090, Everett, WA 98206 U.S.A.

**For more information call:**  
In the U.S.A. (800) 443-5853  
In Europe/M-East/Africa  
+31 (0)40 267 5100  
In Canada (800)-36-FLUKE  
From other countries +1 (425) 446-5500  
[www.fluke.com/en-th](https://www.fluke.com/en-th)

©2022 Fluke Corporation. Specifications subject to change without notice.  
01/2022

**Modification of this document is not permitted without written permission from Fluke Corporation.**