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TECHNICAL DATA

Fluke 279 FC True-rms Thermal Multimeter



4 ways the Fluke 279 FC will make your job easier

1. Find the problem faster

Scan with the thermal imager to find electrical problems rapidly and from a safe distance. Check hot spots on high-voltage equipment and transformers; identify heating of fuses, wires, insulators, connectors, splices and switches. The 279 FC now allows you to save, recall and review saved images on the meter. You'll be certain that you have the image you need before moving on.

2. Work in places you couldn't even reach before

The iFlex flexible ac current probe lets you work in tight, hard-to-reach spaces spots. Make accurate current measurements up to 2500 A ac, in spaces that would be impossible to reach with a conventional clamp.

3. Fix almost everything

The 279 FC is a full-featured, true-rms digital multimeter. All the basics you need in a DMM, plus advanced capabilities: motor drive (ASD) measurements, min/max recording, display hold and more. Safety rated 1000 V CAT III, 600 V CAT IV.

4. Find the next problem before it happens

With Fluke Connect, you can save and send all your measurements to the cloud. Compare readings with past measurements. Spot trends that indicate small problems before they become big trouble.



CAMERA

Built-in thermal imager

DISPLAY

Full-color LCD screen provides clean, crisp readings

iFLEX™ PROBE INCLUDED

Both 279 FC models include the iFlex flexible current probe. Get into tight, hard to reach spaces for measurements up to 2500 A ac.

FLUKE CONNECT

Transmit results wirelessly to your smartphone with Fluke Connect



Product highlights

- Full-featured multimeter with built-in thermal imager
- 15 measurement functions including: ac voltage with low-pass filter, dc voltage, resistance, continuity, capacitance, diode test, min/max/avg, ac current (with iFlex), frequency
- Thermal imaging reveals many electrical issues quickly and safely, eliminating the need for time-consuming testing and validation
- Two-in-one tool is designed to increase productivity—no need to go back to the truck or office to retrieve a shared camera or wait for the thermographer—do more in less time!
- iFlex expands your measurement capabilities—get into tight, hard to reach spaces for current measurement up to 2500 A ac.
- Save measurements and images while communicating wirelessly with a smart phone up to 20 feet (6.1m) away (no obstructions)
- Review saved images on the 279 FC before sharing with Fluke Connect. Save, delete, compare and share after viewing on the meter.
- Image resolution—102x77
- 3.5 in (8.89cm) color LCD screen
- Rechargeable lithium ion battery allows for a full work day (10+ hours) under normal conditions. FLUKE-279FC I/B model includes second battery; always have one in the meter, one in the charger.
- Assembled in the USA
- Three-year standard warranty
- Auto power off to save battery power
- CAT III 1000 V, CAT IV 600 V measurement category
- Optional accessories: Fluke i2500-10 or iFlex® Flexible Current Probes, Fluke BC500 AC Power Charger and Fluke BP500 Lithium-ion Battery 3000 mAh

Specifications

| AC voltage | | |
|---|---|------------|
| Range ¹ /resolution | 600.0 mV / 0.1 mV 6.000 V / 0.001 V 60.00 V / 0.01 V 600.0 V / 0.1 V 1000 V / 1 V | |
| Accuracy ^{2, 3, 4, 5} | 45 Hz to 65 Hz | 1.0 % + 3 |
| | 65 Hz to 200 Hz | 4.0 % + 3 |
| | 200 Hz to 500 Hz | 15 % + 3 |
| AC mV | | |
| Range ¹ /resolution | 600.0 mV / 0.1 mV | |
| Accuracy ^{2, 3, 4} | 45 Hz to 500 Hz | 1.0 % + 3 |
| ¹ AC voltage ranges are specified from 1 % of range to 100 % of range. | | |
| ² Crest factor of ≤ 3 at full scale up to 500 V, decreasing linearly to crest factor < 1.5 at 1000 V. | | |
| ³ For non-sinusoidal waveforms, add - (2 % of reading + 2 % full scale) typical, for crest factor up to 3. | | |
| ⁴ Do not exceed 10 ⁷ V-Hz. | | |
| ⁵ Full-time low pass filter | | |
| DC voltage | | |
| Range/resolution | 6.000 V / 0.001 V 60.00 V / 0.01 V 600.0 V / 0.1 V 1000 V / 1 V | |
| Accuracy | 6 V, 60 V, 600 V | 0.09 % + 2 |
| | 1000 V | 0.15 % + 2 |
| DC mV | | |
| Range/resolution | 600.0 mV / 0.1 mV | |
| Accuracy | 0.09 % + 2 | |
| Continuity | | |
| Range/resolution | 600 Ω / 1 Ω | |
| Accuracy | Meter beeps at < 25 Ω, beeper detects opens or shorts of 600 μs or longer | |

Detailed specifications (continued)

Resistance

| | | |
|------------------|--|-----------|
| Range/resolution | 600.0 Ω / 0.1 Ω 6.000 kΩ / 0.001 kΩ 60.00 kΩ / 0.01 kΩ 600.0 kΩ / 0.1 kΩ 6.000 MΩ / 0.001 MΩ 50.00 MΩ / 0.01 MΩ | |
| Accuracy | 600 Ω | 0.5 % + 2 |
| | 6 kΩ to 600 kΩ | 0.5 % + 1 |
| | 50 MΩ | 1.5 % + 3 |

Diode test

| | |
|------------------|-------------------|
| Range/resolution | 2.000 V / 0.001 V |
| Accuracy | 1 % + 2 |

Capacitance

| | | |
|------------------|--|--------------|
| Range/resolution | 1000 nF / 1 nF 10.00 μF / 0.01 μF 100.0 μF / 0.1 μF 9999 μF ¹ / 1 μF | |
| Accuracy | 1000 nF thru 100 μF | 1.2 % + 2 |
| | 9999 μF | 10 % typical |

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

AC current

| | | |
|------------------|--|-----------|
| Range/resolution | 999.9 A / 0.1 A 2500 A / 1 A (with iFlex) | |
| Accuracy | 45 Hz to 500 Hz | 3.0 % + 5 |

Frequency

| | |
|------------------|---|
| Range/resolution | 99.99 Hz / 0.01 Hz 999.9 Hz / 0.1 Hz |
| Accuracy | 0.1 % + 1 |

Input characteristics

| | | |
|------------------------|--|--------------------------------|
| AC voltage | Input impedance (nominal) | > 10 MΩ < 100 pF |
| | Common mode rejection ratio (1 kΩ unbalance) | > 60 dB, DC to 60 Hz |
| | Overload protection | 1100 V rms |
| DC voltage | Input impedance (nominal) | > 10 MΩ < 100 pF |
| | Common mode rejection ratio (1 kΩ unbalance) | > 120 dB at DC, 50 Hz or 60 Hz |
| | Normal mode rejection | > 60 dB at 50 Hz or 60 Hz |
| | Overload protection | 1100 V rms |
| AC mV/DC mV | Input impedance (nominal) | > 10 MΩ < 100 pF |
| | Common mode rejection ratio (1 kΩ unbalance) | > 120 dB at DC, 50 Hz or 60 Hz |
| | Normal mode rejection | > 60 dB at 50 Hz or 60 Hz |
| | Overload protection | 1100 V rms |
| Resistance/capacitance | Open circuit test voltage | < 2.7 V dc |
| | Full scale voltage to 6 MΩ | < 0.7 V dc |
| | Full scale voltage 50 MΩ | < 0.9 V dc |
| | Typical short circuit current | < 350 mA |
| | Overload protection | 1100 V rms |
| Continuity/diode test | Open circuit test voltage | < 2.7 V dc |
| | Full scale voltage | 2.000 V dc |
| | Typical short circuit current | < 1.1 mA |

Detailed specifications (continued)

| MIN/MAX recording accuracy | | |
|---|--|--|
| AC functions | 40 counts for changes > 900 ms in duration | |
| DC functions | 12 counts for changes > 350 ms in duration | |
| Infrared camera | | |
| Infrared camera temperature | Range | -10 °C to 200 °C (14 °F to 392 °F) |
| | Measurement resolution | 0.1 °C |
| | Temperature measurement | Yes, centerpoint |
| | Accuracy | ±5 °C or ±5 %, whichever is greater, at 25 °C (ambient) for target temperatures below 20 °C, add 0.05 °C for each °C |
| Image performance | Emissivity | 0.95 fixed |
| | Resolution | 102 x 77 |
| | Image capture frequency | 8 Hz |
| | Detector type | Uncooled vanadium oxide |
| | Thermal sensitivity (NETD) | ≤ 200 mK |
| | Infrared spectral band | 7.5 μm to 14 μm |
| | Distance to spot | 162:1 |
| | Field of view | 36° (w) x 27° (h) |
| Image presentation | Focus mechanism | Fixed focus |
| | Palette | Ironbow |
| Image capture and data storage | Level and span | Auto |
| | Image capture | Image available for review before a save |
| Image capture and data storage | Storage medium | Internal memory stores up to 100 images |
| | Image transfer | Fluke Connect® / SmartView® |
| | File format | is2 |
| | Display size | 8.9 cm (3.5 in) diagonal |
| General specifications | | |
| Maximum voltage between any terminal and earth ground | 1000 V | |
| Display (LCD) | Update rate | 4/sec |
| | Volts, amps, ohms | 6000 counts |
| | Frequency | 10000 counts |
| | Capacitance | 1000 counts |
| Battery type | Fluke BP500 lithium ion battery | |
| Battery life | 10 hours minimum | |
| RF communications | 2.4 GHZ ISM Band | |
| RF communication range | Open air, unobstructed | 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 | Operating | -10 °C to 50 °C (14 °F to 122 °F) |
| | Storage | -20 °C to 60 °C (-4 °F to 140 °F) |
| Temperature coefficient | 0.1 X (specified accuracy) / °C (< 18 °C or > 28 °C) | |

Detailed specifications (continued)

| | | |
|-------------------|---|---------|
| Relative humidity | 0 % to 90 % (0 °C to 35 °C) 0 % to 75 % (35 °C to 40 °C) 0 % to 45 % (40 °C to 50 °C) | |
| Altitude | Operating | 2000 m |
| | Storage | 12000 m |
| Certifications | CSA, FCC, CE | |
| Size (H x W x L) | 5.7 cm x 9.4 cm x 21.6 cm (2.3 in x 3.7 in x 8.5 in) | |
| Weight | 0.80 kg (1.75 lb) | |
| Warranty | Three years | |



Figure 1. Fluke 279 FC with the iFlex Flexible Current Probe



Figure 2. Fluke 279 FC/iFlex TRMS Thermal Multimeter Package Contents

Ordering information

279 FC/iFlex TRMS Thermal Multimeter

Includes 279 FC True-rms Thermal Multimeter, 18 in (45.72 cm) iFlex Flexible Current Probe, TL175 test leads, rechargeable lithium ion battery and charger, soft carrying case and hanging strap

FLUKE-279FC I/B Thermal Multimeter

Includes 279 FC True-rms Thermal Multimeter, 18 in (45.72 cm) iFlex Flexible Current Probe, TL175 test leads, two rechargeable lithium ion batteries and one charger, soft carrying case and hanging strap

Optional accessories

Fluke i2500-10 Fluke i2500-10 iFlex® Flexible Current Probe

Fluke BC500 Fluke BC500 AC Power Charger

Fluke BP500 Fluke BP500 Lithium-Ion Battery 3000 mAh battery

Fluke C280 Carrying Case

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