

TECHNICAL DATA

Fluke 279 FC Thermal Multimeter



Find. Repair. Validate. Report.

The 279 FC is a full-featured digital multimeter with integrated thermal imaging and is designed to increase your productivity and confidence. The thermal multimeter helps you find, repair, validate, and report many electrical issues quickly so that you are confident problems are solved.

Locate the problem immediately

Thermal imaging multimeters are a first-line troubleshooting tool for electrical equipment that can check hot spots on high-voltage equipment and transformers, detect heating of fuses, wires, insulators, connectors, splices and switches. Scanning with the 279 FC's thermal imager reveals many electrical issues rapidly and from a safe distance. By combining two tools into one, the thermal multimeter lightens the load and increases productivity.

Expanded functionality

Compatible with iFlex® (a flexible current clamp) to expand your measurement capabilities and get into tight, hard to reach spaces for current measurement (up to 2500 A AC). The large full-color LCD screen makes for easier and clearer viewing of images and readings. The 10 hour+ rechargeable battery keeps you going all day long under normal conditions.

Communicate your results

With built-in Fluke Connect®, transmit results wirelessly to a smartphone and save time on reporting to validate work is complete. Troubleshoot better by instantly trending and monitoring measurements live on your smartphone screen. Create and email reports right from the field.



CAMERA

Built-in thermal imager

DISPLAY

Full-color LCD screen provides clean, crisp readings

iFLEX®

Expand your measurement capabilities—get into tight, hard to reach spaces for current measurement (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)
- Designed for durability, built to withstand a 3 m (9.8ft) drop, double insulated with raised rubber holster for increased protection
- Save measurements and images while communicating wirelessly with a smart phone up to 20 feet/6.1 m away (no obstructions)
- Image resolution—80 x 60
- 3.5"/8.89 cm color LCD screen
- Rechargeable lithium ion battery allows for a full work day (10+ hours) under normal conditions
- 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 i2500-18 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 |

¹AC voltage ranges are specified from 1 % of range to 100 % of range.

²Crest factor of ≤ 3 at full scale up to 500 V, decreasing linearly to crest factor < 1.5 at 1000 V.

³For non-sinusoidal waveforms, add - (2 % of reading + 2 % full scale) typical, for crest factor up to 3.

⁴Do not exceed 10⁷ V-Hz.

⁵Full-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 $< 25 \Omega$, 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 |
| ¹ In 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 % (as tested at 25 °C, whichever is greater) |
| | Emissivity | 0.95 fixed |
| Image performance | Resolution | 80 x 60 |
| | 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) |
| | Focus mechanism | Fixed focus |
| | Image presentation | Palette |
| Level and span | | Auto |
| Image capture and data storage | Image capture | Image available for review before a save |
| | 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) | |
| 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 |

Detailed specifications (continued)

| | |
|------------------|--|
| 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 Kit

Ordering information

279 FC TRMS Thermal Multimeter

Includes 279 FC TRMS Thermal Multimeter, TL75 Test Leads, rechargeable lithium ion battery and charger

279 FC/iFlex TRMS Thermal Multimeter

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

Optional accessories

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

Fluke i2500-18 Fluke i2500-18 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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