

Fluke 324 True-rms Clamp Meter, IRR1-SOL Irradiance Meter and MC4 Test Leads Ideal for technicians working residential or light commercial PV systems

The 324 True-RMS Clamp Meter is an ideal clamp meter for solar photovoltaic (PV) installation technicians working on residential or light commercial systems. Safely connect the MC4 test leads to the clamp meter to validate voltage and current from individual panels or a series of panels in a PV array. Use the IRR1-SOL to obtain the amount of solar irradiance necessary to calculate the IV curve of the power output. Validate that the panel or string of panels are outputting the correct voltage.



Features

324 Clamp Meter

- Rugged, reliable basic True-RMS clamp meter
- Measure AC current up to 400 A, AC/DC voltage to 600V
- Measure resistance up to 4k Ω , continuity detection $\leq 30\Omega$
- Additions from 323 Clamp: Temperature, Capacitance, Backlight

IRR1-SOL Irradiance Meter

- Measure solar irradiance, ambient and PV module temperature, array orientation and tilt angles
- Make instantaneous measurements to determine the watts per square meter solar irradiation, required by IEC 62446-1 standard
- High contrast LCD with large numbers for easy readability in direct sunlight
- Includes convenient carry case with shoulder strap

Pomona MC4 Leads

- Allow for connections to test tools that accept 4mm banana plugs
- Ensures safe current and voltage measurements on PV modules and systems
- For use in regular tests and measurements on PV panels
- Connect measuring devices to PV power station, to set and troubleshoot PV panels
- Complies to CAT III 1000V / CAT IV 600V, 20A ratings in accordance to IEC / EN 61010-031

Included with Product

- 324 True-RMS Clamp Meter
- (1 pair) TL75 Test Leads
- Type K Thermocouple
- Two AAA Batteries (Installed)
- Soft Case
- Quick Reference Guide
- FLK-IRR1-SOL Solar Irradiance Meter
- FLK80PR-IRR External Temperature Probe with Suction Cup
- C250 Carrying Case with Shoulder Strap
- (4) AA Alkaline Batteries (installed)
- User Manual
- Pomona PVLEAD1 MC4 to 4 mm Test Lead Set

Basic Product Specifications

| 324 Clamp Meter General Specifications | |
|--|--|
| AC Current | |
| Range | 40.00 A / 400.0 A |
| Accuracy | 1.5% ± 5 digits (45 Hz to 400 Hz) Note: Add 2% for position sensitivity |
| AC Voltage | |
| Range | 600.0 V |
| Accuracy | 1.5% ± 5 digits |
| DC Voltage | |
| Range | 600.0 V |
| Accuracy | 1.0% ± 5 digits |
| Resistance | |

| | |
|----------------------------------|--|
| Range | 400.0 Ω / 4000 Ω |
| Accuracy | 1.0% \pm 5 digits |
| Additional Specifications | |
| Continuity | \leq 30 Ω |
| Capacitance | 0 to 100.0 μ F / 100 μ F to 1000 μ F |
| AC response | True-RMS |
| Backlight | Yes |
| Data hold | Yes |
| Contact temperature | -10.0 $^{\circ}$ C to 400.0 $^{\circ}$ C (14.0 $^{\circ}$ F to 752.0 $^{\circ}$ F) |
| H x W x D | 207 x 75 x 34 mm |
| Max wire diameter | 30 mm (600 MCM) |
| Weight | 208 g |
| Category rating | CAT III 600 V CAT IV 300 V |
| Warranty | Two-year |

| IRR1-SOL Irradiance Meter General Specifications | |
|--|---|
| Irradiance | |
| Measuring Range | 0 to 1400 W/m ² |
| Resolution | 1 W/m ² |
| Measuring Accuracy | \pm (5 % + 5 Digit) |
| Temperature Measurement | |
| Measuring Range | -22 $^{\circ}$ F to 212 $^{\circ}$ F (-30 $^{\circ}$ C to 100 $^{\circ}$ C) |
| Resolution | 0.2 $^{\circ}$ F (0.1 $^{\circ}$ C) / 1 $^{\circ}$ F @>100 $^{\circ}$ F |
| Measuring Accuracy | \pm 2 $^{\circ}$ F (\pm 1 $^{\circ}$ C) @ 14 $^{\circ}$ F to 167 $^{\circ}$ F (-10 $^{\circ}$ C to 75 $^{\circ}$ C), \pm 4 $^{\circ}$ F (\pm 2 $^{\circ}$ C) @ -22 $^{\circ}$ F to 14 $^{\circ}$ F (-30 $^{\circ}$ C to -10 $^{\circ}$ C) and 167 $^{\circ}$ F to 212 $^{\circ}$ F (75 $^{\circ}$ C to 100 $^{\circ}$ C) |
| <i>Note: Temperature measurement response time: ~30 sec.</i> | |
| Inclination Angle | |
| Measuring Range | -90 $^{\circ}$ to +90 $^{\circ}$ |
| Resolution | 0.1 $^{\circ}$ |
| Measuring Accuracy | \pm 1.5 $^{\circ}$ @ -50 $^{\circ}$ to +50 $^{\circ}$, \pm 2.5 $^{\circ}$ @ -85 $^{\circ}$ to -50 $^{\circ}$ and +50 $^{\circ}$ to +85 $^{\circ}$, \pm 3.5 $^{\circ}$ @ -90 $^{\circ}$ to -85 $^{\circ}$ and +85 $^{\circ}$ to +90 $^{\circ}$ |
| Compass | |
| Measuring Range | 0 $^{\circ}$ to 360 $^{\circ}$ |
| Resolution | 1 $^{\circ}$ |
| Measuring Accuracy | \pm 7 $^{\circ}$ |
| <i>Note:</i> a) Measurements valid for device inclination between -20 $^{\circ}$ and +20 $^{\circ}$ to horizontal. Outside that range on LCD will be shown "---". b) Result is referred to magnetic north. | |
| Temperature | |
| Operating Temperature IRR1-SOL | -20 $^{\circ}$ C to 50 $^{\circ}$ C (humidity <80%), noncondensing |
| Operating Temperature 80PR-IRR | -30 $^{\circ}$ C to +100 $^{\circ}$ C |
| Storage Temperature | -30 $^{\circ}$ C to 60 $^{\circ}$ C (humidity <80%) |
| Altitude | 0 m to max. 2000 m |
| Electromagnetic Compatibility (EMC) | |

| | |
|--|---|
| International | IEC 61326-1: Portable Electromagnetic Environment CISPR 11: Group 1, Class A Group 1: Equipment has intentionally generated and/or uses conductively-coupled radio frequency energy that is necessary for radio frequency energy that is necessary for the internal function of the equipment itself. Class A: Equipment is suitable for use in all establishments other than domestic and those directly connected to a low voltage power supply network that supplies buildings used for domestic purposes. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted and radiated disturbances. Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments. |
| Korea (KCC) | Class A Equipment (Industrial Broadcasting & Communication Equipment) Class A: Equipment meets requirements for industrial electromagnetic wave equipment and the seller or user should take notice of it. This equipment is intended for use in business environments and not to be used in homes. |
| USA (FCC) | 47 CFR 15 subpart B. This product is considered an exempt device per clause 15.103. |
| Protection | |
| IP Protection | IP40 |
| Power Supply & Battery Life | |
| Batteries | 4 AA Alkaline Batteries |
| Battery Life (typical) | 50 hours (≤9000 readings) |
| Auto Power Off | 30 minutes |
| Dimensions | |
| L x W x H | 5.90 x 3.14 x 1.37 in (150 x 80 x 35 mm) |
| Weight | 0.5 lb (231 g) |

| PVLEAD1 MC4 Solar Clamp Test Lead Set General Specifications | |
|---|----------------------------|
| Contact | Brass, Nickel Plated |
| Length | 60" |
| Voltage | CAT III 1000V, CAT IV 600V |
| Current | 20 amp |
| Standards | IEC 61010-031 |