PV200

Solar PV tester and I-V curve tracer

The PV200 provides a highly efficient and effective test and diagnostic solution for PV systems, carrying out all commissioning tests required by IEC 62446 and performing fast and accurate measurement of I-V curves in accordance with IEC 61829. When used in conjunction with the Solar Survey 200R irradiance meter, the PV200 measurement data can be converted to STC, using either the PVMobile app or SolarCert Elements software, allowing direct comparison with the PV module manufacturer's published data.

With direct connection to individual PV modules or strings using the supplied lead sets, tests can be conducted easily and within a matter of seconds at the press of a single button.

A high contrast display is clearly visible in direct sunlight and shows open circuit voltage, short circuit current, maximum power point voltage, current and power, as well as the fill factor of the PV module or system under test, and insulation resistance (as part of an auto sequence or a discrete probe to probe measurement). If the measured curve deviates from the expected profile, the PV200 alerts the user to this, identifying the need for further analysis.

Detailed and colour I-V and power curves, can be viewed instantly once data is transferred to the PVMobile Android app using wireless NFC connectivity. PVMobile displays measured I-V and power curves for visual analysis of the curve shape, enabling common problems such as shading, defective cells or poor electrical connections to be identified.

Key Features
- Lightweight, handheld and fast
- Affordable and efficient PV diagnostic tool
- Easy and fast push button operation
- All-in-one commissioning tests and I-V curve tracing, in accordance with international standards IEC 62446: 2016 and IEC 61829: 2015
- Instantly view detailed I-V curves in the field using the PVMobile Android app
- Convert I-V curve measurements to STC using the PVMobile app or SolarCert Elements software
- Instantly send PDF reports from the field back to the office using the PVMobile Android app
- Tests individual PV modules or strings
- Clear results display, even in direct sunlight
- Wirelessly receives irradiance and temperature measurements from Solar Survey 200R
- Full traceability of system performance
- Compatible with SolarCert Elements v2 software

Electrical/Analysis Test Functions
- I-V curve tracing, in accordance with IEC 61829
- Earth/earth continuity
- Insulation resistance (auto short circuit test and point-to-point)
- AC/DC voltage measurement
- Open circuit voltage up to 1000VDC
- Maximum power point voltage up to 1000VDC
- Short circuit current up to 15ADC
- Maximum power point current up to 15ADC
- Automatic fill factor calculation
- Operating current (using supplied current clamp) up to 40A
- DC power up to 40kW

PV200 Users
- PV system installers
- PV O&M technicians
- PV module manufacturers

Download the FREE PVMobile Android app

ANDROID APP ON
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▶ Cost effective and efficient PV diagnostic tool

Comprehensive measurement features with easy-to-use one button testing provides the ideal solution for periodic testing, performance analysis and fault diagnosis.

▶ All-in-one commissioning tests and I-V curve tracing

Easily carry out all performance, safety and diagnostic checks on PV systems using the same fast and simple test instrument.

▶ Easy and fast push button operation

The PV200 offers an extremely fast testing solution, carrying out all commissioning tests in a matter of seconds, for straightforward and hassle free testing of even the largest of PV systems.

▶ Tests individual PV modules or strings

Directly connect the PV200 to an individual module or a full string, and choose whether to carry out a full auto sequence test or an individual test, depending on your requirements.

▶ Clear results display, even in direct sunlight

The PV200 display screen is clearly visible even in direct sunlight, ensuring you are able to complete the testing process in the fastest time possible, and view measurements at a glance.

▶ Wirelessly receive irradiance and temperature measurements from Solar Survey 200R

Using Seaward Solarlink™ connectivity, the PV200 can wirelessly capture and record real-time irradiance, ambient temperature and PV module temperature measurements from the Solar Survey 200R multifunction irradiance meter (available as part of the Solarlink™ Test Kit). This means that all measurements can be recorded simultaneously, as required by the IEC 62446 and IEC 61829 standards.

▶ Full traceability of system performance

The PV200 has a large onboard memory which stores up to 999 sets of PV test and diagnostic data, ensuring large systems can be tested continuously, and enabling test data to be downloaded to a PC, in CSV format, for full traceability.

▶ Compatible with SolarCert Elements v2 software

When used with the optional SolarCert Elements v2 software program, test and measurement data can be stored alongside other system information to produce comprehensive records. Measured data can be converted to STC for comparison with manufacturer's data held in the comprehensive database. In addition, professional inspection and test reports can be prepared, including IEC 62446 measurements and IEC 61829 I-V curve plots.

SEAWARD

What's in the box?		Part Number
PV200 is supplied, as standard, with: ■ PV200 PV tester and I-V curve tracer ■ AC/DC current clamp ■ 2 x MC4 test lead (red & black) ■ 2 x 1.5m 4mm test leads/probes + alligator clips ■ Type A to mini B USB cable ■ 6 x alkaline battery (AA) 1.5V ■ Quick Start Guide ■ Rugged carry bag ■ PV200 Calibration Certificate Download link for entry level PC datalogger software, operating instructions, USB driver for download to PC and SolarCert Elements v2 software demo		389A910
A PV200 Solarlink™ Test Kit is also available: ■ PV200 PV tester and I-V curve tracer ■ Survey 200R multi-function irradiance meter with suction mount PV module temperature sensor and mounting bracket ■ SolarCert Elements v2 software ■ AC/DC current clamp ■ 2 x MC4 test lead (red & black) ■ 2 x 1.5m 4mm test leads/probes + alligator clips ■ Type A to mini B USB cable ■ 6 x alkaline battery (AA) 1.5V ■ Quick Start Guide ■ Rugged carry bag ■ PV200 Calibration Certificate Download link for entry level PC datalogger software, operating instructions, USB driver for download to PC		389A915 (available without software 389A918)

Optional Accessories

Survey 200R irradiance meter with suction mount PV module temperature sensor (433MHz) (396A914)*	Suction mount PV module temperature sensor for Solar Survey 200R (396A980)	SolarCert Elements test reporting & certification v2 software (389A950)	MC4 to test probe test leads (red & black) (388A953)
	Solar Survey mounting bracket (396A979)		Fused test leads – 1 pair of fused red and black test probes and alligator clips (44B075)
MC3 test lead adaptors (396A958)	**Solar power clamp (396A961)**	**SolarTag PV installation / DC warning labels (396A952 / 396A953)**	**Sunclix test lead adaptors (396A960)**
PV inspection report pad (396A954)	**PV array report pad (396A955)**	**PV verification certificate pad (396A956)**	**Pack of 3 PV test reports and certificate pads (396A957)**
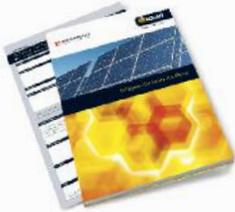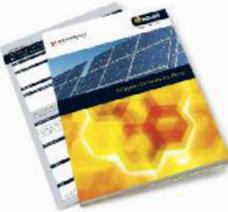
Technical Specifications

Earth continuity / resistance measurement

Display range	0.00 to 199Ω
Measurement range	0.01 to 199Ω
Accuracy	±(2% rdg + 5d)
Resolution	0.01Ω maximum
Open circuit test voltage	4VDC, nominal
Test leads zero	Zero up to 10Ω, by Zero button
Number of measurements	5,000 x 1 second tests
Audible / visible warning	≥ 30VAC/DC at inputs
User protection	Test inhibited if ≥ 30VAC/DC at inputs

Insulation resistance (auto short circuit test)

Display range	0.05 - 200MΩ
Measurement range	0.05 - 200MΩ
Accuracy	±(5% rdg + 5d)
	0.05 - 100MΩ
	±(10% rdg + 5d)
	101 - 200MΩ
Resolution	0.01MΩ maximum
Open circuit test voltage	250, 500, 1000V
	(as per IEC 61557-2)
Test current	1mA nominal as per IEC 61557-2
Short circuit test current	<2mA
Number of measurements	5,000 x 1 second tests
Audible / visible warning	≥ 30VAC/DC at inputs
User protection	Test inhibited if ≥ 30VAC/DC at inputs

Insulation resistance (point to point)

Display range	0.05 to 300MΩ
Measurement range	0.05 to 300MΩ
Accuracy	±(5% rdg + 5d)
Resolution	0.01MΩ maximum
Open circuit test voltage	250, 500, 1000V
	(as per IEC 61557-2)
Short circuit test current	<1mA
Number of measurements	5,000 x 1 second tests
Audible / visible warning	≥ 30VAC/DC at inputs
Circuitry protection	Test inhibited if ≥ 30VAC/DC at inputs

Voltage measurement (via 4mm probes)

Display range	30V – 440VAC/DC
Measurement range	30V – 440VAC/DC
Resolution	1V
Accuracy	±(5% rdg + 2d)

Vo/c voltage measurement (via PV test leads)

Display range	0.0V – 1000VDC
Measurement range	5.0V – 1000VDC
Resolution	0.1V
Accuracy	±(0.5% rdg + 2d)
Enunciators	DC voltage polarity correct or reversed

Is/c current measurement (via PV test leads)

Display range	0.0A – 15.0ADC
Measurement range	0.5A – 15.0ADC
Resolution	0.1A
Accuracy	±(1% rdg + 2d)

Operating current (via DC current clamp)

Display range	0.0A – 40.0A AC/DC
Measurement range	0.1A – 40.0A AC/DC
Resolution	0.1A
Accuracy	±(5% rdg + 2d)

DC power

Display range	0.0W – 40.0kW
Measurement range	10W – 40.0kW
Resolution	10W max
Accuracy	±(6% rdg + 2d)

I-V curve

Maximum power dissipation	10kW
Number of points	Dynamic up to 128
MPP calculation max error	±(1.5% rdg + 40w)

Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

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