

# E-1500

Smart I-V curve tracer  
**Entec Solar**

**The fastest I-V curve tracer on the market, now up to 1,500V and 35A.**

Drastically reduce the time spent on O&M, commissioning, and quality control with Entec Solar's E-1500 I-V curve tracer. And all while maintaining the highest standards of measurement accuracy.



**NEW PRODUCT**

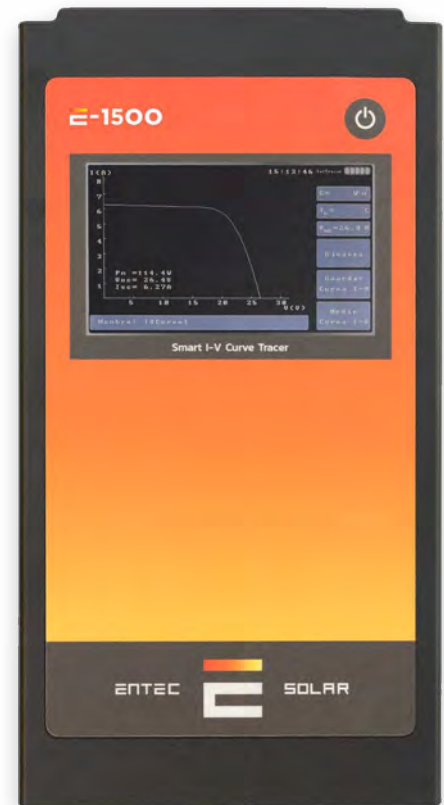


# I-V curve tracer, E-1500

With Entec Solar's goal of creating hardware tools to make people's work easier, the E-1500 curve tracer has been developed. The E-1500 has been designed in collaboration with QPV ([www.qpv.es](http://www.qpv.es)), a company specialized in audits and quality control of large photovoltaic power plants, which has exposed the current needs in the measurement of I-V curves in the field. The combination of Entec's hardware development experience and QPV's I-V curve measurement expertise has produced the fastest and most innovative I-V curve tracer on the market, with unmatched measurement accuracy.

This high precision instrument allows the measurement of up to 200 I-V curves per hour of work, either photovoltaic modules or strings up to 1500V and 35A. It also incorporates several new features such as: a barcode reader for automatic identification of the module under test and its position in the installation, an automatic report generation tool to reduce processing hours, an automatic measurement option to free the operator's hands during the connection and disconnection of the panels to be measured, a wireless sensor (E-Sens) with a communication range of up to 2km to measure radiation and temperature conditions, a cell phone application to control the device remotely, and many more options that will change the way you conduct your I-V curve measurement campaigns.

In addition, through a WiFi connection, the E-1500 synchronizes with PVET@ servers ([www.pvet.es](http://www.pvet.es)), facilitating the post-processing of measurement campaigns, storing all historical measurements, and allowing intercomparisons and cross-checking of data for fault diagnosis in your plants.



## Main features

- The fastest curve tracer on the market. It can measure up to 200 curves per hour.
- Unmatched accuracy of 0.5% at the maximum power point and less than 3% in the final result under standard measurement conditions (CEM).
- 3% in the final result under standard measurement conditions (EMC). A 4-point measurement for improved accuracy and avoidance of voltage drop errors in the cabling.
- Records in the same file the measurement data and the bar code of the module under test with the bar code reader accessory.
- Reduced device dimensions and weight for easy handling.
- Automatic measurement and transport backpack option to keep your hands free during measurements and enhance the working pace.
- Measures I-V curves of modules or strings up to 1500V and 35A according to the IEC-61829 standard. IEC-61829.
- Automatic extrapolation of curves to EMC using E-Sens, equipped with wireless communication up to 2 kilometers, according to IEC-60891.
- Versatile and configurable measurement of radiation and cell temperature conditions by means of E-Sens, i.e. standard reference cell, calibrated modules, PT-1000.
- Display and control via color touch screen or cell phone application.



## E-1500 Specifications

Input voltage range	0-1500V
Input current range	0.1-20A (up to 35A optional)
Precision	$\pm 0.3\%$ $\pm 2$ digits (voltage and current) $\pm 0.5\%$ $\pm 0,1W$ (power)
Resolution	22.5mV 0.5mA
Measurement time	30-200ms (typical)
Measurement cycle time	$\leq 3$ sg
Quantity of points measured per curve	200
Operation temperature	-10 to +65°C
Battery duration	10 hours in continuous operation. (More than 2000 curves I-V)
Dimensions	310x180x55mm
Weight	2.3 kg
Protections	Over-voltage, over-current and reverse polarity
Data storage and format	SD card 12KB per curve I-V in .csv format
Electrical security	CAT II- 1000V, EN-61010-1
Standards	Curve measurement I-V according to IEC-61829 Extrapolation to CEM according to IEC-60891
Warranty	2 years on product failure

## E-Sens Specifications

Inputs	1 x irradiance measurement 1 x PT1000 per irradiance cell Additional 3 x PT1000
Accuracy of voltage measurement	$\pm 0.3\%$
Accuracy of temperature measurement	$\pm 0.3^{\circ}C$ . Class B
Resolution	0.45mV for the 60V channel 0.015mV for the 2V channel
Measurement interval	1 second for the irradiance channel 2 seconds for all other channels
Wireless range	Several hundred meters and up to 2 km
Wireless frequency	433MHz, (915Mhz for E.E.U.U.)
Operation temperature	-10 to +65°C
Battery duration	15 hours of operation
Dimensions	195x95x29mm
Weight	265 grams
Protections	Over-voltage and reverse polarity
Data storage and format	Micro-SD card
Electrical security	EN-61010-1
Guarantee	2 years on product failure



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“Innovative technological developments for the photovoltaic solar energy industry”

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