

PVPM 2540X (250VDC, 40ADC, 10kW)

Peak Power Measuring Device and IV-Curve Tracer For Photovoltaic Generators

Our performance recommendation for high performance single module measurements or smaller PV-strings.

The PVPM series devices enable the measurement of the I-V curve of photovoltaic modules and strings. Using a patented method, the device can directly calculate and display key values such as peak power, series resistance (Rs), and parallel resistance (Rp) based on the measured I-V curve, right at the installation site.

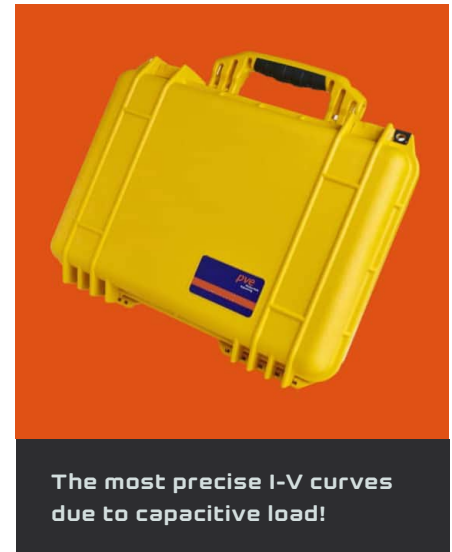
Powered by a patented method developed in collaboration with the University of Applied Sciences in Dortmund, the PVPM 2540X simplifies what was once a complex lab process – making it accessible anywhere, anytime.

With the PVPM 2540X, you instantly know:

- Assess module and string performance on-site
- Identify defects, shading, or degradation affecting output
- Decide if cleaning, replacement, or further investigation is needed

No additional equipment is required, and data is easily transferred to a PC via a standard USB interface.

Its intuitive, menu-driven interface ensures that it's simple to use, even without prior training.



The PVE Advantage

Precise & Fast Measurements:

- Accurate I-V curve measurement using capacitive load – ideal for detailed, reliable analysis
- Continuous measurement with freely adjustable time intervals via additional PC software

Comprehensive Data Management:

- Integrated module and customer/project databases for quick reference and organized workflows
- Isolated USB interface for secure data transfer and in-depth PC analysis
- Powerful PC software for analysis, auto-reporting, export functions, and project tracking

Intuitive & Field-Ready:

- Intuitive touchscreen operation paired with a high-contrast, high-resolution color TFT display
- Rugged and durable, with a waterproof plastic housing and full sealing against dust, water, and dirt
- Housed in a military-grade PELI™ case for extra protection on the field



Full scope of delivery:

Delivered including calibrated irradiance sensor, temperature sensor, all required cables, alligator clips, test probes...



Built to Be Different

Built for High Performance:

- Supports a wide range of modules – handles up to 250 V & 40 A
- Built-in safety features including an external load disconnect switch
- Highly flexible – works with a variety of sensors (M&T, NES, ISET...) for mono- and polycrystalline modules

Reliable & Future-Proof:

- Integrated 32-bit industrial-grade miniature PC and internal Li-Ion battery with integrated charge controller
- External wide-range power adapter (100–240 V) for global operation, offering both charging and continuous operation with Europlug to C7
- Modular design and short lead times thanks to optimized supply chains
- Made in Germany – developed and manufactured to the highest standards, backed by fast, reliable support and comprehensive service

Technical Data (subject to change)

HOUSING:

The PVPM 2540X is protected by a sturdy, military-grade PELI™ case – watertight, crushproof, and dustproof (IP67 when closed). It features easy-open double-step latches, an automatic pressure equalization valve, and a comfortable, rubber-coated handle for safe transport. The durable plastic foil front plate provides easy access to all connectors, which are conveniently arranged and fully accessible from the front.

MEASUREMENT AND EVALUATION UNIT:

- **Industrial-grade embedded PC** with 512 MB flash storage – holds thousands of measurements
- **No moving parts** – no fans, no hard drives, no mechanical failure points
- **High-speed data acquisition:** Sampling rate up to 100kHz / 12-bit resolution for accurate signal capture
- **Measurement accuracy:** Better than 1% for IV curve / $\pm 5\%$ for peak power (Ppk)
- **4-wire (Kelvin) measurement** – minimizes voltage drop errors and ensures precise readings
- **Fast measurement cycle:** 0.02 to 2 seconds per IV curve (100 data points)
- **Reference sensor with integrated Pt1000** – measures both irradiance and temperature
- **Module temperature measurement** via sensor on the rear side
- **Compatible with third-party reference sensors** (e.g. Fraunhofer ISE models – see price list)

Measuring Ranges	Voltage [VDC]	Current [ADC]	Temperature [°C]	Irradiance [W/m ²]
PVPM2540X	25 / 50 / 100 / 250	2 / 5 / 10 / 40	-40°C - +120°C with Pt1000	0 - 1300 (Standard Sensor)

Flexible measuring ranges: Voltage and current ranges can be freely combined

Automatic range selection: The device selects the optimal measuring range for each test

DISPLAY:

- Easy to read color TFT touchscreen even in bright outdoor conditions
- LED backlight, high contrast
- Resolution: 480 × 272 pixels

POWER SUPPLY:

- **Li-Ion battery:** 11.25 V / 8.8 Ah / 99.6 Wh, up to 8 h continuous operation, flight approved
- **External power adapter:** 90–264 V AC, 47–63 Hz, 40 W, UL-approved
- **Charging:** Internal auto charge controller with overcharge protection
- **Status display:** LED charge indicator on front panel
- **Mains mode:** Continuous operation during charging

OPERATION:

- Intuitive touch menu for direct control via the integrated display
- Optional PC operation using MS-Windows® software
- Full measurement control and analysis via isolated USB connection

DIMENSIONS:

→ Width: 40.6cm, height: 17.5cm, depth: 33cm, weight: about 8kg

OPERATING CONDITIONS

	Temperature	Humidity
Operation	0°C to 50°C	10% to 90% (non-condensing)
Storage	-10°C to 85°C	5% to 95%

max. height of use 2000m (6562ft) above sea level

SCOPE OF SUPPLY

- Measuring device in PELI® case (impact-resistant, IP67 closed)
- 10 m 4-wire measuring cable with MC4 connectors
- LTSX safety switch (min. 1000 VDC)
- Monocryst. irradiance sensor with clamp holder, Pt1000, 10m cable
- Module temperature sensor (PT100, Tmod)
- Aluminum accessory case or optional PVE backpack
- External charger (90–264 V AC) & USB cable
- Test probes, crocodile clips, MC4 release tool
- Control software for MS Windows® XP–11
- Printed manual & calibration certificates

OPTIONALLY AVAILABLE

- Individually adapted test leads and extension cables
- Calibrated irradiance reference Sensors for several module technologies (e.g. polycrystalline)

WARRANTY

- Warranty according to our General Terms and Conditions; limited to manufacturing and material defects.