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Outdoor Dual-Channel PV Module I-V Curve Tracer

SolarIV Pro X5

Professional I-V / P-V Curve Tracing and Performance Evaluation

Objectively present the true performance of PV modules from different manufacturers, batches, and technology routes;
One-stop evaluation for distributors, O&M, quality inspection and third-party institutions across all scenarios.

1 W/m²
IV data acquisition at 1 W/m² irradiance

2 Channels
Dual-channel sync & cross testing

3s Test
Results in as fast as 3 seconds

4 Modes
Four power tracking control modes

5 Dimensions
Comprehensive 5D performance evaluation

01 Dual-Channel Synchronous Comparison Test

Simultaneous measurement of two modules enables real-time performance comparison under identical conditions. Precise I-V & P-V curves are plotted in real time for multi-dimensional performance data fusion.

02 Fully Automatic Cross Testing

Automatic internal channel switching eliminates manual cable changes and improves test accuracy.

The system automatically links and fully retains module IDs, channel assignments and raw records from every round, ensuring data integrity and traceability throughout the workflow.

03 Task-Based & Conditional Auto Testing

Customize time series, sampling intervals, irradiance and other trigger thresholds; configure synchronous or cross-test schemes. Standalone operation, multi-device networking and detachable mobile control for offline use.

04 One-Click Data Report Generation

Closed-loop linking of module IDs, image assets and test records ensures data authenticity and integrity. Built-in filtering, statistics and multi-dimensional trend comparison enable one-click bilingual (CN/EN) reports.

Region: China V202611
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Technical Specifications

Electrical Input	Max power Pmax ≤ 800 W; open-circuit voltage Voc ≤ 75 V; short-circuit current Isc ≤ 20 A
Input Range	Current 0–20 A; voltage 0–75 V
Accuracy	Voltage ±(0.5% reading + 0.05 V); current ±(0.5% reading + 0.05 A); power ±(0.5% reading + 0.5 W)
Sampling Points	100 / 200 / 300 / 400 / 500 points (per channel, per cycle)[1]
Sampling Time	Sync mode: 1–5 s; cross mode: approx. 2–10 s (2 cycles), ultra-fast evaluation
Default Eval.	100-point cross test by default; results in approx. 3 s
Parameters	Voc / Isc / Vmp / Imp / Pmax / FF; charts: I-V & P-V curves

Hardware Parameters

Display / Storage	8.8-inch IPS capacitive touchscreen (1920×480 HD); 32 GB SD card included (expandable)
Power Supply	12 V/1 A power adapter; supports power banks (5 V, ≥2 A)
External UPS[2]	12 V output / 10,000 mAh (LFP; ~10 h runtime; dedicated 12 V port shared with the adapter)
Connectivity	RS485 / GPS / Wi-Fi
Interfaces	XT60 (XT60-to-MC4 cable included); Type-C; 4-pin RS485
Size & Weight	270 × 260 × 85 mm; approx. 4.5 kg (including external UPS)
Operating Temp.	−20 to +45 °C

Software System

Platform	Android app / mini program; Wi-Fi / Type-C for tablet & phone; standalone onboard screen
Seven Modules	Project management, test records, data analysis, report management, parameter settings, module library, device management
Data & Reports	Raw I-V, CSV, Excel, PDF; bilingual (CN/EN) reports at module / analysis / project levels; built-in BI
Analytics	Visualization algorithms; precise Pmax energy-yield calculation; high-accuracy eSTC performance estimation[3]

Configuration Instructions

Standard Kit	Main unit ×1, PV cables ×2, power adapter ×1, external UPS ×1, stand ×1, user manual ×1
Hukx SR05-D1A3[4]	Optional irradiance meter (RS485 / Modbus RTU; 0–2000 W/m²; resolution 1 W/m²; accuracy ±5%)

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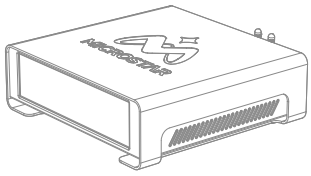

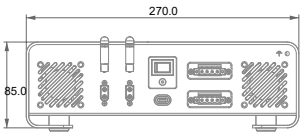

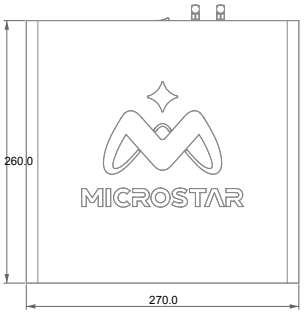

[1] One test point per 10 ms; 100 points take 1 s.

[2] The ~10 h runtime of the 10,000 mAh UPS is measured under typical conditions; actual runtime depends on use.

[3] eSTC is estimated from reference module, irradiance meter and ambient temperature — not laboratory STC data; for reference only.

[4] Irradiance meter resolution and accuracy are per manufacturer data supplied by the customer; pending verification.



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