QuickSun® 600Lab

All-in-one module testing station designed for PV laboratories

- ✓ I-V measurement and EL inspection within seconds with minimal module handling
- ✓ The most cost-effective solution for state-of-the-art inspection tools
- ✓ Class A+A+A+ solar simulator with continuous 300–1200 nm Xenon spectrum
- ✓ By far the most compact solution for I-V and EL on the market
- ✓ HJT, bifacial, frameless, custom dimensions... You can test them all

Endeas

has delivered over 550 QuickSun systems to photovoltaic module and cell factories and laboratories since 2001. We satisfy our customers' needs with precise, dependable, user-friendly equipment and expert support. Our innovativity and trustworthiness are both enabled by a profound understanding of PV measurement technology.

QuickSun 600Lab establishes a completely new product class for PV module laboratories – Class A+A+A+ solar simulator and high resolution EL inspection as a single table top system. The size of the system is comparable to the most compact solar simulators or EL inspection tools on the market – with the exception that QuickSun 600Lab includes them both! Just slide the module in and connect the cables, and the system provides both the I-V characteristics and EL image within seconds – ready for automatic reporting or further analysis.

Proven, future-proof solar simulator

With the A+A+A+ classification, continuous 300–1200 nm Xenon spectrum and P_{max} repeatability of less than 0.1%, the measurements are highly reliable. High-efficiency PV technologies, such as HJT and TOPCon, are accurately measured with the trusted Capacitance Compensation (CAC) method which was published at the 35th EU PVSEC 2018 conference and has swiftly started to be adopted by the industry.

High-resolution EL inspection

High-quality EL images are acquired within seconds by a static camera setup. The EL image is captured after I-V measurement without any additional work required by the operator.

Optional features

The system can be equipped with capabilities for temperature coefficient, hipot, ground bond and bypass diode measurements. Further customization is available on request.

Key Characteristics

GENERAL

Footprint, weight	320 x 203 cm, 700 kg
Module dimensions	Maximum 105 x 205 cm, quickly adjustable to smaller sizes
Measurement time	< 5 seconds (typical, including IV measurement and EL inspection)
Cycle time	10 seconds
Contacting	Manual contacting to module cables (other options available on request)
Operating temperature	15 – 35 °C

SOLAR SIMULATOR

P_{max} repeatability	Std. < 0.1 %
Irradiance non-uniformity	Class A+, < 1 %
Spectrum	Class A+, 300 – 1200 nm continuous Xenon spectrum
Long-term instability (LTI)	Class A+, < 1 %
Lamp changeover interval	500 000 measurements (average)
Bifacial measurement	Single-side or both sides separately, reflections eliminated
High-capacitance modules	Capacitive effects eliminated with the Capacitance Compensation (CAC) method
Irradiance range	200 – 1200 W/m²
Voltage measurement	1 – 100 V, accuracy < 0.2% (other ranges on request)
Current measurement	0.5 – 25 A, accuracy < 0.2% (other ranges on request)
Temperature measurement	Infrared sensor, accuracy < 1°C

EL INSPECTION

Image resolution	45 MP / 200 µm per pixel
Measurement time	1 – 5 seconds (typical, depends on cell type)
Current range	0 – 20 A, freely adjustable
Automatic defect detection	Available as an option

OPTIONS

Temperature coefficient measurement	From room temperature to RT + 15°C, module heating with power source
Hipot test	Up to 6.5 kV; 0.1 nA sensitivity
Ground bond test	Inductively coupled; 0.2 mΩ sensitivity
Bypass diode test	IEC 61215-2 functionality test

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