SolarIV Series Solar Cell I-V Test System, Class A AM1.5G Simulator

Model SolarIV Series · waveqvanta.com/products/solariv-series-solar-cell-i-v-test-system

Measures illuminated and dark I-V curves of solar cells and derives efficiency, fill factor and resistance values.



The SolarIV series is a complete current–voltage (I-V) test system for photovoltaic devices, combining a Class A AM1.5G solar simulator, a high-precision source meter, a calibrated monocrystalline silicon reference cell and I-V measurement software. From the measured curve it derives short-circuit current, open-circuit voltage, fill factor, conversion efficiency and series/shunt resistance for PV research and quality inspection. Two versions cover 40 × 40 mm and 60 × 60 mm irradiation areas.

Key features

- Illuminated and dark-field I-V curve measurement with complete data processing and graphical display
- Calculates Isc, Jsc, Voc, Pmax, Imp, Vmp, fill factor, conversion efficiency, series and parallel resistance
- Forward and reverse scanning with adjustable scan speed, dark-current subtraction and automatic cycle scanning
- Irradiance correction using the supplied QE-B1 calibrated monocrystalline silicon reference cell
- Solar simulator compliant with IEC 60904-9: Class A spectral match, non-uniformity and instability
- IV-2400 source meter as standard, IV-2450 optional; dedicated probes and vacuum adsorption table for sample fixing
- Irradiation direction can be changed to suit the test arrangement

Specifications

Measurement Modes	Illuminated and dark I-V curves
Measured Parameters	Isc, Jsc, Voc, Pmax, Imp, Vmp, FF, efficiency, Rs, Rsh
Scan Functions	Forward/reverse scan with speed control, dark-current subtraction, cycle scan
Simulator Spectrum	AM1.5G
Spectral Match	Class A
Spot Non-uniformity	≤2% (Class A)
Intensity Instability	≤2% (Class A)
Irradiation Area	40 × 40 mm (SolarIV-150A), 60 × 60 mm (SolarIV-300A)
Irradiation Direction	Down (standard configuration)
Standard	IEC 60904-9
Source Meter	IV-2400 (standard), IV-2450 (optional)
Reference Cell	QE-B1 calibrated monocrystalline silicon cell (standard)
Software	I-V measurement software (standard)
Sample Fixing	Vacuum adsorption table, measurement probes
Sample Holder	Optional

Model overview

Model	Irradiation Area (mm)	Spectral Match	Non-uniformity	Instability	Direction	Source Meter
SolarIV-150A	40 × 40	Class A (AM1.5G)	≤2%	≤2%	Down	IV-2400 std, IV-2450 opt.
SolarIV-300A	60 × 60	Class A (AM1.5G)	≤2%	≤2%	Down	IV-2400 std, IV-2450 opt.

Typical applications

- Solar cell efficiency and I-V characterization
- Photovoltaic device research and development
- Quality inspection of solar cells
- Dark-current I-V analysis