

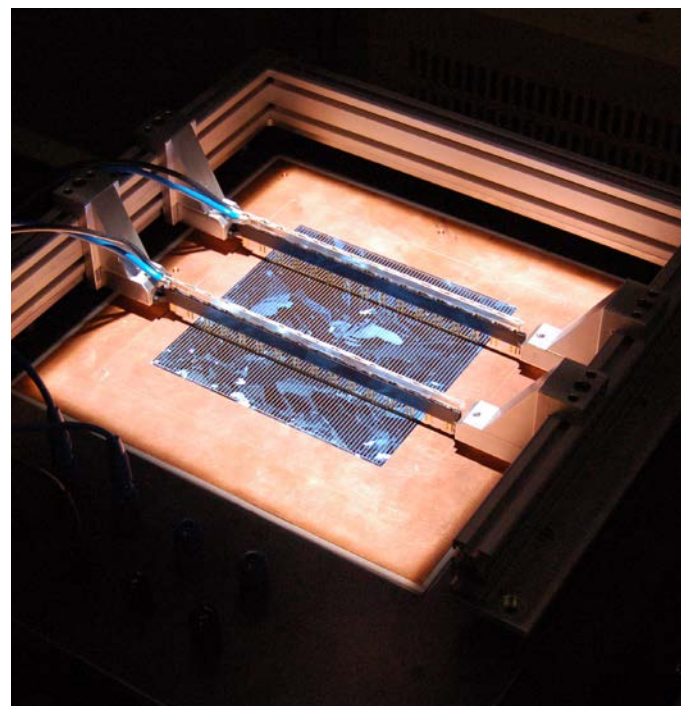
Halogene lamp array for perfect matching the IR spectrum in two lamp systems

SolSim™ Solar Simulator

Technical Specification

- > Class AAA DC sun simulator.
- > In accordance with IEC 60904-9.
- > Steady state measurement.
- > Precise adjustment of the mismatch factor.
- > Illuminated IV-curve measurement including Voc, Isc, Mpp, FF and efficiency calculation.
- > Dark IV-curve measurement including Rs and Rp calculation.
- > One lamp system: Xe short arc lamp.
- > Two lamp system optionally: Xe short arc lamp for UV-Vis and halogen lamps for IR spectrum.
- > 4-quadrant power supply up to 18V/20A.
- > Measurement chuck for cells sizes up to 156x156mm², optionally 210x210mm².

For Solar Cell IV-Characterization



Measurement chuck with contact bars

contact

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SolSim™ Solar Simulator For Solar Cell IV-Characterization

Application Area and Benefits

The SolSim solar simulator measurement system uses a DC xenon short arc light source with a high stability power supply. The light intensity is controlled and stabilized by a photo sensor. Temporal stability, homogeneity of the illuminated area and spectral match of the sun's spectrum are meeting requirements according to IEC 60904-9.

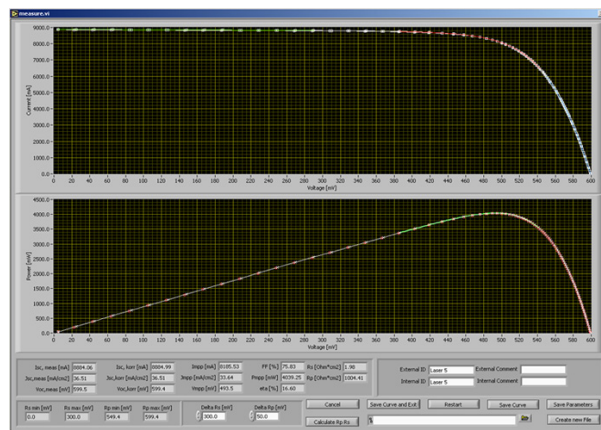
The 4-quadrant power supply with a range up to 18V/20A allows real Isc conditions. Calibrated high precision measurement shunts are selected automatically in a custom made shunt box. The voltage, current and monitor cell signals are measured simultaneously by calibrated high precision 18bit digital multimeter.

The temperature controlled (STC) measurement chuck allows 4-point measurement with separate contacts for current and voltage. Vacuum can be applied to six different cell sizes.

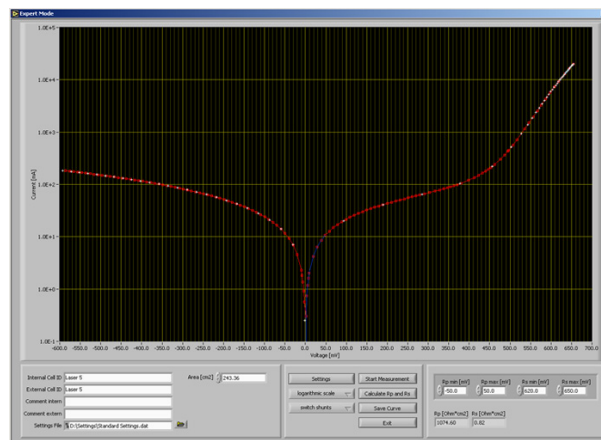
The custom made software written in NILabView™ allows automated measurement of illuminated and dark IV-curves with automatic calculation of all relevant parameters of the solar cell. The results are stored in raw ascii files or can optionally be transferred into a MySQL™ database.



SolSim setup



Illuminated IV-Curve



Dark IV-Curve