



III-V CALIBRATION SERVICES

Calibrated Measurements

We offer calibrated measurements of III-V multi-junction cells for space and terrestrial concentrator applications as well as of single-junction concentrator solar cells.

Grating monochromator – GiMo

Spectral response/EQE measurements of multi-junction solar cells, standard wavelength range 280 – 2000 nm.

Three-source sun simulator – MuSim

Calibrated IV curves of dual and triple-junction solar cells at one sun condition under AM1.5g, AM1.5d or AM0 – accuracy $\pm 3\%$.

Flash simulator – FlashSim

IV curves under high light intensities of all types of concentrator cells, accuracy $\pm 5\%$. Up to 5 MW/m² (maximum cell current 20 A).

Additional Services

IV MAPCON

IV curve mapping of concentrator cells on wafers at high light intensity. Consecutive measurement of all cells on the wafer at $C \sim 250\times$.

Outdoor testing of CPV modules

IV measurements of concentrator modules up to 1 x 2 m². Maximum voltage 220 V, maximum current 12 A. Simultaneous recording of direct and global irradiance, ambient temperature, wind speed, humidity and air pressure.

Indoor testing of CPV modules

Set-up based on generation of collimated light applying a parabolic mirror. Maximum module size 0.8 x 1.6 m², voltage and current ranges on request.

Six-source sun simulator

Set-up based on six independently adjustable light channels for calibrated IV measurements of space solar cells with up to six pn junctions.

Fraunhofer Institute for Solar Energy Systems ISE

Heidenhofstr. 2
79110 Freiburg
Germany

Contact

Dr. Gerald Siefer
Phone +49 761 4588-5433
Fax +49 761 4588-9433
gerald.siefer@ise.fraunhofer.de

www.ise.fraunhofer.de