

Spectral Response Set Up SR 300



OPTOSOLAR

- For measurements of relative and absolute spectral response resp. quantum efficiency of solar cells. Spectral range 300 nm — 3000 nm (or as desired), cell size up to 21 x 21 cm² Specialised bias light adapters for tandem cells or concentrator cells available (enables SR measurement at up to 1000 suns concentration ratio)
- For the determination of solar cell parameters, such as diffusion length, recombination velocity, thin film spectral transmission, cell reflectivity and others
- For determination of spectral mismatch factors for subsequent calibration of cells in solar simulators (simulator lamp spectrum and reference cell SR required).

Light Source:

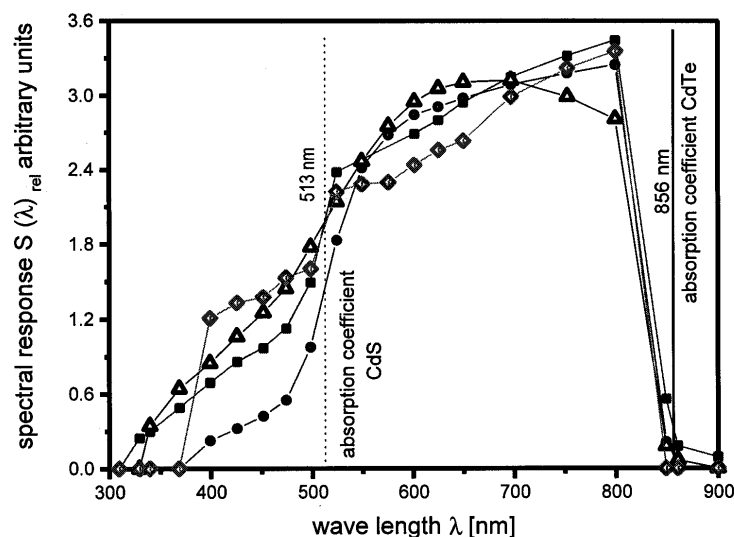
- Tungsten or Xenonlamp, 800W up to 1000 W, depending on spectral range
- Lamp supply stabilised to 10⁻⁴ for outstanding light stability (10⁻⁵ as option)
- Double lamp system with tungsten and Xenon lamp for highest light efficiency (option)

Monochromator

- High precision monochromator, f= 300 mm (standard), or doublemonochromator and mirror optics
- Stray light suppression 10⁻⁴ (single monochromator) to 10⁻⁶
- Turret for three gratings
- Bandwidth ca. 1-15 nm (adjustable)
- Mirror optics

Measurement technology

- Use of lock in technology
- Bias light to set cell operating point as obtained at standard test conditions (1 sun). Adjustable intensity.
- Vacuum chuck with temperature control
- Software with evaluation module for diffusion length, surface recombination, mismatch error



Dimensions:

- Optics: ca. 220 cm x 120 cm x 40 cm (on optical bench)
- Measurement equipment in 19" rack (option)
- Weight ca. 100 kg

Solar cell types:

(amorphous) silicon, II/VI and III/V semiconductors, photoelectrochemical cells, thin films, infrared photovoltaic cells (e.g. GaSb), tandem cells, concentrator cells, thermophotovoltaic cells, ...

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