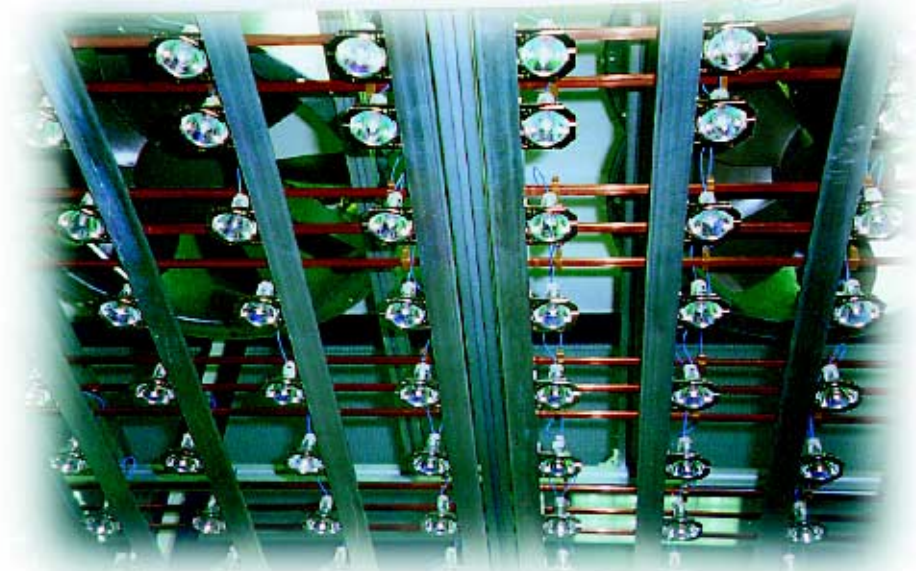


STEADY-STATE SUN SIMULATORS

for Thermal Collectores and Photovoltaic Modules

Our steady-state sun simulators are ideal for many different investigations. They are easy to build, working safely and are simple in maintenance. Because of their modular structure, combining a large number of lamps with best lighting data we receive not only best values concerning local and temporal inhomogeneity but also the possibility of an extension for larger areas. We are planning the sun simulator just as you want to have it.



Description of Function

To measure the output performance of solar thermal collectors (efficiency curves) and photovoltaic modules (I-V curves) independent of weather conditions sun simulators are a good solution. There are two principle possibilities for producing simulated sun-light:

- Flashing lights
- Steady-state sun simulators

The basic advantage of steady-state sun simulators is their easy, cheap and rugged construction. For PV these simulators make it possible to measure even cell materials with higher response times than crystalline pn-silicon. Very easy to measure is nominal operating cell temperature (noct).

And for testing of solar thermal collectors there is no indoor alternative to steady-state sun simulation.

The simulators are good for development in research instituts and quality assurance in the PV module production as well as for educational

aspects. Our simulators are built meeting VDE 0100 concerning safety low voltage and can be used for solar thermal collectors and for PV modules as specified in CEC Specification 101 and IEC TC 82-15 for terrestrial PV modules.

As another part of our steady-state simulator family the Mini-SuSi has been developed. This complete device is a simple and cheap possibility to provide a stable light source with solar spectrum. It is suitable for measuring I-V curves of PV cells in combination with our cell adaptor for the I-V curve analyser PV-KLA.

We plan Your steady-state sun simulator for easy building at Your local site. Therefore we make a concept, based on Your requirements (enlighted area, maximal inhomogeneity of irradiance in test plane), which can be realized by every electrician of Your company. On request we also offer complete simulators.



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SUSI Steady-State Sun Simulator

Technical Data

- Spectrum: AM 1.5 or AM 2.0
- Temporal Inhomogeneity: Better than $\pm 0,2$ % (class A)
- Local Inhomogeneity: Better than $\pm 4,0$ % (class B)
- Irradiance in test plane: 850 W/m²
(on request we can realize every other irradiance, also variable)
- Possibility of implementing a „cold sky“
- Possibility of wind simulation using fans
- Lamps: Halogene reflector lamps
- Voltage: 17 V
- Power of lamps: 150 W
- Power supply: DC
- Maximum value for enlightened area: nearly unlimited

MINI-SUSI Steady-State Sun Simulator for PV cells

Technical Data

- Complete device for testing of PV cells
- Lamps: Philips 13117
- Power supply: 17 V_{DC} (variable ± 10 %), switching unit with PFC
- Cooling of lamps: One fan for every lamp
- Security: Forced starting of fans before switching-on of the lamps
- Integrated silicon irradiance sensor; Si-01TCext
- LED meters: Lamp voltage, Irradiance
- Electromechanical counter: Hours of operation
- Tray for PV cells with ball bearing
(on request with temperature controlled metal block)
- Built of aluminium profiles
- Irradiance in test plane variable
between 400 and 900 W/m²



REFERENCES

Solartechnik Hennigs GmbH, Wismar
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