



MacSolar - Global Irradiance Measuring Device

MacSolar enables primarily an uncomplicated measuring of actual irradiance values: the sensor, an autarkic power supply and the LCD display are integrated in a compact, robust, weatherproof handy device. The user can therewith immediately obtain information about the solar irradiance conditions for a precise location. Furthermore, thanks to the integrated μ -processor controlled electronics and a temperature sensor, MacSolar can simulate typical characteristics of PV modules (current, voltage and output at MPP) enabling for instance the checking of exiting PV arrays.

The irradiance values are measured using mono-Si solar cells, which also assume the device's power supply. Each device is calibrated by means of a solar simulator and a certified reference cell and the initial high accuracy is guaranteed by an internal automatic compensation mechanism.

MacSolar is available in 3 versions, **MacSolar**, **MacSolar E** and **MacSolar Sensor** (with and without data-logger and as a simple passive analogue sensor). The full version is combinable with a specific software (MacView) for reading-out and processing long-term measurements. A calibration certificate is also available as an option.

MacSolar E (basic version)

MacSolar E features an integrated global irradiance and temperature sensor, a solar power supply and a LCD display and operating panel. MacSolar E enables **instant measuring** of irradiance and temperature (direct mode "dir"). Additionally the maximal values are saved and can be displayed using the maximal value mode "hi".

Optional: mounting bracket for its fixation and orientation.

MacSolar (with datalogger)

MacSolar incorporates all the E version features, adding a μ -processor controlled electronics and a datalogger which enables long-term measurements and on-site PV-module simulations. Four operating modes can be selected:

- dir: Displays instant values.
- hi: Displays maximum values within a measuring period.
- avr: Displays average values within a measuring period.
- sto*: Data-logging mode. Irradiance and temperature values are saved in pre-defined time intervals.



MacSolar E



MacSolar (front)

The data-logged values can be transmitted during or after the measurement to a PC/Laptop terminal for its later use to i.e. calculate the yield of a PV-array or simulate a future installation. For this purpose the additional software package MacView and the standard data-transmission cable will be required. The necessary equipment for the fixation and orientation of MacSolar is part of the scope of supply.

*: MacSolar measures in "sto" mode every 10s and the value logged results of the average value of all measurements within the predefined time interval.

MacView 2.0 (Software package)

MacView is the essential complement to MacSolar:

- Data read-out and display of max., avr. and cumulative values.
- Yield projection and summary of losses of the solar array to be analysed.
- Graphic and tabular analysis over a free selectable period of time.
- Export of measured data as an Excel spreadsheet.
- Remote partial configuration of MacSolar. Measurement start-date configuration.
- Module and Inverter database.
- USB HID data transfer cable

MacSolar Sensor (analogue-output passive sensor)

The sensor version enables **instant measuring** of irradiance and module temperature and was especially developed for industrial applications:

- Calibrated mono-Si solar cell with internal temperature compensation.
- High-accuracy irradiance measurements to check PV arrays/flat-plate collectors.
- Analogue output up to 7 Volt proportional to irradiance.
- Analogue output from 265 to 955 mV proportional to temperature (-20 to 85 °C).
- Integrated solar power-supply (passive sensor).
- Weatherproof (IP65), robust housing and standard mounting bracket for its fixation.

The measurements can be accordingly processed with the appropriate hardware to i.e. return the target values of output or the expected yield of a PV array, being the measured temperature values equivalent to those of the PV modules.

For solar-thermal installations only the measured irradiance values will be relevant. Other areas of application could be constructions physics or solar technology training facilities.

Customized versions of the sensor optionally available (also OEM)

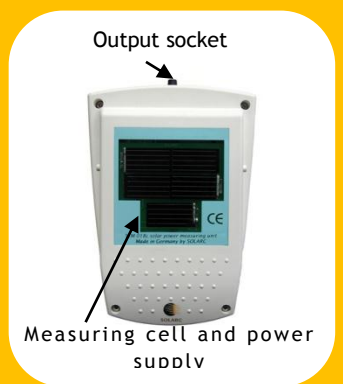
Last updated 08/2011, subject to change without notice



MacSolar (Rear)



MacSolar Sensor (Front)



MacSolar Sensor (Rear)