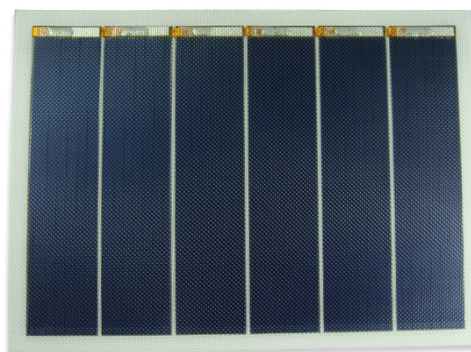


SUNLOAD Solar Module OEM-5 Instruction Manual

Technical data

Max. power	5Wp
Nominal voltage	9 V
Open-circuit voltage	12 V
Nominal current	300 mA
Dimensions (mm)	270 x 195 x 1,1
Weight	110 g
Colour	white



Product description

The SUNLOAD OEM Solar Module 5 includes a flexible solar cell in triple-junction technology. They convert sunlight directly into electricity at 9 V. They can be embedded as a thin layer into a flexible plastic compound and due to this, they are extremely light, flexible and practically unbreakable. They operate under a clear blue sky as well as in extremely weak or diffused light, with incandescent lamp or halogen lamp lighting, and even if part of the cells are covered by items or external shadows (so called „partial shadows“).

Therefore, triple junction cells are ideal for mobile use.

Scope of delivery

SUNLOAD Solar Module OEM-5 incl. a soldered cable with DC-plug 5,5x2,1.

Disclaimer

This guide contains important safety information, commissioning, performance and maintenance of the solar module. Please read these instructions before using the solar panel carefully. Please note that technical details are indicative of the solar modules, which may change due to the development progress.

Caution!

- The currents and voltages of individual SUNLOAD solar modules are not dangerous to humans. However, if several modules are connected in series to increase the tension, this can lead to dangerous electrical shock!
- If using batteries and electric equipment, you want to run with SUNLOAD solar panels, always consider industry standards and safety instructions of the manufacturer!
- Never try to recharge batteries, which are not rechargeable!
- Make sure the connection of the solar module to an electronic device or a battery matches the polarity. Incorrect connecting can cause damage to the solar panel, electric shock or fire.

Handling

- Do not buckle or bend the solar panels in tight radii and/or over edges.
- Protect the modules from sharp corners, points and edges.
- Please do not wash the modules in the machine, do not have them chemically cleaned and do not place them in laundry dryers.
- The folding modules are water and rain resistant in the plastic laminate area. Protect the electric plug-and-socket connectors from wetness - for instance, use the Sunload protective bag.

Use

Charge miniature electronic devices

In order to charge or operate electronic devices, such as the MP3-Player, organizer, mobile telephone or notebook, preferably use the specially developed Sunload Powerbanks. These provide suitable voltages. If you want to connect the miniature electronic devices directly to the solar module or to a solar charging controller, please observe especially the increased open circuit voltage of the module. The high open circuit voltage of the module could result in the device's destruction. The voltage input of your connected device must be able to process the open circuit voltage. In any case, read the technical instructions for your device.

Maintenance and Cleaning

For the solar module SUNLOAD OEM-5 is no special maintenance required. By prolonged storage in the dark, the efficiency of solar modules can be affected. Put in this case the solar panel for a few hours in the sun, solar cells can regenerate themselves by exposure to sunlight, largely by themselves. To clean, wipe the surface with a damp cloth when needed, you may use a mild soapy solution. Please do not use aggressive cleaning agents or solvents because they can damage the module.

General notices

The maximum potential power output of solar modules is given in W_p (Watt peak) and applies in the case of very high light radiation (1.000 W/m^2 and/or Standard Testing Conditions STC). The achievable power output of Sunload folding modules depends on various factors:

• Position of the sun

The lower the sun, the longer is the path of the solar through the atmosphere - the lower its intensity. Therefore, the power output of the module at lunchtime is clearly higher than during the morning or evening hours, during the summer months, it will be stronger than during the winter months, and closer to the

equator, it will be much better than in the northern or southern hemisphere.

• Alignment towards the sun

The so-called effective area is largest, when the folding module is always aligned exactly vertically to the angle of incidence of the sun. Also with strong sunlight, the module output power is more reduced, the less the module is aligned with the sun.

• Weather

The output power of the module decreases as the cloudiness increases, i.e., even slight mist results in a reduction in yield. This reduction in power, however, is not anywhere near as serious as, for example, with crystalline solar cells, which, even with the slightest cloudiness clearly produce less electricity.

• Partial shading

With partial shading of individual cells or part of the solar module, triple junction modules do not lose their capability to generate electricity. For a general assessment of the power reduction to be expected on average, even shading, the following approximate values may serve:

– No shading, full sun:	100 %
– Shading approx. 2% of the panel:	85-90 %
– Shading approx. 5% of the panel:	80 %
– Shading approx. 10% of the panel:	50 %
– Shading approx. 25% of the panel:	25 %

Help

Flexible CIGS cells represent a new technology. In order to be able to react fast to continuous developments, current product related information is published regularly on our website www.sunload.com. It will provide you with answers on frequently asked questions, provide suggestions and application examples. Our customer service also is available at any time. You can reach us by telephone, e-mail or via the contact form on our website.

Warranties and Limitation of Liability

SUNLOAD (Sunload Mobile Solutions GmbH, Ullsteinstrasse 108, 12109 Berlin) makes no express or implied guarantee, including in respect of any condition or warranty of satisfactory quality and fitness for use with the exception of the following: SUNLOAD grants the original purchaser of this product a limited warranty of two years in the electrical output of the module, for material and processing defect, we guarantee for a period of two years from the date of purchase that this product will produce about 50% of the rated output in the data sheet and that it is free from defects in material and processing. After buying or receipt, the buyer has to check quality of the product as soon as is customary under normal business practice. The buyer must inform the competent retailer or SUNLOAD immediately as soon as a suspected non-compliance of the specifications is discovered. If the buyer fails to examine the quality of the product or fails to inform SUNLOAD or the retailer under this provision to apply the product to be accepted and will abandon any claim arising from breach of an undertaking. Operating instructions are communicated to the purchaser along with the product purchased. The warranty is void for products that have been damaged due to force majeure, improper use or storage, improper transport or after repair by persons not authorized by SUNLOAD. The maximum liability of SUNLOAD under this warranty is limited in each case to the purchase price of this product. SUNLOAD is no case liable to persons or property or for loss of profits, expenses or other incidental or consequential or special damages liability arising from the use or inability to use the product. Returned Products under this warranty to SUNLOAD or an authorized SUNLOAD Dealers will be repaired for free after SUNLOAD choice or replaced or their purchase price will be refunded. This warranty does not include transportation costs for returning the module or for the return of repaired or replaced modules or costs associated with installing, building, the new installation or adjustment and modification of the original product book. This warranty applies only if the product along with the original invoice (purchase date and name of the retailer must be specified) is posted. SUNLOAD will not accept reshipment without prior consent. Any other form of guarantee, which is given by the retailer, is exclusively on its own responsibility, no person is entitled to change the terms of this warranty of the manufacturer. This warranty does not affect the statutory rights of the Purchaser in accordance with national laws on consumer rights. In case of a translation of the warranty, the German version is to be attached and it is crucial in the case of contradictions.

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