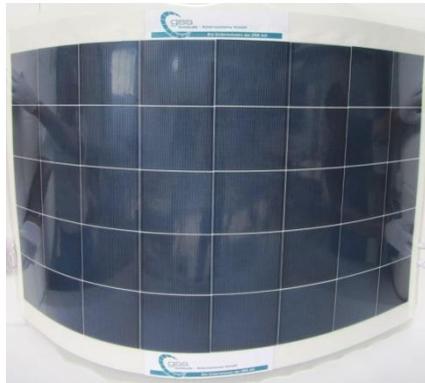


DATA SHEET

Semi Flexible, ultra-lightweight photovoltaic module
“active wire” technology
Made in Germany



Benefits :

- ⇒ 4,5 Kg in (1655mm x 991mm x 2mm)
- ⇒ „active-wire“ technology
- ⇒ insensitive cell breakthroughs
- ⇒ higher power
- ⇒ modules thickness 2mm
- ⇒ variable sizes
- ⇒ building with low static load
- ⇒ vertical mountable

in film-film version

The newly developed solar module is a glassless, semi flexible solar modules and ultra-light based on the "active-wire" technology of crystalline solar cells. It is based on a special compound solar cell technology and high quality film material in which the solar cells are protected encapsulated.

This composite laminate may alternatively be mounted on a flexible backing as a standalone PV module or on a solid. This allows the use of both the ordinary solar application as well as in the automotive industry, boat building or building integrated photovoltaic.

In addition to the dimensions as a standard module (laminate) with 36, 40, 48, 54 or 60 solar cells special forms and custom dimensions and geometries are possible both in 2D and 3D. Different module specific types of interconnection and special connection boxes are optional and can be implemented on request.

Due to its low weight (as a laminate approx 4.5kg) this product is projecting for roof constructions and in the hobby -, camping and boat area suitable, which can only be limited with regard to an additional weight load or add any conventional solar modules. Basically, the PV is - frameless module -.

Mechanical data.

Dimension framed. (-F):	eliminates
Dimensions unframed (-L):	ca. 1655mm x 991mm x 2mm
Height junction box	ca. 28,5mm (or smaller, depending on the used junction box)
Framed weight (-F):	eliminates
Weight unframed (-L):	ca. 4,5 kg
Front Glass:	Polymer film with high transparency top
Cells Embed:	special encapsulation
Rear:	Weather-resistant, multi-layer composite film (white, black, transparent)

General specification of the PV module

Number of solar cells per module:	60 piece
Cell type:	Multi crystalline solar cells (156mm x 156mm) with "active wire" technology
Connection:	Multi contact Westlake
Cable:	DC connection cable; 4 mm ² , double insulated, 1 m cable with connector
System coloured background:	White, black or transparent
Frame color:	eliminates
temperature:	-40°C to +85°C

Electrical specifications of the PV – module (example with 60 solar cells)

Performance classes	Rated capacity P _{mp} ⁽¹⁾	Rated current I _{mp}	Nominal voltage U _{mp}	Short circuit current I _{sc}	Open circuit voltage	Maximum system voltage
ZRE240W-F1F1-60P6+L	240 W	7,85 A	30,6 V	8,40 A	37,5 V	1000 V _{DC}
ZRE245W-F1F1-60P6+L	245 W	7,97 A	30,8 V	8,41 A	37,6 V	1000 V _{DC}
ZRE250W-F1F1-60P6+L	250 W	8,05 A	31,1 V	8,43 A	37,6 V	1000 V _{DC}

(1) Rated output under standard test conditions (STC): Spectrum AM 1.5; Exposure: 1000W / m², cell temperature T_c = 25 ° C; Tolerance P ±5% based on one at an approved institution presumptuous / calibrated "measurement standard / mother module highlighted in white." Performance sorting -0 Wp; +4.99 Wp.

Temperature coefficients

capacity:	- 0,43% / K
Open circuit voltage:	- 127mV / K
Short circuit current:	+ 4,23mA / K

Low light performance

at 800 W/m ² :	U _{mp} : 0,0%; I _{mp} : -20%
at 400W / m ²	U _{mp} : - 2,0%; I _{mp} : -60%
at 200W / m ²	U _{mp} : - 5,1%; I _{mp} : -80%

These electrical parameters are typical mean values from historical production. There are no guarantees for the accuracy of this data in future it Production batches taken.

Over-current Protection: Operation of the modules with an external power source is only when using string fuses with a tripping current <17A (STC) allowed.

Qualification:

Product Certification: on the basis of IEC 61215 (Ed 2.) and IEC 61730; CE conformity; not regulated building Protection class II
Max. System Voltage: 500V

Warranty:

The warranty period for the product is 5 years.

Options:

Variations in the number of solar cells, the geometry (shape) of the laminate as well as the colored background and the changed situation in the junction box are possible.
Please contact us in this! We are happy to provide you with a specific offer.

The product is successful developed of GSS Gebäude- Solarsysteme GmbH from Germany, Technical changes, advancements in the sense of the progress and mistakes we reserve the right.
Our general terms and conditions (AVLB) in its current version.

Attention!

Before use / installation of the product, the operating instructions are read through the safety instructions contained therein and carefully observed and adhered to! The modules are to be treated glass products and are not suitable for walking!

ÄZ:10/2015