

# SOLARWATT ORANGE 48M alpine

Monocrystalline solar cells, 200 Wp - 210 Wp

Aluminium frame



ENGLISH



## SOLARWATT PROMISE

### Quality

Tested materials and thorough workmanship guarantee high yields and system longevity.

### Positive classification range (+0 Wp to +5 Wp)

The actual module output is guaranteed to be up to 5 Wp above the nominal value.

### Decentralized junction system

Shorter cable runs and simple cable routing through decentralized junction system.

### Optimum mechanical stability

Coherent module geometry, 4mm structured solar glass and 50 mm frame ensure stability and torsional strength up to 6000 Pa.

## SOLARWATT WARRANTY

### Standard warranty

10 year product warranty  
staggered performance warranty covering 25 years

### Extended warranty by purchasing SOLARWATT Full Coverage insurance

12 year product warranty  
linear performance warranty covering 25 years

According to the „Special warranty conditions for SOLARWATT solar modules“

## SOLARWATT ADVANTAGES

- ▶ Clear identification provided by serial number engraved on front of frame
- ▶ Waste is prevented thanks to the patented, resource-saving QUICKSTAXX® packaging system
- ▶ Independent tests confirm resistance to hail, ammonia, flame, and more\*, PID-free
- ▶ Take-back service and module recycling



\* For further information visit us on [www.solarwatt.de](http://www.solarwatt.de)



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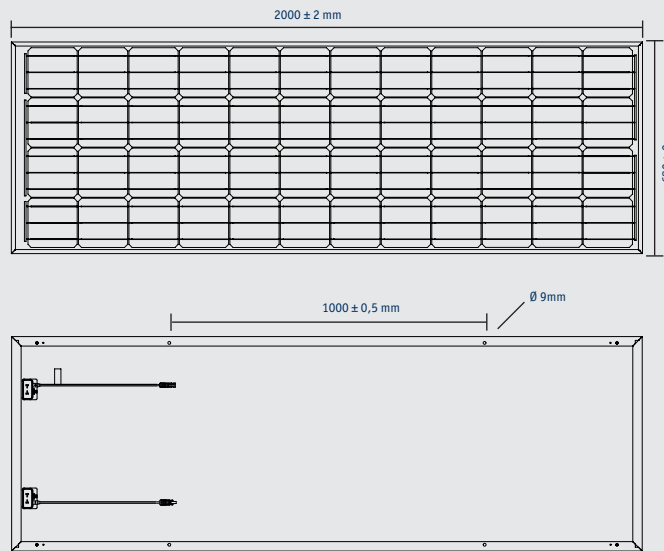
**Certified acc. to:**  
DIN EN ISO 9001 und 14001  
BS OHSAS 18001:2007



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## Technical Data

### DIMENSIONS



### GENERAL DATA

<b>Module technology</b>	Glas-foil-laminate; aluminium frame
<b>Cover material</b>	High transparent solar glass (tempered), 4 mm
<b>Encapsulation</b>	EVA-solar cells-EVA
<b>Back material</b>	Multi-layer polymer sheet
<b>No. and type of cells</b>	48 monocrystalline solar cells
<b>Dimensions of cells</b>	156 x 156 mm
<b>Cables and connectors</b>	Cables 2 x 0,40 m/4 mm <sup>2</sup> , MultiContact MC4 connectors
<b>Bypass-diodes</b>	2
<b>Application class</b>	Application class A (nach IEC 61730)
<b>Dimensions (LxWxH)</b>	2000 x 680 x 50 mm
<b>Weight</b>	21 kg
<b>Max. system voltage</b>	1000V (US 600 VDC)
<b>Mechanical Ratings</b>	Suction pressure of 2400 Pa approved (Wind speed 130 km/h with safety factor 3) Approved for applied loads up to 7600 Pa Assessed under test conditions specified in IEC 61215, Ed. 2.
<b>Qualifications</b>	IEC 61215 Ed.2 IEC 61730 (incl. Safety class II)

### ELECTRICAL DATA (STC)

STC: Standard Test Conditions: measurement conditions: Radiation strength 1000 W/m<sup>2</sup>, spectral distribution AM 1.5, temperature 25 °C, in accordance with EN 60904-3

<b>Nominal power P<sub>N</sub></b>	200 Wp	205 Wp	210 Wp
<b>Nominal voltage U<sub>mpp</sub></b>	24,9 V	25,2 V	25,5 V
<b>Nominal current I<sub>mpp</sub></b>	8,04 A	8,14 A	8,24 A
<b>Open circuit voltage U<sub>OC</sub></b>	30,2 V	30,4 V	30,7 V
<b>Short circuit current I<sub>SC</sub></b>	8,45 A	8,59 A	8,70 A
<b>IR*</b>		20 A	

Measuring tolerances P<sub>max</sub>±5%;

\* Reverse current power rating: Operation of the modules with an external power source is only permitted with a string fuse with a release current of < 20 A.

Reduction in the module efficiency with reduction in radiation strength of 1000 W/m<sup>2</sup> to 200 W/m<sup>2</sup> (25°C): 4±2% (relative) / -0,6±0,3% (absolute).

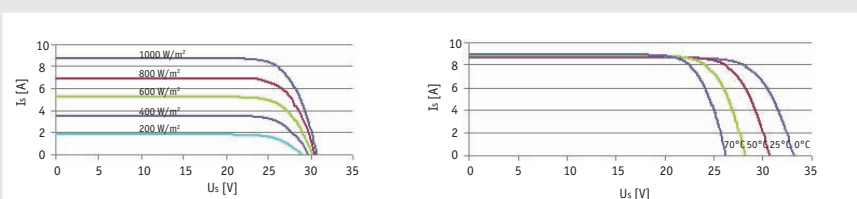
### ELECTRICAL DATA (NOCT)

NOCT: Normal Operation Cell Temperature, measurement conditions: Radiation strength 800 W/m<sup>2</sup>, AM 1.5, temperature 20 °C, wind speed 1m/s, electrical open-circuit operation

<b>Nominal Power P<sub>N</sub></b>	147 W	150 W	154 W
<b>Nominal voltage U<sub>mpp</sub></b>	22,9 V	23,2 V	23,5 V
<b>Open circuit voltage U<sub>OC</sub></b>	28,2 V	28,4 V	28,7 V
<b>Short circuit current I<sub>SC</sub></b>	6,83 A	6,94 A	7,03 A

### CHARACTERISTIC LINES

Voltage charact. line at different irradiances and temperatures



performance class 210 Wp

### THERMAL FEATURES

<b>Operating Temperature Range</b>	-40 ... +80 °C
<b>Ambiente Temperature Range</b>	-40 ... +45 °C
<b>Temperature Coefficient of P<sub>N</sub></b>	-0,41%/K
<b>Temperature Coefficient of U<sub>OC</sub></b>	-0,33%/K
<b>Temperature Coefficient of I<sub>SC</sub></b>	0,05%/K
<b>NOCT</b>	45°C