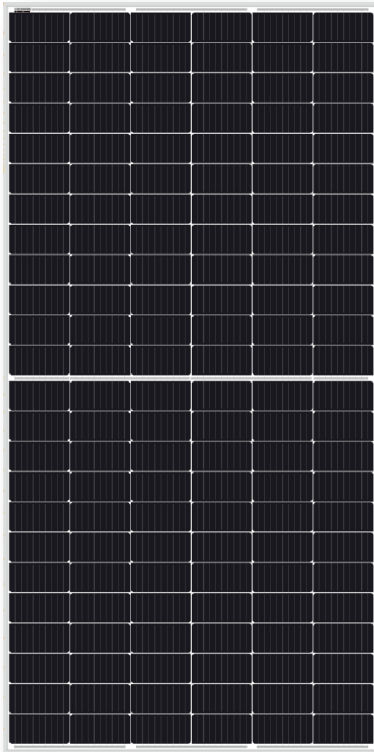


## PRODUCT



# SOLARWATT Panel classic P 1.0 pure

## Best price-performance ratio

### Solid quality with high performance

With the classic models, Solarwatt offers affordable, robust, high-performance solar modules of proven quality. They are durable and high-yielding as well as resistant to weather effects and environmental influences.

The classic-modules are produced on state-of-the-art production lines and meet the high Solarwatt quality standards. They will therefore generate solar power well beyond their warranty period.

The modules come with a solid twelve-year product guarantee.



## PRODUCT QUALITY

- LeTID tested
- salt mist resistant
- ammonia resistant
- PID protected
- 100 % plus-sorting
- max. 5,400 / 2,400 Pa

## SERVICE

**FullCoverage insurance**  
optional (up to 1,000 kWp\*)

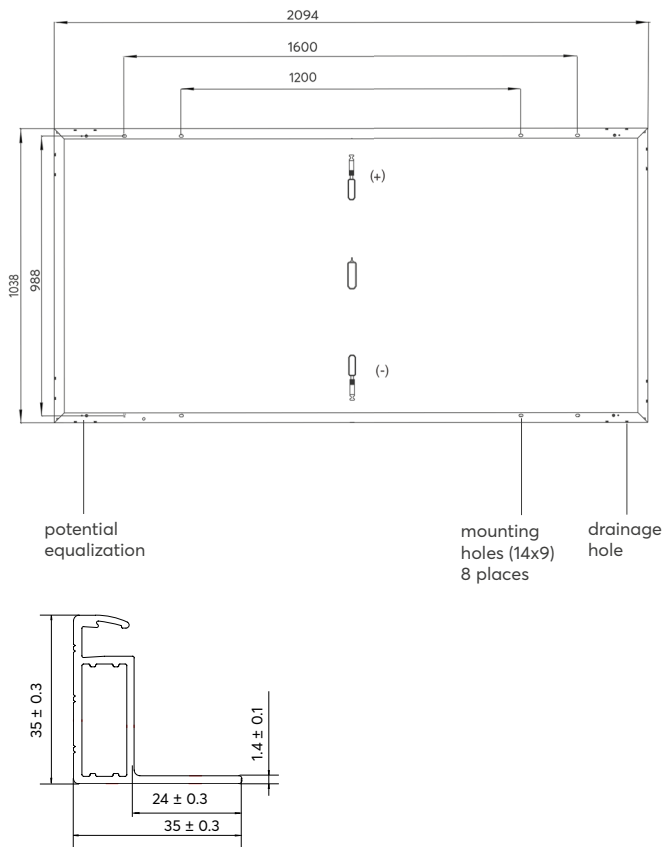
**Simple returns policy**  
as per „Delivery terms for Solarwatt solar modules“

**12 Year Product Warranty**  
as per valid „Warranty conditions for Solarwatt solar modules“

**25 Year Performance Warranty**  
on 84.8 % of nominal power as per „Warranty conditions for Solarwatt solar modules“

\* country-specific deviations apply

## DIMENSIONS



## GENERAL DATA

<b>Module technology</b>	Glass-foil laminate; aluminum frame
<b>Covering material</b>	Tempered solar glass with anti-reflective finish
<b>Encapsulation</b>	Solar cells in polymer encapsulation
<b>Backing material</b>	Multi-layer composite film, white
<b>Solar cells</b>	144 monocrystalline high power PERC-solar cells
<b>Cell dimensions</b>	166 x 83 mm
<b>L x W x H / Weight</b>	2,094 <sup>±2</sup> x 1,038 <sup>±2</sup> x 35 <sup>±0.3</sup> mm / appr. 24 kg
<b>Connection technology</b>	Cables 2 x 1.3 m / 4 mm <sup>2</sup> MC4 type connectors
<b>Bypass diodes</b>	3
<b>Max. system voltage</b>	1,500 V
<b>IP rating</b>	IP68
<b>Protection class</b>	II (acc. to IEC 61140)
<b>Fire class</b>	C (acc. to IEC 61730)
<b>Certified mechanical ratings as per IEC 61215</b>	Pressure load up to 3,600 Pa (test load 5,400 Pa) Suction load up to 1,600 Pa (test load 2,400 Pa)
<b>Recommended stress load as per Installation Instructions</b>	Please refer to the specifications in the Installation Instructions and Warranty Conditions.
<b>Qualifications</b>	IEC 61215   IEC 61730   LeTID 2 PFG 2387 (PID) IEC 61701   IEC 62716

## ELECTRICAL DATA (STC)

STC (Standard Test Conditions): Irradiation intensity 1,000 W/m<sup>2</sup>, spectral distribution AM 1.5 | Temperature 25 ± 2 °C, in accordance to EN 60904-3

<b>Nominal power P<sub>max</sub></b>	450 Wp	455 Wp	460 Wp
<b>Nominal voltage V<sub>mp</sub></b>	41.2 V	41.3 V	41.4 V
<b>Nominal current I<sub>mp</sub></b>	10.9 A	11.0 A	11.1 A
<b>Open circuit voltage V<sub>oc</sub></b>	49.9 V	50.0 V	50.1 V
<b>Short circuit current I<sub>sc</sub></b>	11.5 A	11.6 A	11.7 A
<b>Module efficiency</b>	20.7 %	20.9 %	21.2 %

Measurement tolerances: P<sub>max</sub> ±5 %; V<sub>oc</sub> ±10 %; I<sub>sc</sub> ±10 %, I<sub>mp</sub> ±10 %

Reverse-current power rating I<sub>r</sub>: 20 A, operating modules with an external power source is only permissible if using a phase fuse with a tripping current of ≤ 20 A.

## ELECTRICAL DATA (NMOT AND WEAK LIGHT)

**NMOT (Nominal Module Operating Temperature):** Irradiation intensity 800 W/m<sup>2</sup>, spectral distribution AM 1.5, Temperature 20 °C  
**Weak light conditions:** Irradiation intensity 200 W/m<sup>2</sup>, Temperature 25 °C, Wind speed 1 m/s, load operation

<b>Nominal power P<sub>max @NMOT</sub></b>	335 W	338 W	341 W
<b>Nominal power P<sub>max @200 W/m<sup>2</sup></sub></b>	87.0 W	88.0 W	89.0 W

Measurement tolerances: P<sub>max</sub> ±5 %; V<sub>oc</sub> ±10 %; I<sub>sc</sub> ±10 %, I<sub>mp</sub> ±10 %

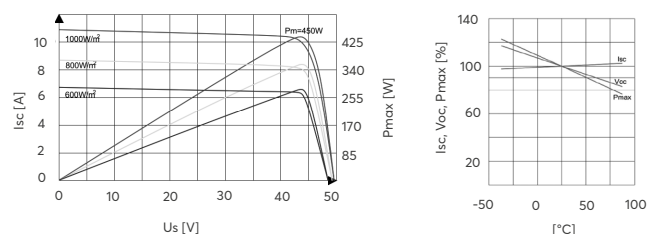
Reduction of module efficiency when irradiance is reduced from 1,000 W/m<sup>2</sup> to 200 W/m<sup>2</sup> (at 25 °C): 4 ± 2 % (relative) / -0,6 ± 0.3 % (absolute).

## THERMAL FEATURES

<b>Operating temperature range</b>	-40 ... +85 °C
<b>Ambient temperature range</b>	-40 ... +45 °C
<b>Temperature coefficient P<sub>max</sub></b>	-0.38 %/K
<b>Temperature coefficient V<sub>oc</sub></b>	-0.29 %/K
<b>Temperature coefficient I<sub>sc</sub></b>	0.06 %/K
<b>NMOT</b>	42 °C

## CHARACTERISTIC LINES (PERFORMANCE CLASS 450 WP)

Voltage characteristic line at different temperatures and irradiances



## TRANSPORT AND PACKAGING

<b>Modules per pallet</b>	31
<b>Pallet dimensions (packing size)</b>	2,135 x 1,130 x 1,180 mm
<b>Gross weight per pallet</b>	770 kg
<b>Pallets per truck</b>	12 / 24
<b>Modules per truck</b>	372 / 744