



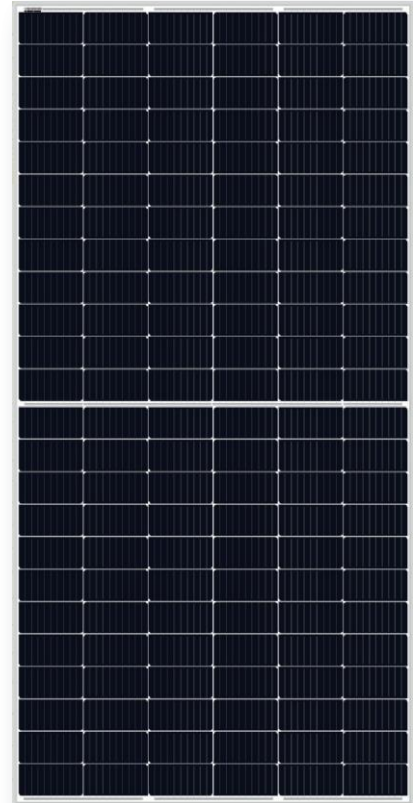
SOLARWATT Panel classic P 1.0 pure

Glass-Polymer Module The best price-performance ratio

With the Eco modules, SOLARWATT offers affordable, robust and high-performance photovoltaic modules of proven quality. They are durable, high-performance and resistant to the effects of weather and environmental influences.

ECO modules are manufactured on state-of-the-art production lines and meet SOLARWATT's high quality standards. Therefore, they will generate solar power well beyond the warranty period.

The modules come with a solid 10-year product warranty, extendable to 12 years with the activation of the Insurance. The Full Coverage Insurance insures almost all risks and takes effect even if the modules do not generate electricity or produce less than expected.



Product quality

- Resistant to salt spray
- Ammonia resistant
- Tested for LeTID
- 100 % positive tolerance
- 100% PID protected



Service

Total coverage

opcional (hasta 1000 kWp)*

Pick-up service

According to the terms of delivery for SOLARWATT photovoltaic modules

* country specific deviations apply.

Product warranty

12-year product warranty in accordance with SOLARWATT's warranty conditions for photovoltaic modules

Performance warranty

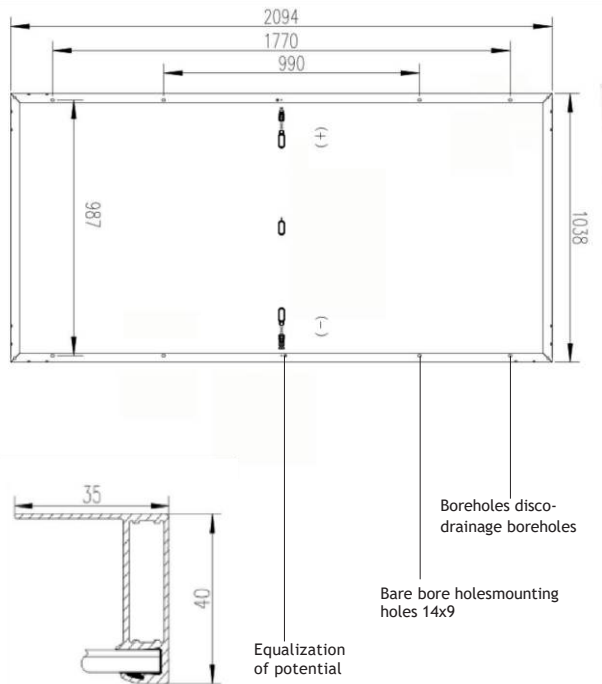
25-year performance guarantee with a minimum of 80% at the end of this period, in accordance with the warranty conditions for SOLARWATT photovoltaic modules.

SOLARWATT Panel classic P 1.0 pure

455 - 465



Dimensions



General data

| | |
|--|---|
| Type of technology | Glass-Polymer Laminate; Aluminum Frame |
| Front cover | Toughened solar glass with anti-reflecting finish, 3.2mm |
| Encapsulated Rear cover | EVA - solar cells - EVA White multilayer composite film, white |
| Photovoltaic cell | 144 mono-crystalline PERC high-power solar cellspower |
| Cell dimensions | 166 x 83 mm |
| Dimensions/ Weight | 2.094 ⁺² x 1.038 ⁺² x 40 ^{+0.3} mm / ca. 24,0 kg |
| Connection technology | 2 cables 0.3m / 4mm ² connector type MC4 |
| Bypass diodes | 3 |
| Max. system voltage | 1,500 V |
| Degree of protection | IP68 |
| Electrical protection | II (according to IEC 61140) |
| Fire class | C (according to IEC 61730) |
| Mechanical characteristics according to IEC 61215 | Suction load up to 2,400 Pa (load test 3,600 Pa) Pressure load up to 3,600 Pa (load test 5,400 Pa) |
| Recommended load according to SOLARWATT Installation nstructions | Please refer to the specifications in the Installation Instructions and Warranty Conditions. |
| Certifications | TUV : Tested according to IEC 61215-(1/1-1/2) (incl. LeTID) IEC 61730 -(1/2) |

Electrical data (STC)

STC (Standard Measurement Conditions): 1,000 W/m² irradiance, Spectral distribution AM 1.5 | Temperature 25±2 °C, according to EN 60904-3

| | | | |
|---------------------------------------|--------|---------|---------|
| Nominal power P _{max} | 455 Wp | 460 Wp | 465 Wp |
| Rated voltage V _{mp} | 41.8V | 42,00 V | 42,20 V |
| Rated current I _{mp} | 10.89A | 10,96 A | 11,09A |
| Open circuit voltage Voc | 50.2V | 50,40 V | 50,80 V |
| Short circuit current I _{sc} | 11.5A | 11,56A | 11,69 A |
| Efficiency of the module | 20.90% | 21,13 % | 21,59 % |

Measurement tolerance: P_{max} ±5 %; Voc ±10 %; I_{sc} ±10 %, I_{MP} ±10 %. IR reverse current: 20 A, the use of modules with an external power supply will only be allowed if a line fuse with tripping current ≤ 20 A is used.

Electrical data (NOCT and weak radiation)

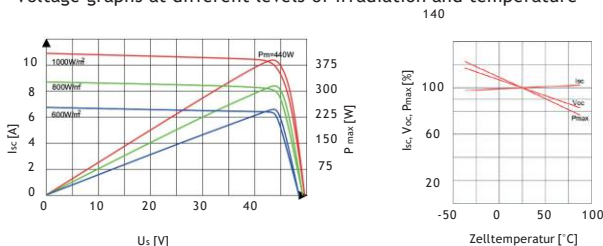
Nominal Module Operation Temperature): 800 W/m² irradiance, Spectral distribution AM 1.5, Temperature 20 °C
Weak irradiance: 200 W/m² irradiance, Temperature 25 °C, wind speed 1m/s, load operation

| | | | |
|--|-------|-------|------|
| Nominal Power P _{max @ NMOT} | 364 W | 368 W | 372W |
| Nominal Power P _{max @ 200 W/m²} | 91 W | 92 W | 93 W |

Measurement tolerance: P_{max} ±5 %; Voc ±10 %; I_{sc} ±10 %, I_{MP} ±10 %. Reduction of module efficiency when irradiance is reduced from 1000 W/m² to 800 W/m², to 200 W/m² (at 25 °C): 4 ± 2 % (relative) / -0.6 ± 0.3 % (absolute).

Characteristic curves (performance class 440Wp)

Voltage graphs at different levels of irradiation and temperature



Thermal Characteristic

| | |
|--|----------------|
| Operating temperature range | -40 ... +85 °C |
| Ambient temperature range | -40 ... +45 °C |
| Coefficiente de temperatura P _{max} | -0.350%/°C |
| Temperature quotient VOC | -0.270%/°C |
| Temperature quotient ISC | +0.048%/°C |
| NMOT | 42 °C |