



Technical data sheet

Vision 60M (315 and 320 Wp)

Glass-glass module Solid quality with high performance

Thanks to their modern design SOLARWATT glass-glass modules deliver the highest long-term yields. They are robust and resilient, yet just as light as their glass-foil predecessors.

The high-performance PERC solar cells are embedded almost indestructibly in the glass-glass composite and thus optimally protected against all weather effects and mechanical stress. SOLARWATT can therefore offer a 30-year warranty on performance and product quality.



Product Quality

- long-lasting and high-yield
- salt mist resistant
- 100 % plus-sorting
- 100 % PID protected



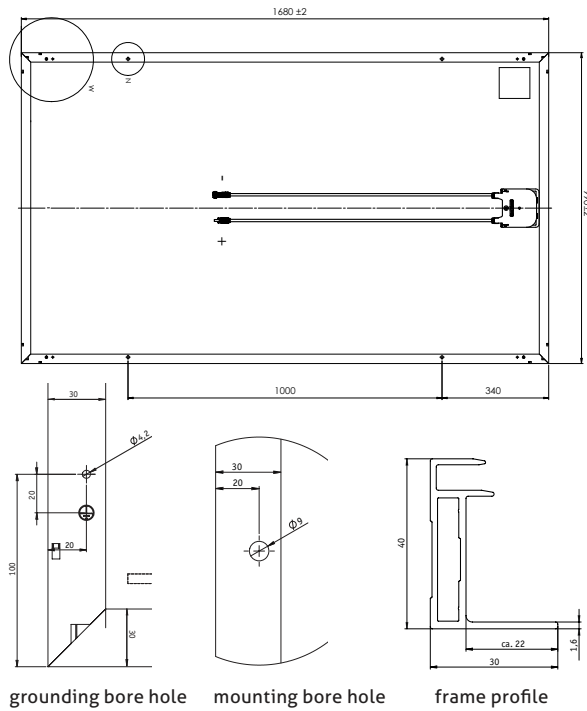
Service

30 Year Product Warranty
as per „Warranty conditions for SOLARWATT solar modules“

Country of origin
Quality made in Germany

30 Year Performance Warranty
on 87 % of nominal power as per „Warranty conditions for SOLARWATT solar modules“

Dimensions



General data

Module technology	Glass-glass laminate; aluminum frame
Covering material Encapsulation Backing material	Tempered solar glass with anti-reflective finish, 2 mm EVA-solar cells-EVA, white Tempered glass, 2 mm
Solar cells	60 monocrystalline high power solar cells
Cell dimensions	157 x 157 mm
L x W x H / Weight	1,680 ^{±2} x 990 ^{±2} x 40 ^{±0.3} mm / appr. 22,8 kg
Connection technology	Cables 2 x 1,0 m/4 mm ² TE Connectivity PV4-S connectors
Bypass diodes	3
Max. system voltage	1,000 V
IP rating	IP67
Protection class	II (acc. to IEC 61140)
Fire class	C (acc. to IEC 61730), E (acc. to EN 13501)
Certified mechanical ratings as per IEC 61215	Suction load up to 2,400 Pa (test load 3,600 Pa) Pressure load up to 5,400 Pa (test load 8,100 Pa)
Recommended stress load as per Installation Instructions	Please refer to the specifications in the Installation Instructions and Warranty Conditions.
Qualifications	IEC 61215 IEC 61730 IEC 61701 IEC 62804

Electrical data (STC)

STC (Standard Test Conditions): Irradiation intensity 1,000 W/m², spectral distribution AM 1,5 | Temperature 25 ± 2 °C, in accordance to EN 60904-3

	315 Wp	320 Wp
Nominal power P _{max}	315 Wp	320 Wp
Nominal voltage V _{MP}	32,5 V	32,7 V
Nominal current I _{MP}	9,78 A	9,87 A
Open circuit voltage V _{OC}	40,3 V	40,4 V
Short circuit current I _{SC}	10,31 A	10,4 A
Module efficiency	19,1 %	19,4 %

Measurement tolerances: P_{max} ± 5 %; V_{oc} ± 3 %; I_{sc} ± 5 %; I_{MP} ± 5 %

Reverse-current power rating I_r: 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 Operation Temperature): Irradiation intensity 800 W/m², spectral distribution AM 1,5, Temperature 20 °C

Weak light conditions: Irradiation intensity 200 W/m², Temperature 25 °C, Wind speed 1m/s, load operation

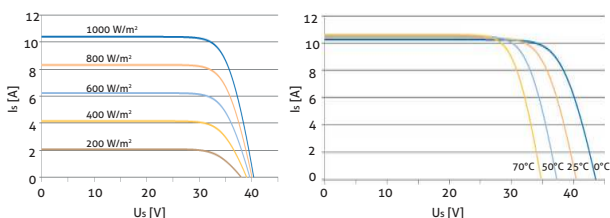
	233 W	237 W
Nominal power P _{max @NMOT}	233 W	237 W
Nominal power P _{max @200 W/m²}	62,8 W	63,8 W

Measurement tolerances: P_{max} ± 5 %; V_{oc} ± 3 %; I_{sc} ± 5 %; I_{MP} ± 5 %

Reduction of module efficiency when irradiance is reduced from 1000 W/m² to 200 W/m² (at 25 °C): 4 ± 2 % (relative) / -0,6 ± 0,3 % (absolute).

Characteristic lines (Performance Class 320 Wp)

Voltage characteristic line at different temperatures and irradiances



Thermal Features

Operating temperature range	-40 ... +85 °C
Ambient temperature range	-40 ... +45 °C
Temperature coefficient P _{max}	-0,39 %/K
Temperature coefficient V _{OC}	-0,31 %/K
Temperature coefficient I _{SC}	0,05 %/K
NMOT	44 °C