SOLARWATT®
power to the people

Technical data sheet

Vision 60M

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 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.

The SOLARWATT FullCoverage insurance is included for 5 years and free of charge. It insures almost all risks and takes effect even if the modules do not produce electricity or deliver less than expected in the event of damage.

Product Quality

- **ammonia resistant**
- **intensive hailstorm resistant**
- **salt mist resistant**
- **100 % plus-sorting**
- **100 % PID protected**
- **snow-load warranty**

premium quality MADE IN GERMANY since 1993

Service

FullCoverage insurance
included (up to 1,000 kWp*)

Simple returns policy
as per „Delivery terms for SOLARWATT solar modules"

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

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

* country-specific deviations apply

Subject to change | Errors excepted
AZ-TDB-PMS-1624 | This data sheet fulfills the requirements listed in IEC 61215-1-1 | REV 001 | 04/2019 | EN

SOLARWATT GmbH | Maria-Reiche-Str. 2a | 01109 Dresden | Germany |
Tel. +49 351 8895-333 | Fax +49 351 8895-100 | www.solarwatt.com
Certified acc. to DIN EN ISO 9001, 14001, 50001 | BS OHSAS 18001:2007

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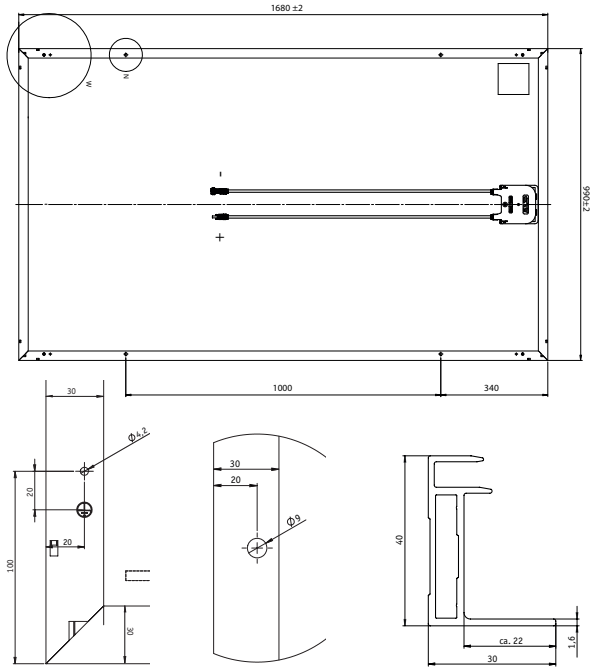
Dimensions



grounding bore hole | mounting bore hole | frame profile

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	$1{,}680^{\pm 2}$ x $990^{\pm 2}$ x $40^{\pm 0{,}3}$ mm / appr. 22,8 kg
Connection technology	Cables 2 x 1,0 m/4 mm² 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

Nominal power P_{max}	290 Wp	295 Wp
Nominal voltage V_{MP}	32,1 V	32,3 V
Nominal current I_{MP}	9,12 A	9,22 A
Open circuit voltage V_{OC}	39,5 V	39,7 V
Short circuit current I_{SC}	9,64 A	9,76 A
Module efficiency	17,6 %	17,9 %

Measurement tolerances: Pmax ±5 %; Voc ±10 %; Isc ±10 %
Reverse-current power rating Ir: 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)

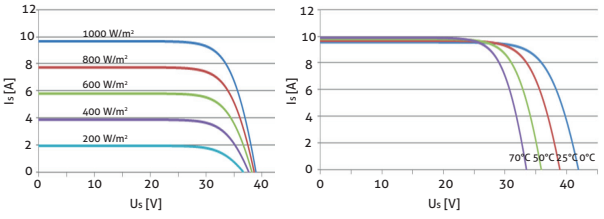
NMOT (Nominal Module Operation Temperature): Irradiation intensity 800 W/m², spectral distribution AM 1,5, Temperature 20 °C
Weak light conditions: Irradiation intensity 200 W/m², Temperature 25 °C, Wind speed 1m/s, load operation

Nominal power $P_{max\ @NMOT}$	214 W	218 W
Nominal power $P_{max\ @200\ W/m²}$	57,9 W	59,1 W

Measurement tolerances: Pmax ±5 %; Voc ±10 %; Isc ±10 %
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 290 Wp)

Voltage characteristic line at different temperatures and irradiations



Thermal Features

Operating temperature range	-40 ... +85 °C
Ambient temperature range	-40 ... +45 °C
Temperature coefficient P_{max}	-0,41 %/K
Temperature coefficient V_{OC}	-0,31 %/K
Temperature coefficient I_{SC}	0,05 %/K
NMOT	44 °C

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