

Glass-Foil-Module: Black 60M style

SOLARWATT Solar Modules

MADE IN DRESDEN BLACK 60M STYLE

- Made in Dresden - SOLARWATT solar modules are exclusively produced in Germany.
- 100 % protection against PID
- Monocrystalline high power solar cells
- 280 Wp–300 Wp (100% plus sorting)

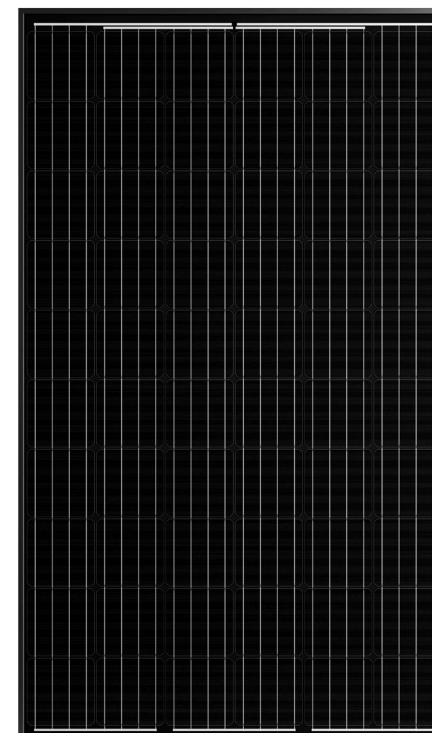
Extended warranty by purchasing SOLARWATT Full Coverage insurance

- 12 year product warranty
- All risk insurance

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

Product Quality

- long-lasting
- resilient
- high-yield
- innovative
- safe
- low-glare
- resistant against ammonia
- resistant against hail
- resistant against salt mist



SOLARWATT Service



SOLARWATT Full Coverage
optional (up to 1000 kWp)*



Simple returns policy
as per „Delivery Terms for SOLARWATT Solar Modules“

12
years

Product-warranty
as per „Warranty Conditions for SOLARWATT Solar Modules“

25
years

Performance-warranty
on 80 % of nominal power as per „Warranty Conditions for SOLARWATT Solar Modules“

Made in Germany

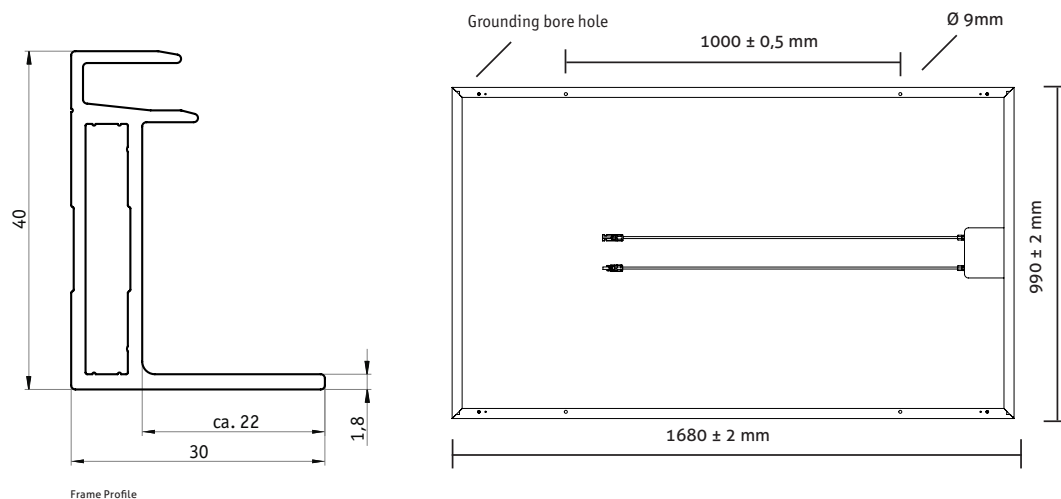
Country of origin
Quality made in Germany

* in Italy up to 50 kWp



Technical Data | Black 60M style

DIMENSIONS



GENERAL DATA

Module technology	Glass-Foil Laminate; aluminum frame, black
Covering material	Tempered solar glass with anti-reflective finish, 3,2 mm
Encapsulation	EVA-solar cells-EVA
Backing material	Multi-layer composite film, black
Solar cells	60 monocrystalline high power solar cells
Cell dimensions	156 x 156 mm
L x W x H / Weight	1680 ^{±2} x 990 ^{±2} x 40 ^{±0.3} mm / appr. 19 kg
Connection technology	Cables 2 x 1,0 m/4 mm ² , TE Connectivity PV4-S connector
Bypass diodes	3
Application class	A (acc. to IEC 61730)
Max. system voltage	1000 V
Mechanical Ratings as per IEC 61215 Ed.2	Suction load up to 2400 Pa Applied load up to 5400 Pa
Approved stress load as per SOLARWATT Installation Instructions	Applied load up to 3500 Pa (when installed crosswise ¹⁾) Test condition: sliding load of 5400 Pa (conditions take into account safety factors for snow overhang and ice load per Eurocode 1.) 1) Please refer to the specifications in the installation instructions.
Qualifications	IEC 61215 Ed.2 IEC 61730 (including Protection Class II)

ELECTRICAL DATA (STC)

STC: Standard Test Conditions: Irradiation intensity 1000 W/m², spectral distribution AM1,5 | Temperature 25±2 °C, in accordance to EN 60904-3

	280 Wp	285 Wp	290 Wp	295 Wp	300 Wp
Nominal power P _N	280 Wp	285 Wp	290 Wp	295 Wp	300 Wp
Nominal voltage U _{MPP}	31,4 V	31,6 V	31,8 V	32,0 V	32,2 V
Nominal current I _{MPP}	8,99 A	9,09 A	9,19 A	9,29 A	9,39 A
Open circuit voltage U _{OC}	39,0 V	39,3 V	39,6 V	39,9 V	40,2 V
Short circuit current I _{SC}	9,36 A	9,48 A	9,60 A	9,72 A	9,84 A
Module efficiency	17,0 %	17,3 %	17,6 %	17,9 %	18,2 %

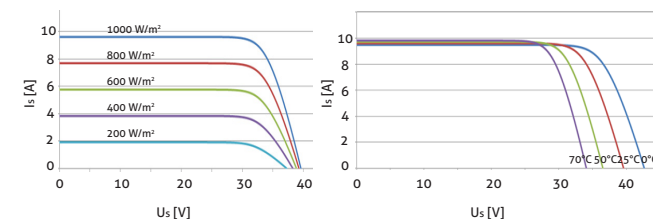
Measurement tolerance in reference to P_{max} ±5%;

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).

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.

CHARACTERISTIC LINES (Performance Class 290 Wp)

Voltage characteristic line at different temperatures and irradiances



ELECTRICAL DATA (NOCT)

NOCT: Normal Operation Cell Temperature: Irradiation intensity 800 W/m², AM 1,5 | Temperature 20 °C, Wind speed 1m/s, open circuit operation

	207 W	210 W	214 W	218 W	221 W
Nominal power P _N	207 W	210 W	214 W	218 W	221 W
Nominal voltage U _{MPP}	29,0 V	29,2 V	29,3 V	29,5 V	29,7 V
Open circuit voltage U _{OC}	36,6 V	36,9 V	37,1 V	37,4 V	37,7 V
Short circuit current I _{SC}	7,56 A	7,66 A	7,76 A	7,85 A	7,95 A

THERMAL FEATURES

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