

# Glass-Glass-Module: SOLARWATT 36M glass / XL glass



## The innovative glass-glass generation

- 19 - 32 % transparency
- Exceptionally reliable yield rates
- Improved mechanical strength
- 100% protection against PID
- Increased fire protection

## SOLARWATT 36M glass / XL glass

- Monocrystalline solar cells
- 150 - 165 Wp (100 % plus sorting)



\*Test requirements: see rear of data sheet

## SOLARWATT Service



### SOLARWATT Total Protection

included (up to 1.000 kWp)



### Take-back service

as per Delivery Terms for SOLARWATT Solar Modules



### Country of origin

Quality made in Germany

## Product Quality

long-lasting

innovative

resistant against ammonia

resilient

low-glare

resistant against hail

high-yield

safe

resistant against salt mist



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Certified acc. to DIN EN ISO 9001 und 14001 | BS OHSAS 18001:2007



### Product-warranty

as per Special Warranty Conditions for SOLARWATT Solar Modules



### Performance-warranty

as per Special Warranty Conditions for SOLARWATT Solar Modules

## SOLARWATT Expert Installer

## Technical Data Glass-Glass-Module: SOLARWATT 36M glass/XL glass

Dimensions		
	SOLARWATT 36M glass	SOLARWATT 36M XL glass
<b>Transparency</b>	19 %	32 %
<b>L x B x D</b>	1520 <sup>±2</sup> x 710 <sup>±2</sup> x 9 <sup>±1</sup> mm	1600 <sup>±2</sup> x 800 <sup>±2</sup> x 9 <sup>±1</sup> mm
<b>Weight</b>	appr. 25 kg	appr. 29 kg

Electrical Data (STC)				
STC: Standard Test   Conditions: Irradiation intensity 1000 W/m <sup>2</sup> , spectral distribution AM 1.5   temperatur 25±2 °C, in accordance EN 60904-3				
	SOLARWATT 36M glass / XL glass			
<b>Nominal power P<sub>N</sub></b>	150 Wp	155 Wp	160 Wp	165 Wp
<b>Nominal voltage U<sub>mpp</sub></b>	19,0 V	19,2 V	19,3 V	19,4 V
<b>Nominal current I<sub>mpp</sub></b>	7,90 A	8,08 A	8,41 A	8,56 A
<b>Open circuit voltage U<sub>oc</sub></b>	22,9 V	23,1 V	23,5 V	23,8 V
<b>Short circuit current I<sub>sc</sub></b>	8,31 A	8,50 A	8,87 A	9,06 A
<b>IR*</b>	20 A			
Measurement tolerance in reference to P <sub>max</sub> ±5 %;				
Reduction of module efficiency when irradiance is reduced from 1000 W/m <sup>2</sup> to 200 W/m <sup>2</sup> (at 25 °C): 4 ± 2 % (relative) / -0,6 ± 0,3 % (absolute).				
* Reverse- current power rating: Operating modules with an external power source is only permissible if using a phase fuse with a tripping current of < 20 A.				

Electrical Data (NOCT)				
NOCT: Normal Operation Cell Temperature: Irradiation intensity 800 W/m <sup>2</sup> , AM 1,5   temperatur 20 °C, Wind speed 1m/s, open circuit operation				
	SOLARWATT 36M glass / XL glass			
<b>Nominal power P<sub>N</sub></b>	112 W	116 W	122 W	125 W
<b>Nominal voltage U<sub>mpp</sub></b>	17,6 V	17,8 V	17,9 V	18,0 V
<b>Nominal circuit voltage U<sub>oc</sub></b>	21,3 V	21,4 V	21,8 V	22,1 V
<b>Short circuit current I<sub>sc</sub></b>	6,71 A	6,87 A	7,17 A	7,32 V

General Data	
<b>Module technology</b>	Glass-glass-laminate
<b>Covering material</b>	High-transparency partially pre-tensioned floating glass, 4 mm
<b>Encapsulation</b>	EVA-solar cells-EVA
<b>Backing material</b>	Partially pre-tensioned floating glass, 4mm
<b>Solar cells</b>	36 monocrystalline solar cells
<b>Cell dimensions</b>	156 x 156 mm
<b>Bypass diodes</b>	2
<b>Application class</b>	Application class A (acc. to IEC 61730)
<b>Max. system voltage</b>	1000 V
<b>Mechanical Ratings</b> as per IEC 61215 Ed.	Suction load up to 2,400 Pa Applied load up to 6,000 Pa
<b>Connection technology</b>	Cable 2 x 0,4 m/4 mm <sup>2</sup> , MC4-Connector
<b>Qualifications</b>	IEC 61215 Ed.2   IEC 61730 (including Protection Class II)

Characteristic Lines	
Voltage characteristic line at different temperatures and irradiation	
Performance class 165 Wp SOLARWATT 36M glass/ XL glass	

Thermal Features	
	SOLARWATT 36M glass/ XL glass
<b>Operating temperature range</b>	-40 ... +85 °C
<b>Ambient temperature range</b>	-40 ... +45 °C
<b>Temperature coefficient P<sub>N</sub></b>	-0,40%/K
<b>Temperature coefficient U<sub>oc</sub></b>	-0,32%/K
<b>Temperature coefficient I<sub>sc</sub></b>	0,05%/K
<b>NOCT</b>	45 °C