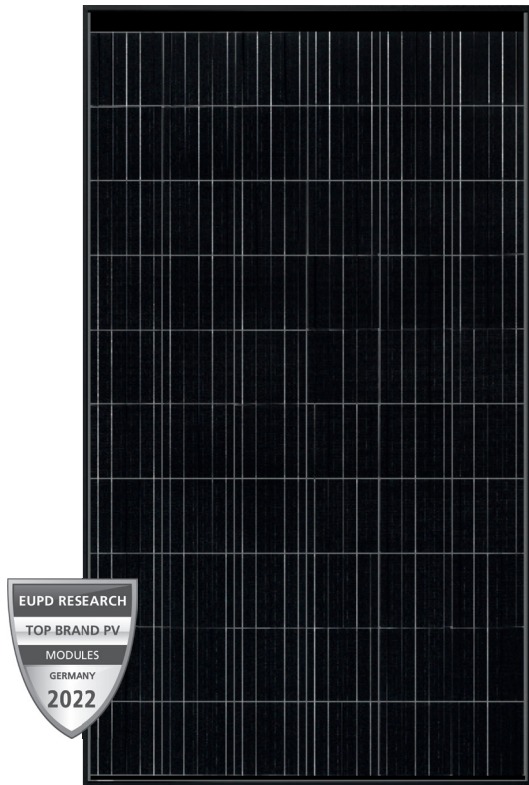


## PRODUCT



# Vision 60M style (black edition) 320-325 Wp

## Glass-glass module

### Black design for excellent appearance

The Vision 60M style black edition is characterized by the uniform black appearance of this glass-glass solar panel. With its covered cell connectors at the ends, this panel appears completely black. Combined with a black frame and transparent tempered solar glass, this solar panel visually blends into the roof - making it an excellent choice for pitched roofs.

Thanks to years of experience, the use of best components and a fully automated production process, Solarwatt's glass modules deliver the highest yields for decades. Our commitment to quality results in robust and highly resilient solar modules.

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

- covered cell connectors
- 100 % plus-sorting
- ammonia resistant
- intensive hailstorm resistant

## SERVICE

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

**Simple returns policy**  
as per „Delivery terms for Solarwatt solar modules“

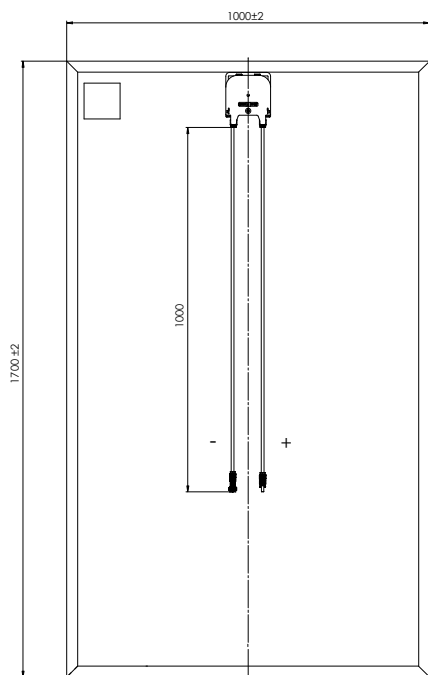
**30 Years Product Warranty**  
as per „Warranty conditions for Solarwatt solar modules“

**30 Years Performance Warranty**  
on 87 % of nominal power as per „Warranty conditions for Solarwatt solar modules“

\* country-specific deviations apply



## DIMENSIONS



dimensions in mm

## GENERAL DATA

<b>Module technology</b>	Glass-glass laminate; aluminum frame, black
<b>Covering material</b>	Tempered solar glass with anti-reflective finish, 2 mm
<b>Encapsulation</b>	Solar cells in polymer encapsulation, transparent
<b>Backing material</b>	Tempered glass, 2 mm
<b>Transparent areas</b>	ca. 5.0 %
<b>Solar cells</b>	60 monocrystalline high power PERC-solar cells
<b>Cell dimensions</b>	159 x 159 mm
<b>L x W x H / Weight</b>	1,700 <sup>±2</sup> x 1,000 <sup>±2</sup> x 35 <sup>±0.3</sup> mm / appr. 22.0 <sup>±0.5</sup> kg
<b>Connection technology</b>	Cables 2 x 1.0 m / 4 mm <sup>2</sup> Stäubli Electrical MC4-connectors
<b>Bypass diodes</b>	3
<b>Max. system voltage</b>	1,000 V
<b>IP rating</b>	IP67
<b>Protection class</b>	II (acc. to IEC 61140)
<b>Fire class</b>	C (acc. to IEC 61730/UL 790)
<b>Certified mechanical ratings as per IEC 61215</b>	Pressure load up to 5,400 Pa (test load 8,100 Pa) Suction load up to 2,400 Pa (test load 3,600 Pa)
<b>Recommended stress load as per Installation Instructions</b>	Please refer to the specifications in the Installation Instructions and Warranty Conditions.
<b>Qualifications</b>	IEC 61215   IEC 61730

## ELECTRICAL DATA (STC)

STC (Standard Test Conditions): Irradiation intensity 1,000 W/m<sup>2</sup>, spectral distribution AM 1.5 | Temperature 25 ± 2 °C, in accordance to EN 60904-3

<b>Nominal power P<sub>max</sub></b>	320 Wp	325 Wp
<b>Nominal voltage V<sub>mp</sub></b>	33.6 V	33.9 V
<b>Nominal current I<sub>mp</sub></b>	9.52 A	9.60 A
<b>Open circuit voltage V<sub>oc</sub></b>	40.2 V	40.4 V
<b>Short circuit current I<sub>sc</sub></b>	10.20 A	10.31 A
<b>Module efficiency</b>	18.8 %	19.1 %

Measurement tolerances: P<sub>max</sub> ±5 %; V<sub>oc</sub> ±10 %; I<sub>sc</sub> ±10 %, I<sub>mp</sub> ±10 %

Reverse-current power rating I<sub>r</sub>: 15 A, operating modules with an external power source is only permissible if using a phase fuse with a tripping current of ≤ 15 A.

## ELECTRICAL DATA (NMOT AND WEAK LIGHT)

**NMOT (Nominal Module Operating Temperature):** Irradiation intensity 800 W/m<sup>2</sup>, spectral distribution AM 1.5, Temperature 20 °C  
**Weak light conditions:** Irradiation intensity 200 W/m<sup>2</sup>, Temperature 25 °C, Wind speed 1 m/s, load operating

<b>Nominal power P<sub>max@NMOT</sub></b>	250 W	254 W
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Measurement tolerances: P<sub>max</sub> ±5 %; V<sub>oc</sub> ±10 %; I<sub>sc</sub> ±10 %, I<sub>mp</sub> ±10 %.

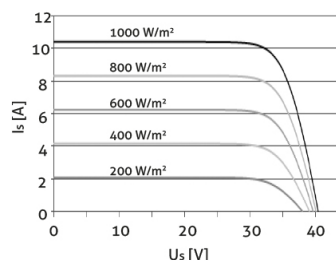
Reduction of module efficiency when irradiance is reduced from 1,000 W/m<sup>2</sup> to 200 W/m<sup>2</sup> (at 25 °C): 4 ± 2 % (relative) / -0.6 ± 0.3 % (absolute).

## THERMAL FEATURES

<b>Operating temperature range</b>	-40 ... +85 °C
<b>Ambient temperature range</b>	-40 ... +45 °C
<b>Temperature coefficient P<sub>max</sub></b>	-0.39 %/K
<b>Temperature coefficient V<sub>oc</sub></b>	-0.28 %/K
<b>Temperature coefficient I<sub>sc</sub></b>	0.04 %/K
<b>NMOT</b>	45 °C

## CHARACTERISTIC LINES (PERFORMANCE CLASS 325 WP)

Voltage characteristic line at different temperatures and irradiances



## TRANSPORT AND PACKAGING

<b>Modules per pallet</b>	30
<b>Pallet dimensions (packing size)</b>	1,750 x 1,050 x 1,300 mm
<b>Gross weight per pallet</b>	ca. 695 kg (max.)
<b>Pallets per truck</b>	15 / 30
<b>Modules per truck</b>	450 / 900