

# Sunmodule<sup>®</sup> Protect 360° SW 275 duo



## Data sheet



Produced in Germany,  
the center for solar technology



TUV Power controlled:  
Lowest measuring tolerance in industry



Above average weather-resistance and  
robustness



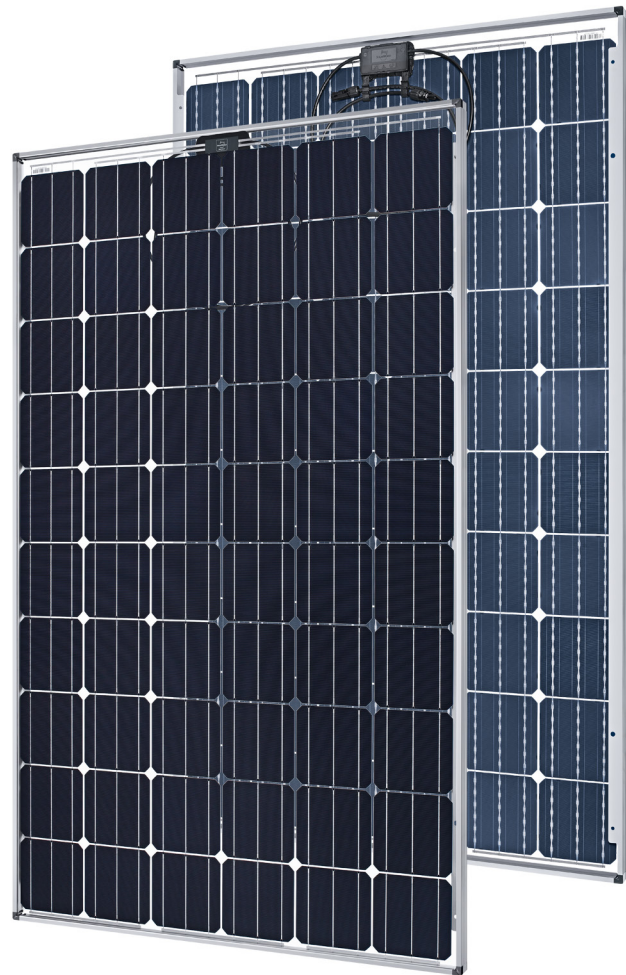
Up to 25 % energy boost through use of  
highly efficient duo cells



Sunmodule Protect:  
Positive performance tolerance



30 year linear performance warranty and  
10 year product warranty



SolarWorld AG relies on Germany as its technology location, thereby ensuring sustainable product quality.

The TUV Rheinland Power controlled inspection mark guarantees that the nominal power indicated for solar modules is inspected at regular intervals and thus ensured. The deviation to TUV is maximum 2 percent.

Innovative glass technologies on front- and backside make extremely weather-resistant and robust solar modules possible. The Sunmodule Protect offers higher mechanical resilience and a longer service life.

Up to 25 % more yield thanks to the use of highly efficient duo cells - an innovative development based on PERC cell technology. Those bifacial cells convert the sunlight from all directions into power through their active back side.

SolarWorld is setting new standards with the groundbreaking 30-year linear performance guarantee: a maximum degradation of just 0.35% p.a. provides guaranteed module performance of 90% after 21 years, and 86.85% after 30 years.

# Sunmodule® Protect 360° SW 275 duo



## PERFORMANCE UNDER OPTIMIZED CONDITIONS

Energy boost		6 %	10 %	20 %	25 %
Maximum power	$P_{max}$	290 Wp	300 Wp	325 Wp	337 Wp
Open circuit voltage	$U_{oc}$	39.1 V	39.1 V	39.1 V	39.1 V
Maximum power point voltage	$U_{mpp}$	31.5 V	31.4 V	31.2 V	31.0 V
Short circuit current	$I_{sc}$	10.08 A	10.46 A	11.41 A	11.89 A
Maximum power point current	$I_{mpp}$	9.21 A	9.56 A	10.43 A	10.86 A
Module efficiency	$\eta_m$	17.30 %	17.90 %	19.38 %	20.10 %

## PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC)\*

Maximum power	$P_{max}$	275 Wp
Open circuit voltage	$U_{oc}$	39.1 V
Maximum power point voltage	$U_{mpp}$	31.7 V
Short circuit current	$I_{sc}$	9.51 A
Maximum power point current	$I_{mpp}$	8.69 A
Module efficiency	$\eta_m$	16.40 %

Measuring tolerance ( $P_{max}$ ) traceable to TUV Rheinland: +/- 2 % (TUV Power controlled)

\*STC: 1000 W/m<sup>2</sup>, 25° C, AM 1.5

## PERFORMANCE AT 800 W/m<sup>2</sup>, NOCT, AM 1.5

Maximum power	$P_{max}$	205 Wp
Open circuit voltage	$U_{oc}$	35.7 V
Maximum power point voltage	$U_{mpp}$	28.9 V
Short circuit current	$I_{sc}$	7.68 A
Maximum power point current	$I_{mpp}$	7.02 A
Module efficiency	$\eta_m$	12.24 %

Minor reduction in efficiency under partial load conditions at 25°C: at 200 W/m<sup>2</sup>, 100% (+/-2%) of the STC efficiency (1000 W/m<sup>2</sup>) is achieved.

## COMPONENT MATERIALS

Cells per module	60
Cell type	bifacial duo
Cell dimensions	156 mm x 156 mm
Front	Heat strengthened glass (EN 1863-1)
Back	Heat strengthened glass (EN 1863-1)
Frame	clear anodized aluminum
J-Box	IP65
Connector	H4

## DIMENSIONS / WEIGHT

Length	1675 mm
Width	1001 mm
Height	33 mm
Weight	21.5 kg

## THERMAL CHARACTERISTICS

NOCT	48 °C
TK $I_{sc}$	0.044 %/K
TK $U_{oc}$	-0.31 %/K
TK $P_{mpp}$	-0.43 %/K

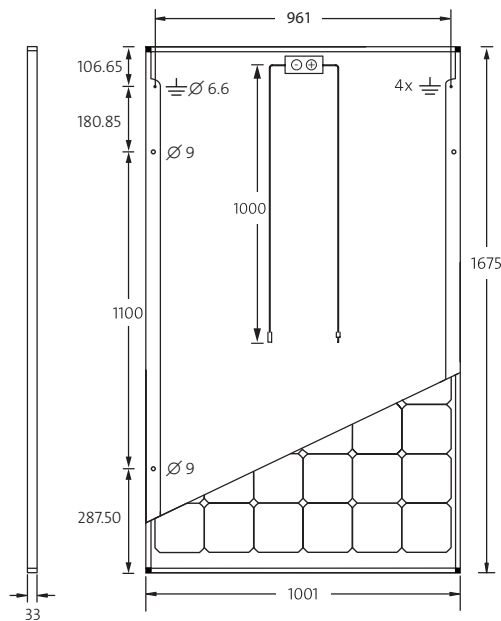
## PARAMETERS FOR OPTIMAL SYSTEM INTEGRATION

Power sorting	-0 Wp / +5 Wp
Maximum system voltage SC II	1000 V
Maximum reverse current	25 A
Load / dynamic load	5.4 / 2.4 kN/m <sup>2</sup>
Number of bypass diodes	3
Operating range	-40°C to +85°C

## INSTALLATION PARAMETERS FOR MAXIMUM YIELD

For maximum system yield and optimum performance ratio we recommend the following installation guide lines:

- Highly reflective background surface like white concrete, bright roof covering membrane, trapezoidal roof or limestone ground
- Maximize module distance to ground
- Mounting system with low shading of backside
- Sufficient distance between rows to avoid shading
- Prefer landscape mounting



SolarWorld AG reserves the right to make specification changes without notice.  
This data sheet complies with the requirements of EN 50380.

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