Sunmodule® Bisun protect 290

SOLARWORLD
REAL VALUE

Data sheet

QUALITY BY SOLARWORLD

SolarWorld's foundation is built on more than 40 years of ongoing innovation, continuous optimization and technology expertise. All production steps from silicon to module are established at our production sites ensuring the highest possible quality for our customers. Our modules come in a variety of different sizes and power, making them suitable for all global applications – from residential solar systems to large-scale power plants.

- SolarWorld's new Sunmodule Bisun protect solar panel offers up to 25% more yield thanks to the use of our latest, highly efficient PERC cell technology combined with SolarWorld duo cells. The duo cells are active on both the front and back, making them capable of converting light from all directions into power
- The use of glass on the front and back of the module allows for optimal protection against mechanical loads and environmental factors
- Extremely tough and stable, despite its light weight – able to handle loads up to 178 psf (8.5 kN/m²)
- Tested in extreme weather conditions – hail-impact tested and resistant to salt spray, frost, ammonia, dust and sand
- Proven guarantee against hotspots and PID-free to IEC 62804-1
- SolarWorld Efficell™ PERC duo-cell technology for the highest possible energy yields
- Patented corner design with integrated drainage for optimized self-cleaning
- High-transmissive front glass with anti-reflective coating
- Long-term safety and guaranteed top performance – 30-year linear performance warranty; 20-year product warranty

High Quality Engineering by SolarWorld

VDE 10/2016 Quality Tested
✓ high reliability
✓ low degradation
✓ optimized durability
✓ continuous line monitoring
ID. 40045046

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PERFORMANCE UNDER OPTIMIZED CONDITIONS

Energy boost		6 %	10 %	20 %	25 %
Maximum power	P_{max}	313.8 Wp	325.2 Wp	353.5 Wp	367.5 Wp
Open circuit voltage	V_{oc}	39.70 V	39.70 V	39.50 V	39.50 V
Maximum power point voltage	V_{mpp}	32.10 V	32.10 V	32.00 V	31.90 V
Short circuit current	I_{sc}	10.33 A	10.72 A	11.69 A	12.18 A
Maximum power point current	I_{mpp}	9.77 A	10.14 A	11.06 A	11.52 A
Module efficiency	η_m	18.72 %	19.4 %	21.08 %	21.92 %

Consistent with BIFI16 according to IEC 60904-1-2

PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC)*

Maximum power	P_{max}	290 Wp
Open circuit voltage	V_{oc}	39.8 V
Maximum power point voltage	V_{mpp}	32.2 V
Short circuit current	I_{sc}	9.65 A
Maximum power point current	I_{mpp}	9.12 A
Module efficiency	η_m	17.30 %

Measuring tolerance (P_{max}) traceable to TUV Rheinland: +/- 2%
(TUV Power controlled, ID 0000039351)

*STC: 1000W/m², 25 °C, AM 1.5

PERFORMANCE AT 800 W/m², NOCT, AM 1.5

Maximum power	P_{max}	219.5 Wp
Open circuit voltage	V_{oc}	36.8 V
Maximum power point voltage	V_{mpp}	29.8 V
Short circuit current	I_{sc}	7.90 A
Maximum power point current	I_{mpp}	7.37 A
Module efficiency	η_m	13.09 %

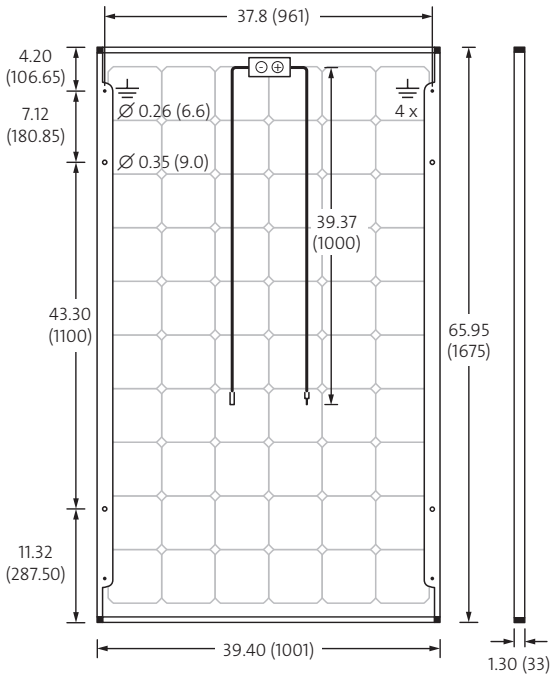
Minor reduction in efficiency under partial load conditions at 25 °C: at 200 W/m², 97% (+/-3%) of the STC efficiency (1000 W/m²) is achieved.

PARAMETERS FOR OPTIMAL SYSTEM INTEGRATION

Power sorting	-0 Wp / +10 Wp
Maximum system voltage SC II / NEC	1000 V
Maximum reverse current	25 A
Number of bypass diodes	3
Operating temperature	-40 to +85 °C
Maximum design loads (Two rail system)*	113 psf downward, 64 psf upward
Maximum design loads (Three rail system)*	178 psf downward, 64 psf upward

*Please refer to the Sunmodule installation instructions for the details associated with these load cases.

ISO 9001
ISO 14001
Certified



All units provided are imperial. SI units provided in parentheses.

COMPONENT MATERIALS

Cells per module	60
Cell type	Bifacial duo
Cell dimensions	6 in x 6 in (156 mm x 156 mm)
Front	Heat-strengthened glass with ARC (EN 1863-1)
Back	Heat-strengthened glass (EN 1863-1)
Frame	Black anodized aluminum
J-Box	IP65
Connector	PV wire (UL4703) with Amphenol UTX connectors
Module fire performance	(UL 1703) Type 3

DIMENSIONS / WEIGHT

Length	65.95 in (1675 mm)
Width	39.40 in (1001 mm)
Height	1.30 in (33 mm)
Weight	47.4 lb (21.5 kg)

THERMAL CHARACTERISTICS

NOCT	46 °C
TC I_{sc}	0.06 % /C
TC V_{oc}	-0.29 % /C
TC P_{mpp}	-0.40 % /C

ORDERING INFORMATION

Order number	***Description***
82000590	Sunmodule Bisun protect 290

CERTIFICATES AND WARRANTIES

Certificates	IEC 61730	IEC 61215	UL 1703
	IEC 62716	IEC 60068-2-68	IEC 61701
Warranties*	Product Warranty		20 years
	Linear Performance Guarantee		30 years

**Supplemental warranty coverage available through SolarWorld Assurance™ Warranty Protection Program – www.solarworld.com/assurance*

SW-01-7129US-G 20170622