



## Better Solar

### PowerLine Plus Economy GSP6-72 305W-325W

German engineered, PowerLine Plus modules are designed and built to achieve top quality performance, maximize energy production and ensure long-lasting durability. Each PowerLine Plus module is assembled with our automated manufacturing processes. And the PowerLine Plus surpasses strict in-house and independent testing, guaranteeing the high level of quality our engineers stand behind.

## Highlights

- Up to 4.99 W more module performance because of positive classes
- Flash data for every panel
- 12-year product warranty
- 25-year linear performance warranty
- Potential induced degradation (PID) Free
- Effective hotspot-prevention processes ensure durability
- More power due to better power tolerance:  $\pm 3\%$
- Improved water and snow runoff with chamfered frame drainage and snow runoff
- Better performance in diffused sunlight and high temperature
- High ammonia and salt mist resistance certified
- Glass with anti-reflective coating
- Individual testing and surveying, quality assurance by permanent production control incl. EL-test
- UV stabilized, aesthetically pleasing black anodized frame
- Best price-performance ratio

### Built-in durability

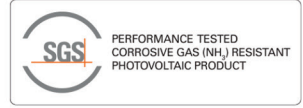
GermanSolar only uses cell materials from leading premium cell manufacturers. To eliminate the possibility of hotspot formation thoroughly, strict control-criteria mandate a thermal picture of each cell before and after processing.

### Positive classes: (-0/+4.99)

All GermanSolar modules are positively classed. Each PowerLine Plus module is up to 4.99 Wp above its rated power. So no matter what PowerLine Plus module you choose, you are guaranteed up to 4.99 Wp more.

### 25-year linear performance warranty

Our 25-year linear performance warranty covers for power loss less than 3% in the first year and only 0.35% degradation per year thereafter.

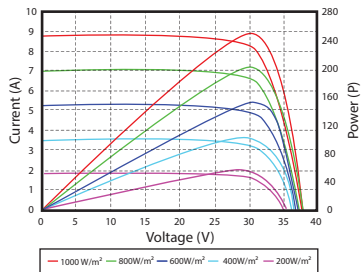


## Description

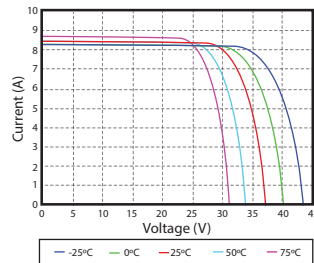
Item	Module Type GSP6 305/310/315/320/325W					
<b>Electrical parameters at STC</b>						
Maximum Power	Pmax(W)	305W	310W	315W	320W	325W
Power Tolerance	W	0-+5W	0-+5W	0-+5W	0-+5W	0-+5W
Tolerance	(%)	±3%	±3%	±3%	±3%	±3%
Open Circuit Voltage	Voc(V)	45.60	45.80	45.90	46.20	46.40
Short Circuit Current	Isc(A)	9.05	9.08	9.17	9.20	9.25
Maximum Power Voltage	Vmpp(V)	37.40	37.7	37.90	38.40	38.80
Maximum Power Current	Imp(A)	8.16	8.22	8.31	8.33	8.37
Module Efficiency	(%)	15.70	16.00	16.20	16.50	16.80
Solar Cell Efficiency	(%)	17.70	18.10	18.30	18.60	18.90
STC: Irradiance 1000W/m <sup>2</sup> , Cell temperature 25°C, AM1.5						
<b>Electrical parameters at NOCT</b>						
Maximum Power	Pmax(W)	226W	231W	233W	237W	241W
Open Circuit Voltage	Voc(V)	42.4	42.7	42.8	43.2	43.4
Short Circuit Current	Isc(A)	7.23	7.26	7.28	7.33	7.38
Maximum Power Voltage	Vmpp(V)	34.1	34.4	34.7	34.9	35.3
Maximum Power Current	Imp(A)	6.62	6.69	6.71	6.78	6.83
NOCT: Irradiance 800W/m <sup>2</sup> , Ambient temperature 20°C, Wind speed 1 m/s						
<b>Mechanical Characteristics</b>						
Cell Type	(mm)	156 x 156(Poly-Crystalline Silicon)				
Number of Cells	(Pcs)	72				
Maximum System Voltage	(V)	DC1000				
Temp. Coeff of Voc	(%/K)	-0.33%/K				
Temp. Coeff of Isc	(%/K)	+0.05%/K				
Temp. Coeff. Of Pmax	(%/K)	-0.43%/K				
Operating Temperature	(°C)	-40°C to +85°C				
Nominal Operating Cell Temperature	(°C)	47±2				
Max Series Fuse	(A)	15				
Insulation	(MΩ)	50				
Wind Bearing	(Pa)	≤5400				
Pressure Bearing	(Pa)	≤2400				

NOCT**	47°C ±2°C
Module efficiency reduction at 200 W/m <sup>2</sup> ***	-0.6 (±0.3)% abs
Max. System Voltage	1000 V DC
IP Protection Level	IP 65
Module Technology	Glass-Foil Laminate with anodized aluminum frame
Module Design	Cover material: Solar glass with antireflection surface treatment, 0.13 in (3.2mm); Encapsulation: EVA-Solar Cells -EVA; Back material
No. and Type of Solar Cells	72 crystalline solar cells 6.14 x 6.14 in (156 x 156 mm) 0.007 in ± 1.18 x 103 (180 um ± 30 μm)
Cables	Junction box with MC4 connectors, cables: 2 x 3.28 ft/0.006 in2 (2 x 1 m/4 mm <sup>2</sup> )
Junction Box	IP 67 rated, with 3 bypass diodes
Dimensions (LxWxH)	77.01 x 39.05 x 1.57 in (1956 x 992 x 40mm)
Weight	58.42 lbs/ 26.5 kg
Operating Temperature Range	-40 ... +185°F (-40 ... +85°C)
Ambient Temperature Range	-40 ... +113°F (-40 ... +45°C)
Mechanical Ratings	Suction pressure and load of 50 lb/ft <sup>2</sup> (2400 Pa) approved (Wind speed 81 mph (130 km/h) with safety factor 3), load of 5400 Pa approved
Certification	IEC 61215 : 2005 IEC 61730 -1/-2 : 2004 IEC 61701 : 1995 (salt mist resistant) DLG Focus Test (ammonia resistant) UL 1703 approved ETL UL 1703 : Type 1 Fire-Rating Fire Class: C FSEC listing UNI 9177 Class 1 EN 13501- 1 Class E
Positive Sorting	-0 Wp / +4.99 Wp
Pallet Dimensions in weight / size	1671.1 lbs (82.68 x 44.49 x 45.28) inches 26 modules per pallet
Module Qty per Container	572pcs/40'HQ
Product Warranty	12 years
Performance Warranty	25 years, according to the Warranty Conditions of GermanSolar Linear Warranty

## I-V Curves

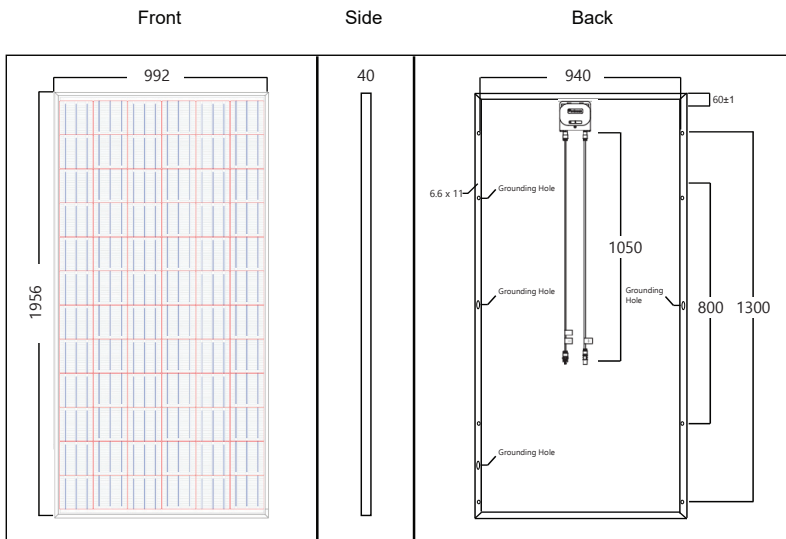


Current-Voltage and Power-Voltage Curves at Different Irradiances



Current-Voltage Curves at Different Temperatures

## PHYSICAL CHARACTERISTICS Unit: mm



## 25-Year Linear Performance Warranty

