

# TwinPlus True Black

## 310-320W

- PID** Anti-PID
- 25 YEARS** 15-year product warranty  
25-year linear performance warranty
- Outstanding performance in weak-light conditions
- Excellent temperature coefficient gives higher yields in the long term



### ELECTRICAL TYPICAL VALUES

Model	PS310M-20/UH PS310MH-20/UH	PS315M-20/UH PS315MH-20/UH	PS320M-20/UH PS320MH-20/UH
Type	Monocrystalline 6 inch x 3 inch square		
Rated Power (Pmpp)	310W	315W	320W
Tolerance	0~+5w		
Rated Current (Impp)	9.22	9.31	9.39
Rated Voltage (Vmpp)	33.63	33.84	34.08
Short Circuit Current (Isc)	9.67	9.76	9.85
Open Circuit Voltage (Voc)	39.90	40.11	40.35
Module Efficiency (%)	18.66	18.96	19.26
NOCT (Nominal Operation Cell Temperature)	43±2°C		
Voltage Temperature Coefficient	-0.286%/°C		
Current Temperature Coefficient	+0.051%/°C		
Power Temperature Coefficient	-0.368%/°C		

### MECHANICAL CHARACTERISTICS

Length	1675mm (65.95 inch)
Dimension (L x W x H)	Width: 992mm (39.06 inch) Height: 35mm (1.38 inch)
Weight	18.5kg (40.78 lbs)
Front Glass	3.2mm toughened glass
Frame	Anodized aluminium alloy
Cable	4mm <sup>2</sup> (IEC) , Length:350mm (vertical) 1150mm (horizontal) or Customized length
Junction Box	IP 68 rated

### ABSOLUTE MAXIMUM RATING

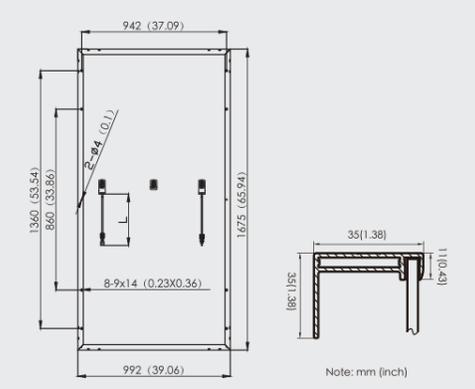
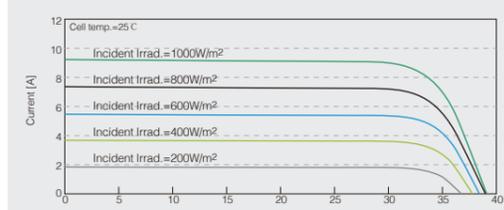
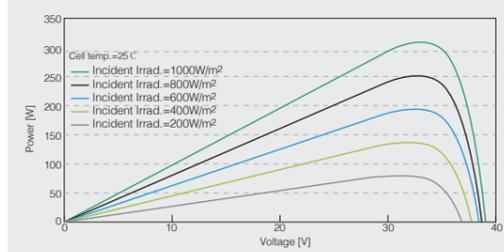
Parameter	Values
Operating Temperature	From -40 to +85°C
Hail Diameter @ 80km/h	Up to 25mm
Surface Maximum Load Capacity	Up to 5400Pa
Maximum Series Fuse Rating	20A
Application Class and Safety Class	II
Fire Rating (IEC61730)	C
Module Fire Performance (UL 1703)	Type1
Maximum System Voltage	DC 1000V/1500V (IEC/ETL)

### PACKING CONFIGURATION

Container	20' GP	40' HQ
Pieces/Container	312	832

- In compliance with our warranty terms and conditions.
- Measurement conditions under irradiance level of Standard Test Conditions(STC): 1000W/m<sup>2</sup>  
Air mass 1.5 Spectrum, cell temperature of 25°C.

### ELECTRICAL CHARACTERISTICS

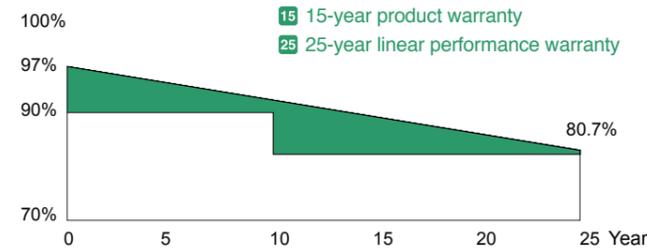


## MORE RELIABILITY

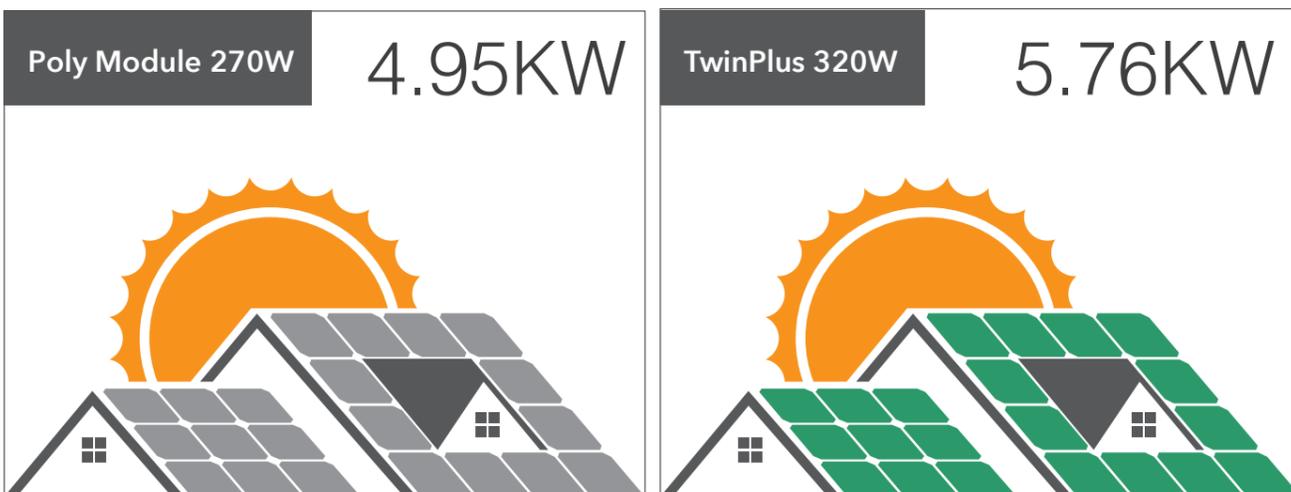


### Certified Quality Brings You More Reliability

- Less shading effect
- Minimizes micro-cracks
- Lower hot spot temperature
- Low power loss in cell connection
- IP68 connectors enhance the reliability of the PV system
- Heavy snow load up to 5400 Pa, wind load up to 2400 Pa

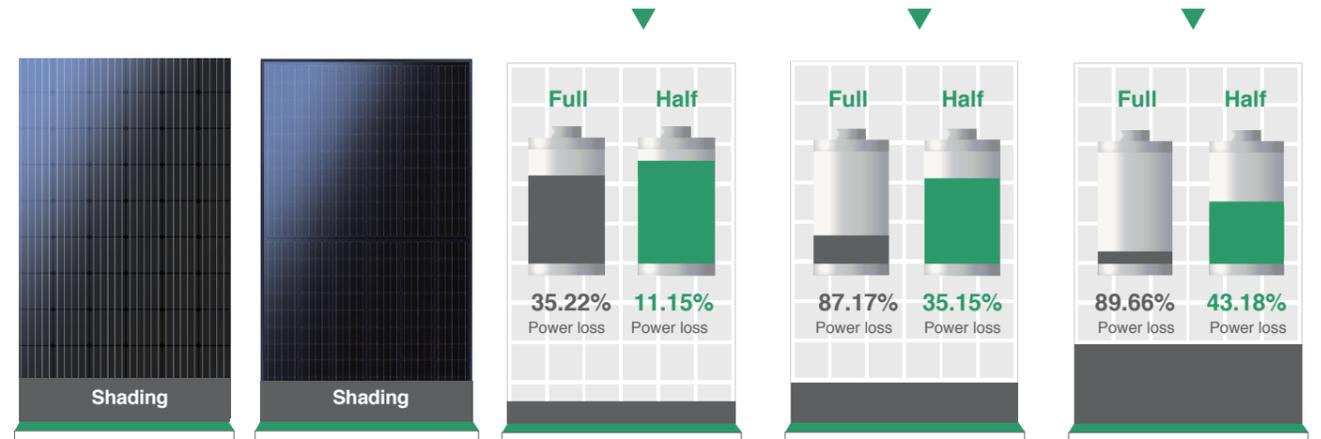


## MORE POWER FROM HIGH MODULE EFFICIENCY



## BETTER SHADING PERFORMANCE

TYPE	VALUES	A	B	C	D
Full cell module	Rated Power	305w	198w	40w	32w
	Power loss	0	35.22%	87.17%	89.66%
Half cell module	Rated Power	320w	284w	208w	182w
	Power loss	0	11.15%	35.15%	43.18%

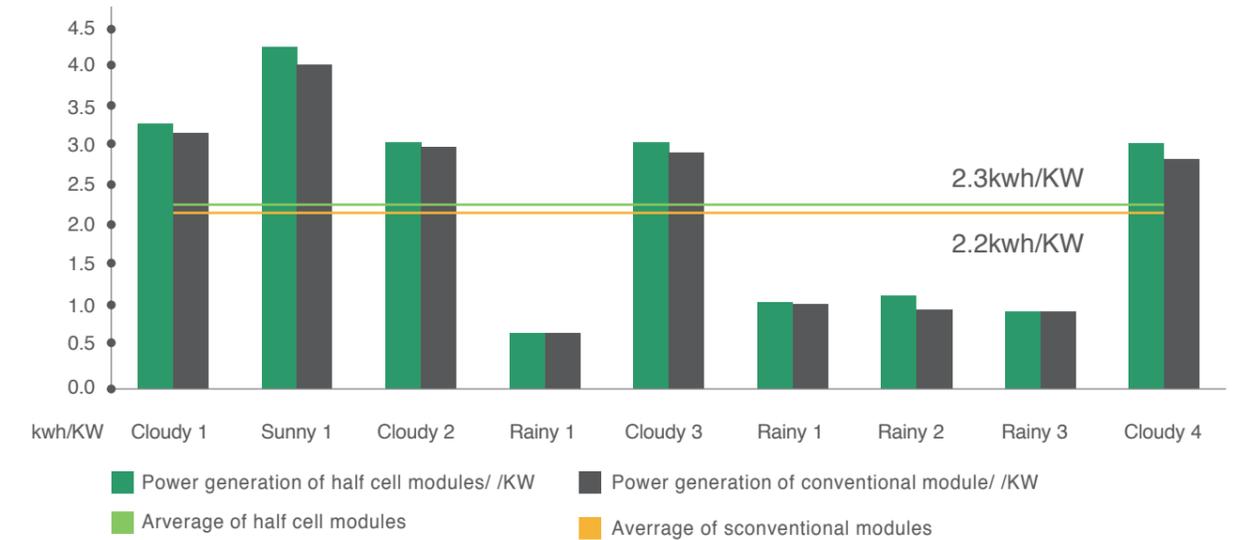


The low current can significantly reduce the risk of hot spot, increase durability and avoid damages to modules because of shading, which makes Phono Solar TwinPlus module a perfect solution for rooftops.

## BETTER OUTDOOR PERFORMANCE

Low temperature coefficient of Phono TwinPlus module can bring more power generation at high operating temperatures. According to weekly power generation experimental data in the table below, half cell modules can generate 4.64% additional power in average.\*

### Power Generation Comparison



\* The data above is based on the outdoor environment located in Nanjing China. The test time is from 10am to 15pm. Data may vary in different environments.