

ABOUT PHONO SOLAR

Phono Solar Technology Co., Ltd. is one of the world's leading renewable energy product manufacturers and a well trusted brand provider. The Phono Solar brand has become synonymous with high performing, top quality photovoltaic panels that are ideal for use in large scale power plants, commercial and residential installations.



Outstanding performance in weak-light conditions



Anti-PID^[1]



Excellent temperature coefficient giving higher yields in the long term



IP68 connectors enhance the reliability of the PV system



Positive current sorting



Certified to withstand increased loads of up to 5400Pa



10-year product warranty
25-year performance warranty^[2]

Durability assured:



Salt mist corrosion certification



Ammonia corrosion certification



Fire test certification

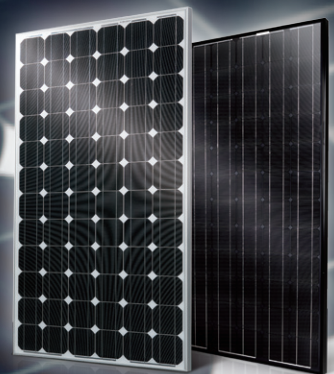


Blowing sand resistance certification

- Manufacturing facility certified by ISO 9001, ISO 14001 and OHSAS 18001
- Internal quality control has standards higher than both IEC and UL

- Product quality is assured through the use of branded components
- Free module recycling through PV Cycle Association membership^[3]

HIGH PERFORMANCE
SOLAR MODULES
190W-210W



Diamond Series

Onyx Series



MECHANICAL CHARACTERISTICS

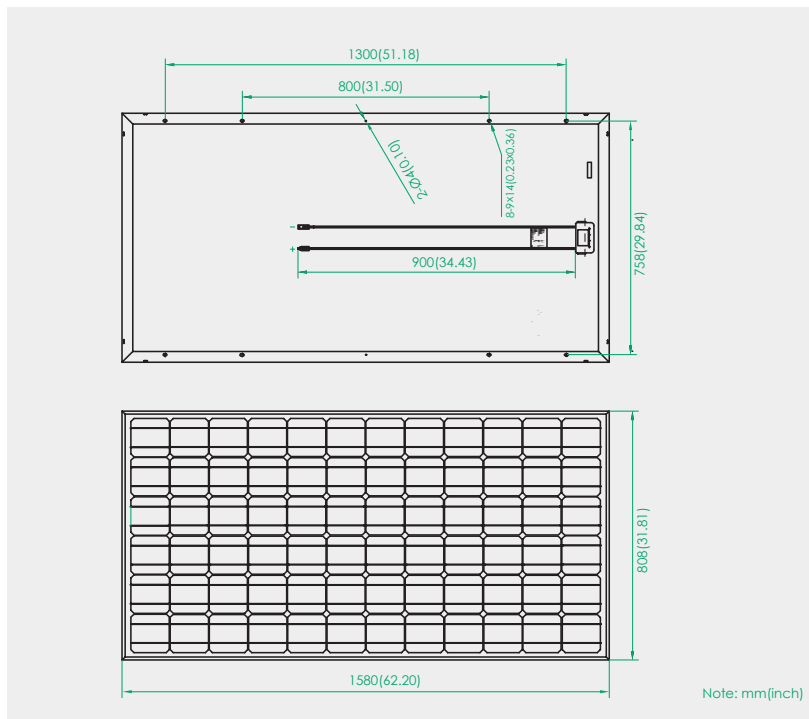
Solar Cells	Monocrystalline 125mm × 125mm square, 6 × 12 pieces in series
Dimension	Length: 1580mm (62.2 inch)
	Width: 808mm (31.8 inch)
	Height: 35mm (1.4 inch)
Weight	15kg (33lbs)
Front Glass	3.2mm toughened glass
Frame	Anodized aluminium alloy
Cable	4mm ² (IEC) / 12AWG(UL), 900mm
Junction Box	IP 67 rated

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	10A
IEC Application Class (IEC61730)	A
Fire Rating (UL 1703)	C
Maximum System Voltage	DC 1000V(IEC)
	DC 600V(UL)/1000V(ETL)

ELECTRICAL TYPICAL VALUES^{[4],[5]}

Model	Rated Power (P _{mpp})	Rated Current (I _{mpp})	Rated Voltage (V _{mpp})	Short Circuit Current (I _{sc})	Open Circuit Voltage (V _{oc})	Module Efficiency (%)
PS190M-24/F	190W	5.14A	37.0V	5.45A	45.0V	14.88
PS195M-24/F	195W	5.22A	37.4V	5.50A	45.2V	15.27
PS200M-24/F	200W	5.30A	37.8V	5.55A	45.4V	15.67
PS205M-24/F	205W	5.38A	38.2V	5.60A	45.6V	16.06
PS210M-24/F	210W	5.46A	38.6V	5.65A	45.8V	16.45

DIMENSIONS



TEMPERATURE CHARACTERISTICS

NOCT (Nominal Operation Cell Temperature)	45°C ± 2°C
Voltage Temperature Coefficient	-0.33%/K
Current Temperature Coefficient	+0.06%/K
Power Temperature Coefficient	-0.43%/K

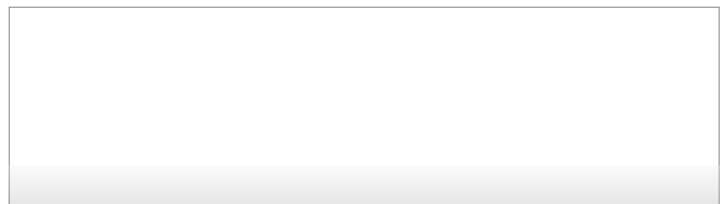
WEAK LIGHT PERFORMANCE

Intensity [W/m ²]	I _{mpp}	V _{mpp}
1000	1.0	1.000
800	0.8	0.996
600	0.6	0.990
400	0.4	0.983
200	0.2	0.952

PACKING CONFIGURATION

Container	40' GP
Pieces per pallet	27
Pallets per container	28
Pieces per container	756

PARTNER INFORMATION



Note: This datasheet is not legally binding. Phono Solar reserves the right to make specifications changes without notice. Further information can be found on our website: www.phonosolar.com

1. Anti-PID modules are only available upon request.
2. In compliance with our warranty terms and conditions.
3. In PV Cycle member countries only, see: www.pvcycle.org
4. Defined as standard deviation of thousands measurements. Absolute power values depend on the measuring system. They can differ by +/-5% from one measuring system to another.
5. Measurement conditions under irradiance level of Standard Test Conditions(STC): 1000W/m², Air mass 1.5 Spectrum, cell temperature of 25°C.