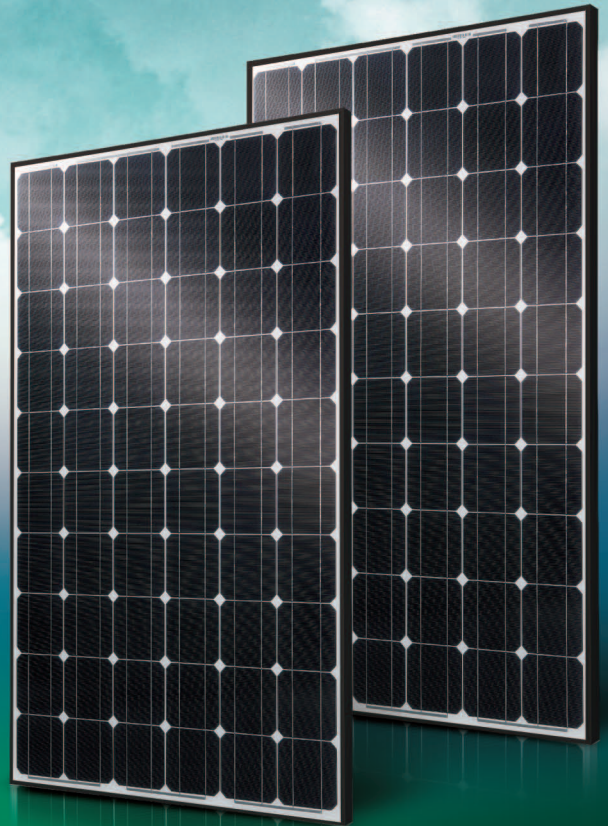


# Phono<sup>®</sup> Solar

SHARE THE SUN, POWER THE FUTURE!

## U SERIES

### MONO CRYSTALLINE MODULE PS250M-20/U BLACK FRAME



#### High Performance Solar Panels

Phono Solar's 250 Mono Series is a robust 60 cell PV panel with a black frame designed for on-grid residential and commercial applications.

Quality control measures and strict factory testing ensure that Phono Solar panels exceed customers expectations.

#### Phono Solar Advantages

##### History

Phono Solar has been producing PV Modules since 2004. As part of the Sumec Group and the Sinomach family of businesses, Phono Solar is backed by parent companies with 15 Billion USD in annual sales revenue.

##### Financial Strength

As part of the Sumec and Sinomach family of companies, Sumec has the financial support of two of the oldest, most profitable companies in Asia. This is critical when considering that a PV module is meant to last at least 25-years. Customers can be assured Phono Solar will be around to honor its warranty commitment.

##### Quality Products at an Excellent Price

Phono Solar modules carry a STC/PTC of 91% and module efficiency of 14.8%. This puts Phono Solar at the top of the CEC approved suppliers list. Higher efficiency modules lead to higher potential rebates. Phono Solar helps the customer maximize their system productivity.

##### Performance

Excellent PTC ratings, efficient manufacturing facilities and industry-leading quality controls makes Phono Solar's modules the right choice for any installation. Additionally, Phono Solar PV modules carry a 25-year performance guarantee.

##### Capacity

In relatively short time, Phono Solar has become one of the top exporters in the Solar Industry. Phono Solar's three production facilities will produce more than 500MW of PV Modules in 2011.

##### North American Focus

With a North American sales office and Southern California based distribution center, we offer logistical expertise for all regions within the US. Customers are supported by a team of dedicated industry professionals that value strategic business relationships and strive to maintain long-term partnerships.



0~+3% Positive Power Tolerance



#### Warranty Conditions

- ▶ 10-year product warranty
- ▶ 25-year performance guarantee (90% up to 10 years, 80% up to 25 years)
- ▶ Product certification to UL 1703
- ▶ CEC (California Energy Commission) Program Registered
- ▶ Product certification to IEC 61215 (ed. 2)
- ▶ Protection class II / IEC 61730
- ▶ CE conformity
- ▶ Class C Fire rating
- ▶ FESC (Florida Solar Energy Center) PV Module Certification

# U SERIES MONO

## MECHANICAL CHARACTERISTICS

<b>Solar Cells</b>	Mono crystal Si 156 mm × 156 mm square, 6 × 10 pieces in series
<b>Dimension</b>	Length: 64.6 inch (1640 mm)
	Width: 39.1 inch (992 mm)
	Height: 1.8 inch (45 mm)
<b>Weight</b>	44.1 lbs (20 Kg)
<b>Front Glass</b>	3.2 mm toughened glass
<b>Frame</b>	Black anodized aluminium alloy
<b>Cable</b>	0.90m wire (ø 4mm <sup>2</sup> )
<b>Diodes</b>	6 pieces schottky by-pass diodes
<b>Junction Box</b>	IP 65 rated

## ABSOLUTE MAXIMUM RATING

Parameter	Values	Unit
<b>Operating Temperature</b>	from -40 to +85	°C
<b>Typical Application</b>	20 V DC	
<b>Hail Diameter @ 80Km/h</b>	up to 25	mm
<b>Surface Maximum Load Capacity</b>	up to 5400	Pa
<b>Maximum Series Fuse Rating</b>	15	A
<b>IEC Application Class (IEC 61215)</b>	A	
<b>Fire Rating (UL 1703)</b>	C	
<b>Maximum System Voltage</b>	1000 V DC (IEC 61215)	
	600 V DC (UL 1703)	
<b>AC Module</b>		

## ELECTRICAL TYPICAL VALUES<sup>1,2</sup>

Model	Rated Power (P <sub>MPP</sub> )	Tolerance	Rated Current (I <sub>MPP</sub> )	Rated Voltage (U <sub>MPP</sub> )	Short Circuit Current (I <sub>sc</sub> )	Open Circuit Voltage (U <sub>oc</sub> )	Module Efficiency (%)
<b>PS250M-20/U</b>	250 W	+3%	8.24 A	30.4 V	8.65 A	37.9 V	15.37
<b>Performance Classes</b>	235wp	240wp					
<b>PTC Performance</b>	212.8	217.5					

<b>NOCT (Nominal Operation Cell Temperature): 45°C ± 2°C</b>	Voltage Temperature Coefficient: -0.35% / K
	Current Temperature Coefficient: 0.05% / K
	Power Temperature Coefficient: -0.48% / K

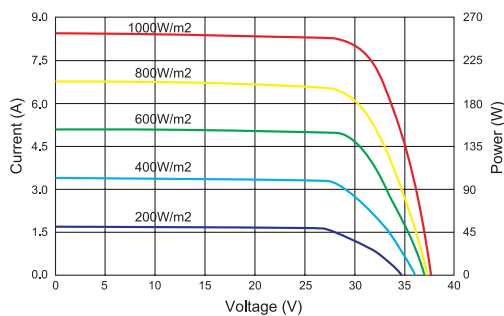
## PACKING INFORMATION

<b>Container</b>	<b>40' HQ</b>
<b>Pieces Per Pallet</b>	22
<b>Pallets Per Container</b>	28
<b>Pieces Per Container</b>	616

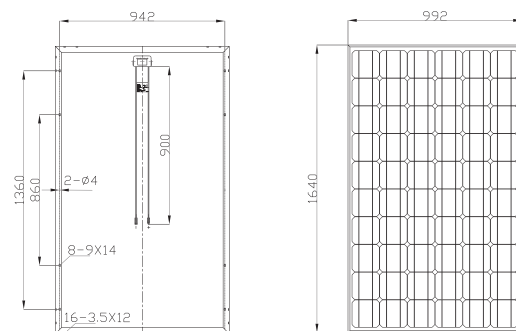
## CERTIFICATION



## I-V CURVE



## DIMENSION



## Partner Information

Note: This publication summarizes product warranty and specifications, which are subjected to change without notice. Additional information may be found on web site: [www.phonosolar.com](http://www.phonosolar.com)

1. 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.
2. 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.