



Philadelphia Solar
Delivering Clean Energy Solutions

PS-M144(HCBF)-xxxW

Half-Cell MBB Bifacial Module

525 -545 Watt (182mm Cell Size)



Philadelphia Solar's Mono-Crystalline modules with power up to **545 Wp** are produced using the state-of-the-art (automated) robotic production lines. These modules are suitable to be used for most electrical power applications and have excellent durability to prevailing weather conditions

CERTIFICATIONS

IEC 61215 / IEC 61730
EN ISO 9001: 2015
Quality Management System
EN ISO 14001: 2015
Environmental Management System
ENJ ISO 45001: 2018
Occupational health and safety management systems



APPLICATIONS



On-Grid Residential Roof-Tops



On-Grid Commercial/ Industrial Roof-Tops



Off-Grid Systems (Including Lighting Systems)

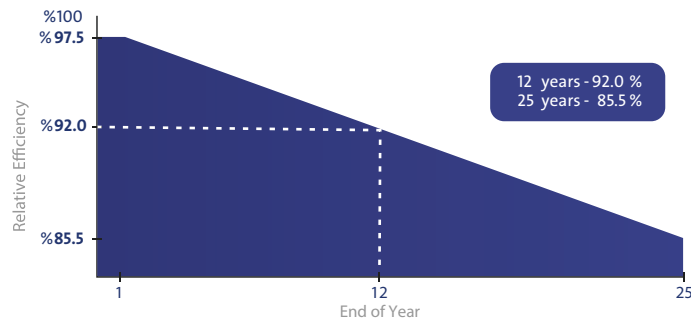


Solar Power Plants

FEATURES

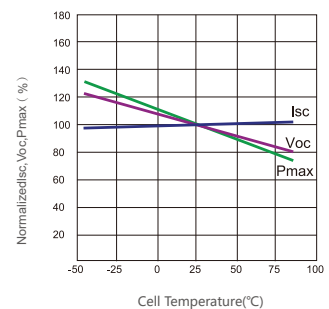
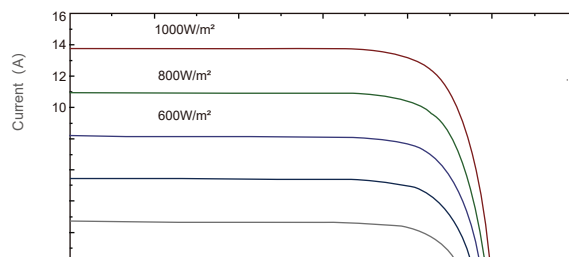
- Module's Cell Efficiency up to 23%
- Lower microcrack problem loss comparing with 5-busbar module
- Lower internal resistance loss
- Lower degradation PERC technology
- Less partial shading current mismatch loss so more power output.
- Better temperature coefficients come from half-cell design.

LINEAR PERFORMANCE WARRANTY



- 12 Year Product Warranty
- 25 Year Linear Power Warranty
- Only -0.5% Annual Degradation

I-V CURVES



ELECTRICAL CHARACTERISTICS

POWER AT STC	525 W	530 W	535 W	540 W	545 W
Short Circuit Current - I _{sc} (A)	13.64	13.71	13.79	13.87	13.94
Maximum Power Current - I _{mpp} (A)	12.93	13.02	13.11	13.20	13.27
Open Circuit Voltage - V _{oc} (V)	49.27	49.35	49.42	49.49	49.65
Maximum Power Voltage - V _{mpp} (V)	40.61	40.71	40.81	40.91	41.07
Module Efficiency - η' (%)	20.36%	20.55%	20.75%	20.94%	21.13%

Values at Standard Test Conditions STC (Air Mass AM 1.5, Irradiance 1000 W/m², Cell Temperature 25° C).

MATERIAL CHARACTERISTICS

Characteristics	Value
Cells per Module	144 (72 x 2)
Cell Type	Grade A - Mono PERC Crystalline Silicon
Front Surface	Anti-Reflective Coated Tempered 3.2 mm Glass
Encapsulant	PID Free EVA
Back Cover	Transparent Backsheet
Frame	Anodized Aluminum
Junction Box	IP68, 3 Bypass Diodes
Cable Length	325 mm Cables Length (Can be Customized)
Fire Classification	Type I

THERMAL CHARACTERISTICS

Characteristics	Value
Open Voltage Temperature Coefficient VOC (%/C°)	-0.22
Short Circuit Current Temperature Coefficient ISC (%/C°)	+0.05
Power Temperature Coefficient PMP (%/C°)	-0.35
NOCT (°C)	45±2

OPERATING CONDITIONS

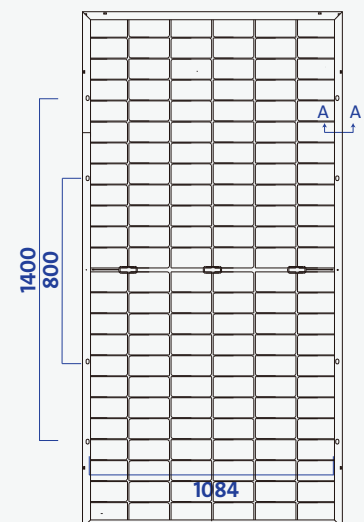
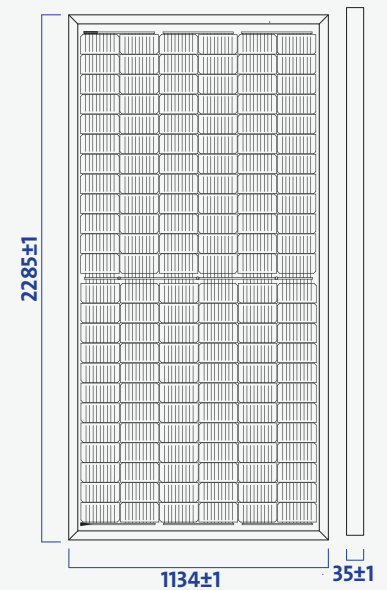
Maximum System Voltage - V _{max} (V)	1500
Maximum Series Fuse (A)	25
Operating Temperature Range (°C)	IEC: -40 to +85 UL: -40 to +90

PHYSICAL CHARACTERISTICS

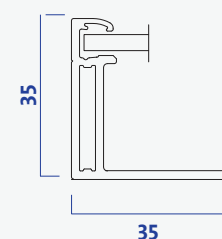
Characteristics	Value
Module Dimensions (mm)	2285±1 x 1134±1 x 35±1
Module Weight (kg)	29 ± 3%
Packaging	Value
Modules per Pallet	31
40 Feet High-Cube Container	620 Modules

Mechanical Load	Value
Max Static load (Front)	5400 Pa
Max Static load (Back)	2400 Pa

Module Drawings



Cross Section A-A



- ◆ Power measuring tolerance: ± 3%, other measurements tolerances: ± 5%.
- ◆ Datasheet is subjected to change without prior notice, always obtain the most recent version of the datasheet.
- ◆ Caution: For professional use only, the installation and handling of PV modules and cleaning modules require professional skills and should only be performed by qualified professionals, please read the Installation and Operation Manual before using the modules, also Cleaning Guidelines