



**Philadelphia Solar**  
Delivering Clean Energy Solutions

# PHEVex

**PS-M144(HCBF)-xxxW**  
Half-Cell 10BB Bifacial Module

**540 -555 Watt** (182mm Cell Size)

Philadelphia Solar's Mono-Crystalline modules with power up to **555 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 62782:2016 Dynamic load  
IEC TS 62804 PID Resistance  
IEC 60068 Dust and Sand Resistance  
IEC 62716 Ammonia Resistance  
IEC 61701 Salt Mist Resistance  
UL 61215 / UL 61730  
IEC 61215 / IEC 61730  
EN ISO 9001: 2015  
Quality Management System  
EN ISO 14001: 2015  
Environmental Management System  
EN ISO 45001: 2018  
Occupational health and safety management systems



## APPLICATIONS



On-Grid Commercial/  
Industrial Roof-Tops



Off-Grid Systems  
(Including Lighting Systems)



Solar Power Plants

## FEATURES



Module's Cell Efficiency up to **23%**



Lower internal resistance loss



Less partial shading current mismatch loss so more power output.



Lower microcrack problem loss comparing with 5-busbar module



Lower degradation PERC technology



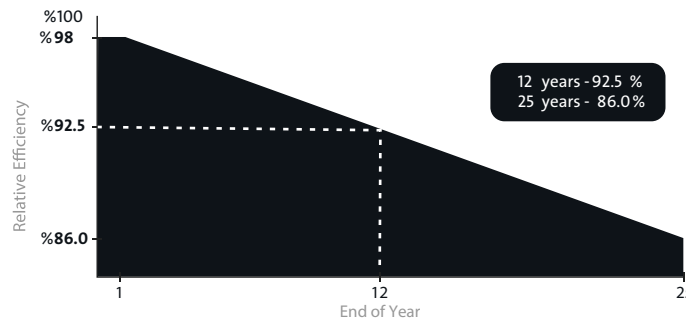
Better temperature coefficients come from half-cell design.

**TIER-1**  
MANUFACTURER



Made In Jordan

## LINEAR PERFORMANCE WARRANTY



**12 Year Product Warranty**

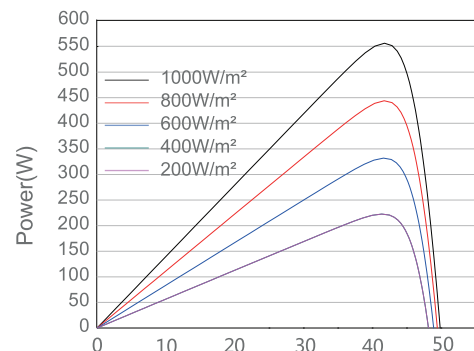
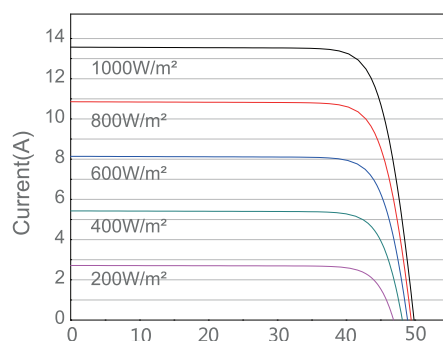


**25 Year Linear Power Warranty**



Only **-0.5%** Annual Degradation

## I-V CURVES



## ELECTRICAL CHARACTERISTICS

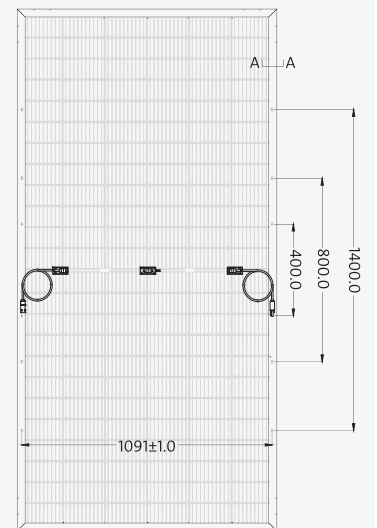
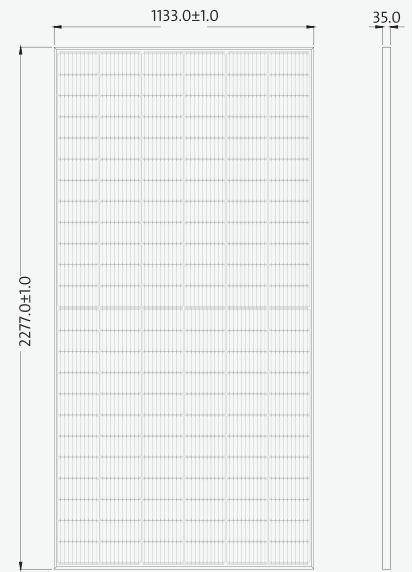
POWER AT STC	540 W	545W	550 W	555 W
Short Circuit Current - Isc (A)	13.59	13.64	13.69	13.73
Maximum Power Current - Impp (A)	12.96	13.00	13.05	13.09
Open Circuit Voltage - Voc (V)	49.78	50.00	50.25	50.50
Maximum Power Voltage - Vmpp (V)	41.69	41.94	42.19	42.42
Module Efficiency - $\eta'$ (%)	20.9%	21.1%	21.3%	21.5%
Bifaciality Ratio (%)	65±5%			

Values at Standard Test Conditions STC (Air Mass AM 1.5, Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25° C).

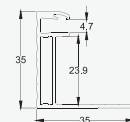
## MATERIAL CHARACTERISTICS

Characteristics	Value
Cells per Module	144 (72 x 2)
Cell Type	Grade A - Mono PERC Crystalline Silicon/10 BB 182x91mm
Front Surface	3.2mm Tempered AR Coated Glass
Encapsulant	PID Free EVA
Back Cover	Transparent Backsheet
Frame	Anodized Aluminum (Black/Silver)
Junction Box	IP68, 3 Bypass Diodes
Cable Length	Cables Length Could be 300m, or 1200mm With Original MC4 Connector
Fire Classification	Type I

## MODULE DRAWINGS



Cross Section A-A



## 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

## PHYSICAL CHARACTERISTICS

Characteristics	Value
Module Dimensions (mm)	2277±1 x 1133±1 x 35
Module Weight (kg)	29 ± 1kg
Packaging	Value
Modules per Pallet	31
40 Feet High-Cube Container	620 Modules

## OPERATING CONDITIONS

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

Mechanical Load**	Value
Max Static load (Front)	5400 Pa
Max Static load (Back)	2400 Pa
Dynamic load	1000 Pa

- ◆ 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