



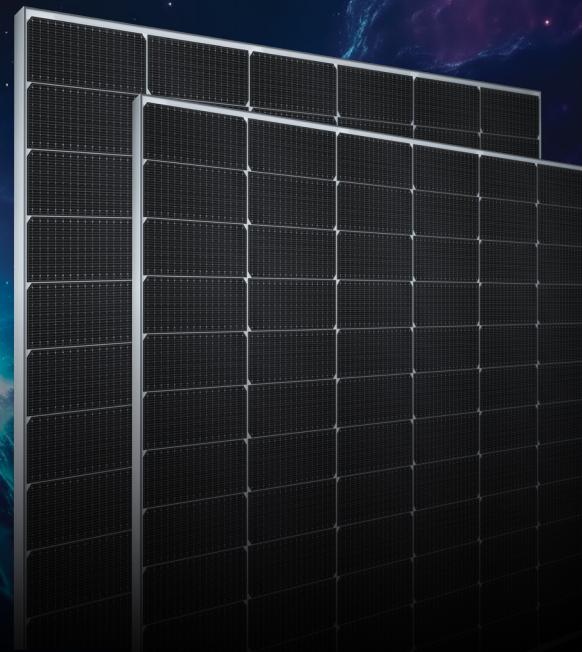
**PHILADELPHIA SOLAR**  
DELIVERING CLEAN ENERGY SOLUTIONS

# NEXUS

**PS-MNB144(HCBF)-xxxW**  
Half-Cell N-Type 16BB Bifacial Module

**565 - 580 Watt**

Positive power tolerance of 0 ~+3%



Philadelphia Solar's Mono-Crystalline N-type modules with power up to **580Wp** 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

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



Power output increases by 5-25% from the backside resulting in significantly reduced LCOE and (IRR).



Exceptional Anti-PID performance through the use of optimized mass-production processes and strict materials control.



Less partial shading current mismatch loss so more power output.

**TIER-1**  
MANUFACTURER



Made In Jordan



withstand High Mechanical load :  
Back (2400 Pascal) and  
Front (5400 Pascal)

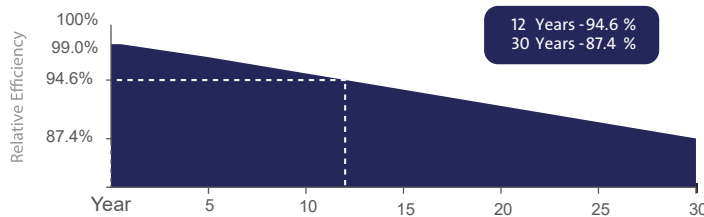


Improved light trapping and current  
collection technology enhance module  
power output and reliability.



Better temperature coefficients come from  
half-cell design.

## LINEAR PERFORMANCE WARRANTY



12 Year Product Warranty



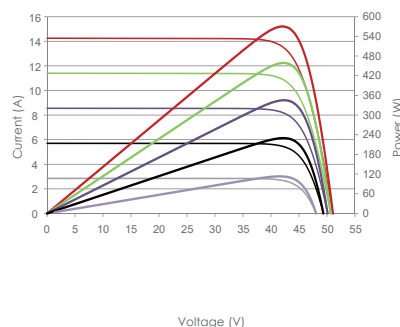
30 Year Linear Power Warranty



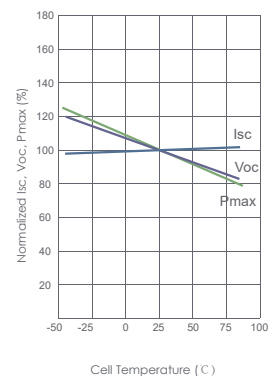
Only -0.4% Annual Degradation

## Electrical Performance & Temperature Dependence

Current-Voltage & Power-Voltage Curves (570W)



Temperature Dependence of I<sub>sc</sub>, V<sub>oc</sub>, P<sub>max</sub>



## ELECTRICAL CHARACTERISTICS

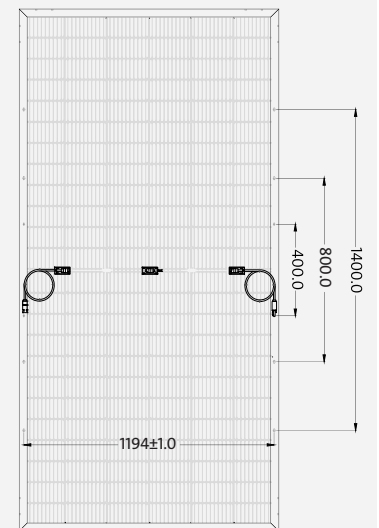
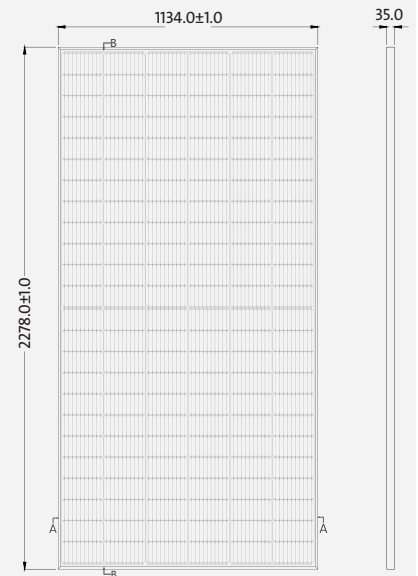
POWER AT STC	565 W	570 W	575 W	580 W
Short Circuit Current - I <sub>sc</sub> (A)	14.19	14.25	14.31	14.37
Maximum Power Current - I <sub>mpp</sub> (A)	13.41	13.48	13.55	13.62
Open Circuit Voltage - V <sub>oc</sub> (V)	50.87	51.07	51.27	51.47
Maximum Power Voltage - V <sub>mpp</sub> (V)	42.14	42.29	42.44	42.59
Module Efficiency - η' (%)	21.87%	22.07%	22.26%	22.45%
Bifaciality Ratio (%)	80%±5			
Power tolerance (%)	0~+3%			

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

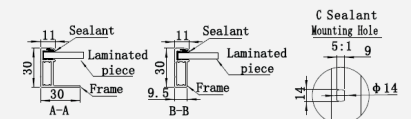
## MATERIAL CHARACTERISTICS

Characteristics	Value
Cells per Module	144 (72 x 2)
Cell Type	N Type (TopCon) Mono-Crystalline
Front Surface	3.2mm Semi -Tempered AR Coated Glass
Encapsulant	PID Free EVA
Back Cover	Transparent Backsheet
Frame	Anodized Aluminum (Black/Silver)
Junction Box	IP 68 With Original MC4
Cable Length	1200mm Cable length could be customized
Fire Classification	Type I

## MODULE DRAWINGS



Cross Section A-A&B-B



## THERMAL CHARACTERISTICS

Characteristics	Value
Open Voltage Temperature Coefficient VOC (%/C°)	-0.25
Short Circuit Current Temperature Coefficient ISC (%/C°)	+0.045
Power Temperature Coefficient PMP (%/C°)	-0.29
NOCT (°C)	45±2

## PHYSICAL CHARACTERISTICS

Characteristics	Value
Module Dimensions (mm)	2278 x 1134 x 35
Module Weight (kg)	28 ± 1 Kg

## Packaging

Value	Value
Modules per Pallet	31
40 Feet High-Cube Container	620 Modules

## OPERATING CONDITIONS

Maximum System Voltage - V <sub>max</sub> (V)	1500
Maximum Series Fuse (A)	30
Operating Temperature Range (°C)	IEC: -40 to +85 UL: -40 to +90

## Mechanical Load\*\*

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

- ◆ Tolerance of power Current and Voltage (ISC,VOC)±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