



**PHILADELPHIA SOLAR**  
DELIVERING CLEAN ENERGY SOLUTIONS

# NEXUS

## PS-MNB108(HCBF)-xxxW

Half-Cell N-Type 16BB Bifacial Module

**425 - 440Watt**

Positive power tolerance of 0 ~+3%



Philadelphia Solar's Mono-Crystalline N-type modules with power up to **440Wp** are reproduced 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

UL 61215 / UL 61730  
IEC 61215 / IEC 61730  
CSA C22.2 #61730:2019  
HALT TEST Highly Accelerated

Life And Extended Reliability Test  
IEC 61853 PAN File  
IEC TS 62804 PID Resistance  
IEC 60068 Dust and Sand Resistance  
IEC 62716 Ammonia Resistance  
IEC 61705 Salt Mist Resistance  
Bankability Report  
EN ISO 9001: 2015  
Quality Management System

EN ISO 14001: 2015

Environmental Management System

EN ISO 45001: 2018



### APPLICATIONS



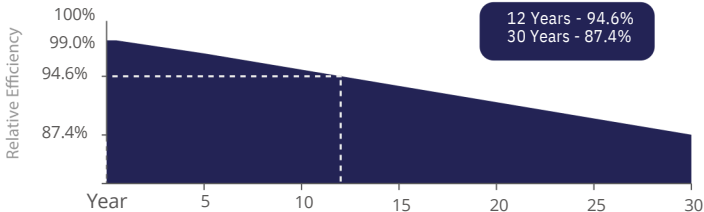
### FEATURES

- Power output increases by 5-25% from the backside resulting in significantly reduced LCOE and (IRR).
- Withstand High Mechanical load : Front (5400 Pascal) Back (5400 Pascal)
- Exceptional Anti-PID performance through the use of optimized mass-production processes and strict materials control.
- Improved light trapping and current collection technology enhance module power output and reliability.
- Less partial shading current mismatch loss so more power output.
- Better temperature coefficients come from half-cell design.



Made In Jordan

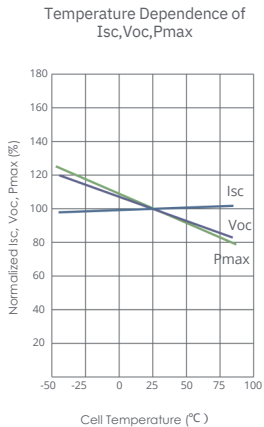
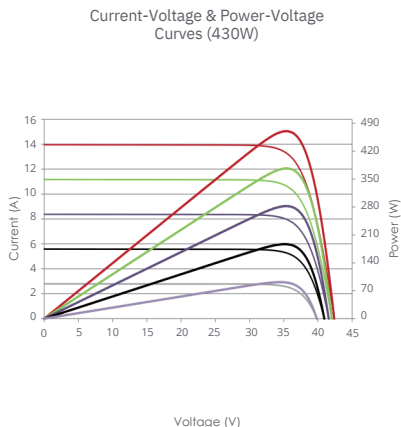
### LINEAR PERFORMANCE WARRANTY



12 Years - 94.6%  
30 Years - 87.4%

- 12 Year Product Warranty
- 30 Year Linear Power Warranty
- Only **-0.4%** Annual Degradation

### Electrical Performance & Temperature Dependence



## ELECTRICAL CHARACTERISTICS POWER AT STC

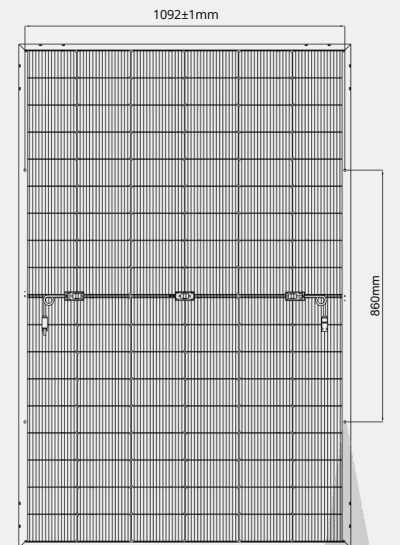
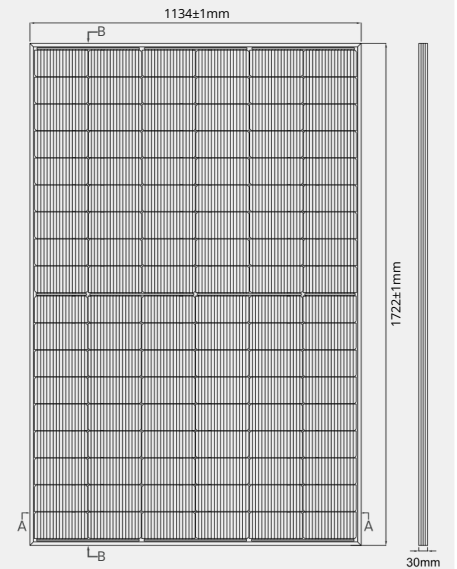
	425 W	430 W	435 W	440 W
Short Circuit Current - Isc (A)	14.05	14.13	14.22	14.30
Maximum Power Current - Impp (A)	13.23	13.28	13.32	13.36
Open Circuit Voltage - Voc (V)	38.29	38.42	38.50	38.63
Maximum Power Voltage - Vmpp (V)	32.23	32.49	32.76	32.98
Module Efficiency - $\eta'$ (%)	21.80%	22.05%	22.31%	22.57%
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 25o C).

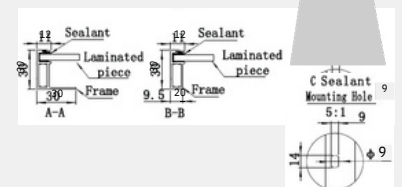
## MATERIAL CHARACTERISTICS

Characteristics	Value
Cells per Module	108 (54x 2)
Cell Type	N Type Mono-Crystalline
Front Surface	3.2mm Tempered AR Coated Glass
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 1

## 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°)	+0.046
Power Temperature Coefficient PMP (%/C°)	-0.30
NOCT (°C)	45±2

## OPERATING CONDITIONS

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

## PHYSICAL CHARACTERISTICS

Characteristics	Value
Module Dimensions (mm)	1722 x 1134 x 30
Module Weight (kg)	20.5± 1K g

Packaging	Value
Modules per Pallet	37
40 Feet High-Cube Container	962 Modules

Mechanical Load**	Value
Max Static load (Front)	5400P
Max Static load (Back)	a
Dynamic load	5400P

- ◆ Tolerance of power Current and Voltage (ISC,VOC)+-3 %
- ◆ 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

# SGProFW6000S/1P2F0040T00D

- Low frequency inverter 120/240Vac Split Phase output
- Integrated MPPT charge controller
- Optional WIFI/ GPRS remote monitoring
- Built-in pure copper low frequency transformer
- Configurable grid or solar input priority



P O W E R  
- I N G O  
T O M O -  
R R O W O

**G**ROWATT

[www.rock solar.ca](http://www.rock solar.ca)

Datasheet	SPF 6000T DVM-US MPV	SPF 12000T DVM-US MPV
Battery Voltage	48VDC	
Battery Type	Lithium/Lead-acid	
<b>INVERTER OUTPUT</b>		
Rated Power	6KW	12KW
Surge Rating	18KW	36KW
Waveform	Pure sine wave/ same as input (bypass mode)	
Nominal Output Voltage RMS	104-110-115-120/208-220-230-240VAC(optional)	
Output Frequency	50Hz/60Hz +/-0.5 Hz	
Inverter Efficiency(Peak)	88%	
Transfer Time	10ms	
<b>SOLAR CHARGER</b>		
Maximum PV Charge Current	80A	120A
Maximum PV Array Power	5000W	7000W
Number of independent MPP trackers/ strings per MPP tracker	1/1	2/1
MPPT Range @ Operating Voltage(VDC)	60~245VDC	
Maximum PV Array Open Circuit Voltage	250V	
Maximum Efficiency	97%	
<b>AC INPUT</b>		
Voltage	240VAC	
Selectable Voltage Range	184~272VAC(UPS);154~272VAC(APL)	
Frequency Range	50Hz/60Hz (Auto sensing)	
Max. Charging Current	60A	100A
<b>MECHANICAL SPECIFICATIONS</b>		
Protection Degree	IP20	
Dimensions (W/H/D)	360/540/218mm	380/650/225mm
Weight	52kg	75kg
<b>OPERATING ENVIRONMENT</b>		
Operation Temperature Range	0°C to 50°C	
Altitude	<2000W	
UL STD.1741、CSA STD, CSA C22.2 No.107.1		