



Philadelphia Solar
Delivering Clean Energy Solutions

BLACK Iris

Bifacial

Module : PS-M108(HCBF)-xxxW

400-410W

Half-Cell Mono-Crystalline 10BB Black modules with power up to **410 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
IEC 62804 PID Resistance
IEC 60068 Dust and Sand Resistance
IEC 62716 Ammonia Resistance
IEC 61701 Salt Mist Resistance
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 Residential Roof-Tops



On-Grid Commercial/ Industrial Roof-Tops



Off-Grid Systems (Including Lighting Systems)



Solar Power Plants



Proudly Made In Jordan

FEATURES



Maximum Efficiency **21.00%**



Strong Mechanical Load Capacity



P Type/M10/PERC/10BB/Half-Cell



Better temperature coefficients come from half-cell design.

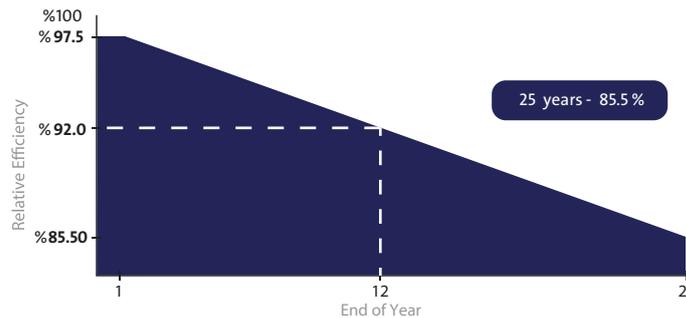


Support 1500V System, increase the number of modules and reduce cost



Excellent anti-PID performance to ensure module's stable power output

LINEAR PERFORMANCE WARRANTY



12 Year Product Warranty

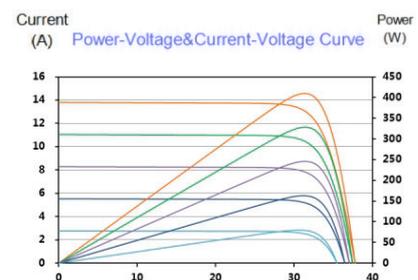
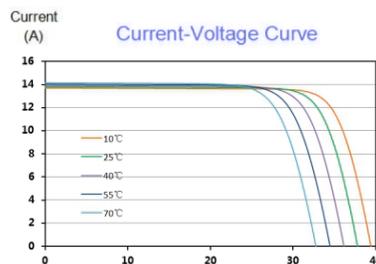


25 Year Linear Power Warranty



Only -0.5% Annual Degradation

I-V CURVES



1000 W/m² 800 W/m²
600 W/m² 400 W/m²
200 W/m²

ELECTRICAL CHARACTERISTICS

POWER AT STC	400 W	405 W	410 W
Short Circuit Current - I _{sc} (A)	13.66	13.73	13.81
Maximum Power Current - I _{mpp} (A)	12.94	13.02	13.10
Open Circuit Voltage - V _{oc} (V)	37.29	37.55	37.79
Maximum Power Voltage - V _{mpp} (V)	30.92	31.11	31.30
Module Efficiency - η' (%)	20.48%	20.74%	21.00%

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

POWER AT NMOT	300.01 W	303.63 W	307.55 W
Short Circuit Current - I _{sc} (A)	11.08	11.13	11.20
Maximum Power Current - I _{mpp} (A)	10.41	10.47	10.54
Open Circuit Voltage - V _{oc} (V)	35.34	35.59	35.81
Maximum Power Voltage - V _{mpp} (V)	28.82	29.00	29.16

Values at Nominal Module Operation Temperature NMOT (wind speed 1m/s, Irradiance 800 W/m², Cell Temperature 20° C).

MATERIAL CHARACTERISTICS

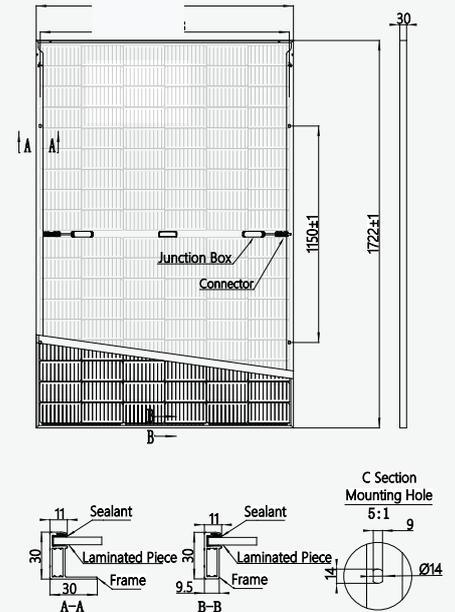
Characteristics	Value
Cells per Module	108 ((6 x9)x2)
Cell Type	Grade A - Mono PERC Crystalline Silicon/10BB 182x91mm
Front Surface	3.2mm Tempered Coated Glass
Encapsulant	EVA
Back Cover	Transaprent Backsheet
Frame	Anodized Aluminum (Black)
Junction Box	Protection Degree IP68
Cable Length	4mm ² - 300mm Cables Length (Can be Customized)
Fire Classification	Type I

OPERATING CONDITIONS

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

- ◆ 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

MODULE DRAWINGS



PHYSICAL CHARACTERISTICS

Characteristics	Value
Module Dimensions (mm)	1722 x 1134 x 30
Module Weight (kg)	20.7 ± 1

Packaging	Value
Modules per Pallet	36
40 Feet High-Cube Container	936 Modules

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

THERMAL CHARACTERISTICS

Characteristics	Value
Open Voltage Temperature Coefficient VOC (%/C°)	-0.262
Short Circuit Current Temperature Coefficient ISC (%/C°)	+0.054
Power Temperature Coefficient PMP (%/C°)	-0.341
NOCT (°C)	42.5±2