PHILADELPHIA SOLAR
DELIVERING CLEAN ENERGY SOLUTIONS

DARk
PHENex
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 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

TÜV AUSTRIA | PTL us CERTIFIED | PTL
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APPLICATIONS

On-Grid Residential Roof-Tops

On-Grid Commercial/ Industrial Roof-Tops

Off-Grid Systems (Including Lighting Systems)

Solar Power Plants

TIER-1 MANUFACTURER

EUPD RESEARCH TOP BRAND PV MODULES 2023 MIDDLE EAST & NORTH AFRICA

Made In Jordan

FEATURES

- Light weight , Perfect for Residantial Roof-top
- Strong Mechanical Load Capacity
- P Type/M10/PERC/10BB/Half-Cell
- Better temperature coefficients come from half-cell design.
- Lower microcrack problem loss comparing with 5-busbar module
- **PID** Excellent anti-PID performance to ensure module's stable power output

LINEAR PERFORMANCE WARRANTY

25 years - 86.0%
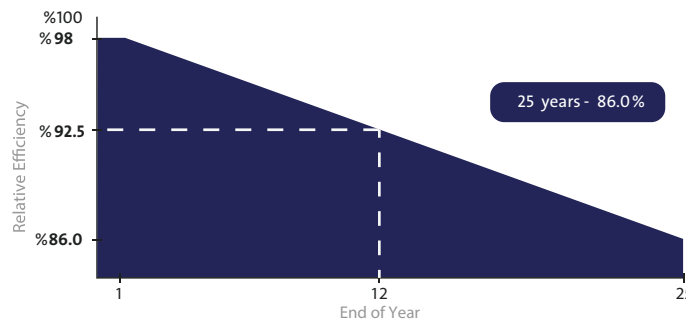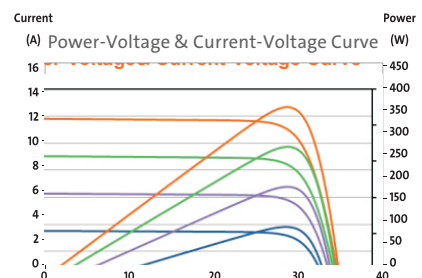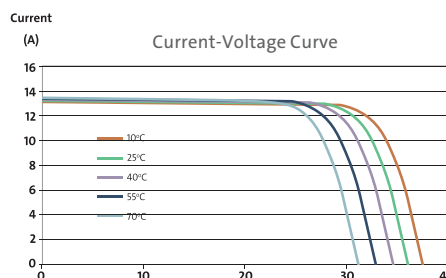
- Extendable Product Warranty Reaches to **25** Years
- **25** Year Linear Power Warranty
- Only **-0.5%** Annual Degradation

I-V CURVES

Current-Voltage Curve

Legend: 10°C, 25°C, 40°C, 55°C, 70°C

Power-Voltage & Current-Voltage Curve

Legend: 1000W/m², 800W/m², 600W/m², 400W/m², 200W/m²

ELECTRICAL CHARACTERISTICS

POWER AT STC	400 W	405 W	410W
Short Circuit Current - Isc (A)	13.55	13.59	13.66
Maximum Power Current - Impp (A)	12.92	12.96	13.01
Open Circuit Voltage - Voc (V)	37.15	37.34	37.55
Maximum Power Voltage - Vmpp (V)	31.00	31.27	31.52
Module Efficiency - η' (%)	20.5%	20.8%	21.0%
Bifaciality Ratio (%)	65±5%		

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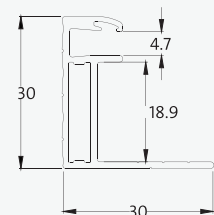
MATERIAL CHARACTERISTICS

Characteristics	Value
Cells per Module	108 (54x 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)
Junction Box	IP68 , 3 Bypass Diodes
Cable Length	Cables Length Could be 300m, or 1200mm With Original MC4 Connector
Fire Classification	Type I
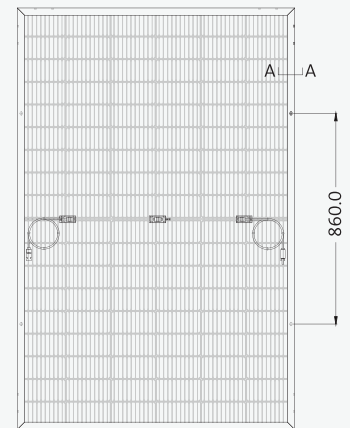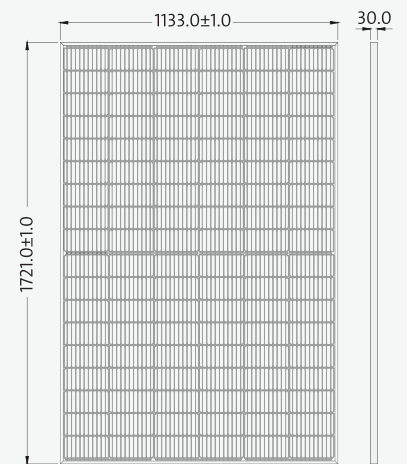
THERMAL CHARACTERISTICS

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

OPERATING CONDITIONS

Maximum Sytem Voltage - Vmax (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)	1721±1 x 1133±1 x 30
Module Weight (kg)	20.5 ±1kg

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

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

Updated Mar 2023