



Beam Plus

Silver / Black Frame (166mm)

445-455W

Mono PERC Half Cell Module
ENSP72M1 Series



Key Features



Lower power loss

Better performance in shaded and low-light conditions.



Half Cell technology

Excellent performance under real conditions.



Higher efficiency

Higher module power efficiency up to 20.6%.



Keeps going and going

Engineered and designed to withstand harsh environments.



Lower operating temperatures

Low operating temperatures and coefficients increases performance.

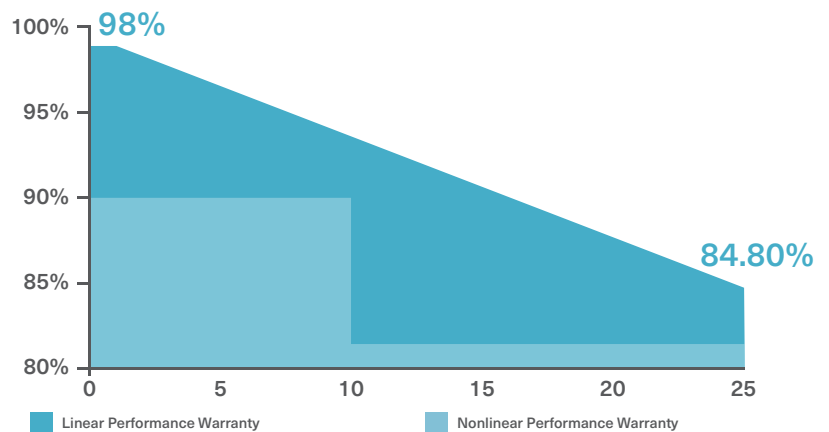
Warranty



Product warranty



Linear power output warranty
(1st year ≤ 2.0%, 2nd~25th years ≤ 0.55% / year)



Electrical Specifications

STC rated output (P_{mpp})	445 Wp	450 Wp	455 Wp
Rated voltage (V_{mpp}) at STC	41.05 V	41.32 V	41.51 V
Rated current (I_{mpp}) at STC	10.84 A	10.89 A	10.96 A
Open circuit voltage (V_{oc}) at STC	48.80 V	49.05 V	49.35 V
Short circuit current (I_{sc}) at STC	11.30 A	11.37 A	11.44 A
Module efficiency	20.5%	20.7%	20.9%
Rated output (P_{mpp}) at NMOT	330.8 Wp	334.5 Wp	338.2 Wp
Rated voltage (V_{mpp}) at NMOT	38.12 V	38.37 V	38.55 V
Rated current (I_{mpp}) at NMOT	8.68 A	8.72 A	8.78 A
Open circuit voltage (V_{oc}) at NMOT	45.70 V	45.94 V	46.22 V
Short circuit current (I_{sc}) at NMOT	9.10 A	9.16 A	9.22 A
Temperature coefficient (P_{mpp})		- 0.35%/°C	
Temperature coefficient (I_{sc})		+ 0.050%/°C	
Temperature coefficient (V_{oc})		- 0.27%/°C	
Nominal module operating temperature (NMOT)		41±2°C	
Maximum system voltage (IEC/UL)		1500V _{DC}	
Number of diodes		3	
Junction box IP rating		IP 68	
Maximum series fuse rating		20 A	

STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5

NMOT: Irradiance 800W/m², Ambient Temperature 20°C, AM=1.5, Wind Speed 1m/s

Name plate tolerances: P_{max} +/-3%, V_{oc} +/-3%, I_{sc} +/-5%

Mechanical Specifications

Outer dimensions (L x W x H)	2094 x 1038 x 35 mm
Frame technology	Aluminum, silver or black anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm Landscape (standard): 1300 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
^① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Fire performance (IEC/UL)	Class C (IEC) or Type 4 (UL)
Connector type (IEC/UL)	Stäubli MC4 EVO2 connectors (PV-KST4 EVO 2 & PV-KBT4 EVO 2)

^① Refer to Energizer crystalline installation manual or contact technical department.

Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

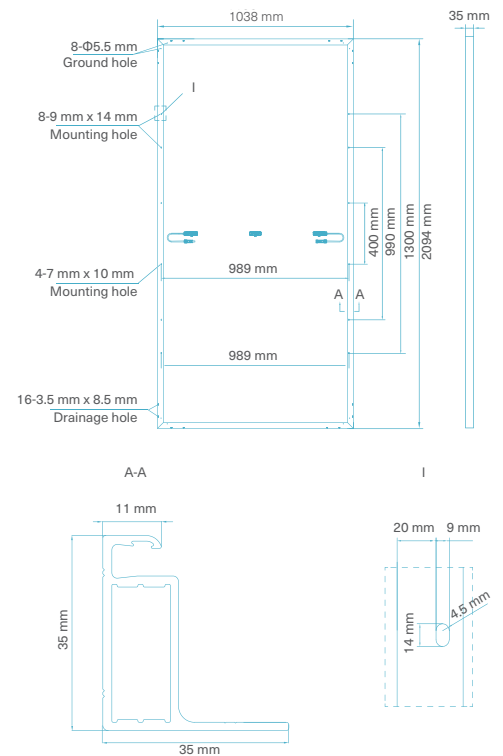
Packing Specifications

^① Module Weight	23.5 kg
^② Packing unit	31 pcs / box
Weight of packing unit (for 40'HQ container)	769 kg
Number of modules per 40'HQ container	682 pcs

^① Tolerance +/- 1.0kg

^② Subject to sales contract

Module Dimensions



Curve

