



Beam N DUAL GLASS Solar Panel 465-480W

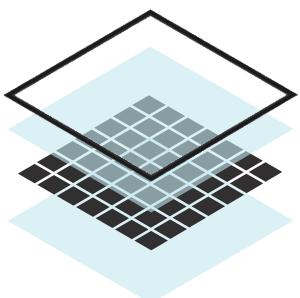
Bifacial - Black Frame (182mm)

N-Type Half Cell Module

ENSP60NDG2465BF ENSP60NDG2475BF
ENSP60NDG2470BF ENSP60NDG2480BF



Built using N-Type Dual Glass technology, the Energizer® Solar Panels range combine two of the best technologies in the market.



Dual Glass Construction

- Panel Frame
- Front Glass Panel
- Solar Cells
- Rear Glass Panel



Dual glass technology



Lower operating temperatures



Improved fire & water resistance



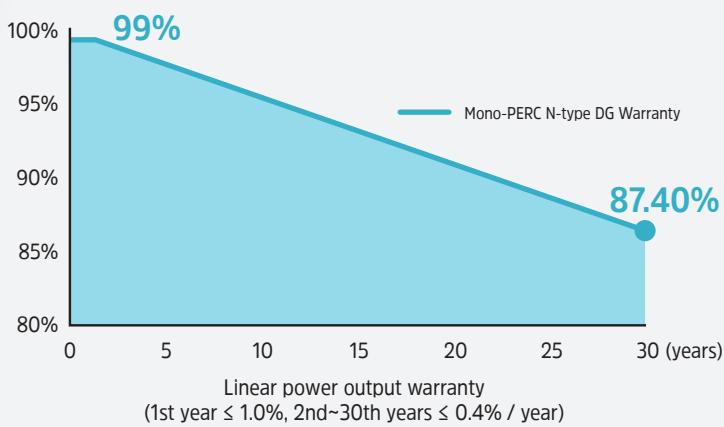
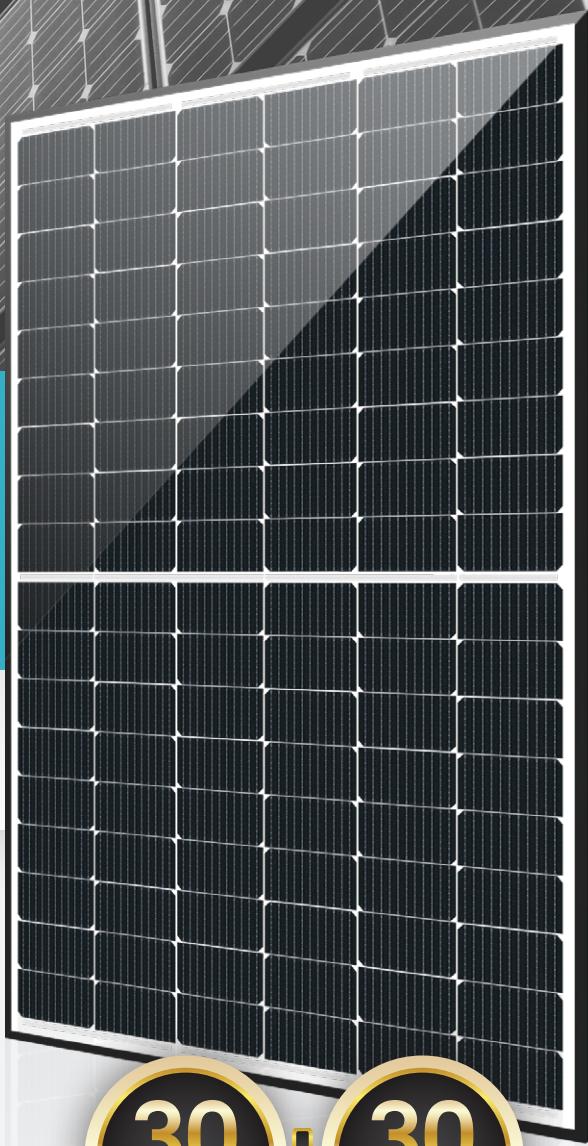
Improved durability with no extra weight



Quality controlled by artificial intelligence



Positive power tolerance of 0~+5W



Electrical Specifications

STC rated output (P_{mpp})	465 Wp	470 Wp	475 Wp	480 Wp
Rated voltage (V_{mpp}) at STC	36.14 V	36.27 V	36.29 V	36.52 V
Rated current (I_{mpp}) at STC	12.87 A	12.96 A	13.05 A	13.14 A
Open circuit voltage (V_{oc}) at STC	43.01 V	43.16 V	43.31 V	43.46 V
Short circuit current (I_{sc}) at STC	13.57 A	13.68 A	13.80 A	13.91 A
Module efficiency	21.5%	21.8%	22.0%	22.2%
Rated output (P_{mpp}) at NMOT	349.7 Wp	353.4 Wp	357.2 Wp	361.0 Wp
Rated voltage (V_{mpp}) at NMOT	34.02 V	34.14 V	34.26 V	34.37 V
Rated current (I_{mpp}) at NMOT	10.28 A	10.35 A	10.43 A	10.50 A
Open circuit voltage (V_{oc}) at NMOT	40.85 V	40.99 V	41.14 V	41.28 V
Short circuit current (I_{sc}) at NMOT	10.95 A	11.04 A	11.14 A	11.23 A
Temperature coefficient (P_{mpp})	- 0.29%/°C			
Temperature coefficient (I_{sc})	+ 0.043%/°C			
Temperature coefficient (V_{oc})	- 0.25%/°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	25 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: Pmax +/-3.5%, Voc +/-3.5%, Isc +/-5%

Other Specifications

Outer dimensions (L x W x H)	1903 x 1134 x 30 mm
Cell type	N type Mono-crystalline
No. of cells	120
Frame technology	Black Aluminum frame, White backing
Front glass thickness	1.6+1.6 mm
Cable length (IEC/UL)	Portrait: (+) 350mm, (-) 250mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	PV-HCB40 (Astronergy) or PV-KST4-EV02/xy-UR, PVKBT4-EV02/xy (Stäubli)
Module weight	22.9 kg
Packing unit	36 pcs / box
Weight of packing unit (40ft container)	869 kg
Modules per 40ft container	864 pcs
Fire Class Rating	Class A
Country of Manufacturer	China

Curve

