



Beam N DUAL GLASS Solar Panel 440-460W

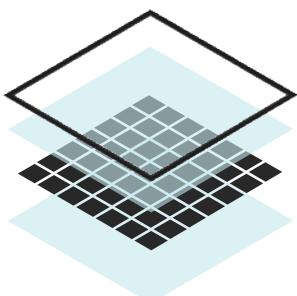
Black Frame (182mm)

Mono PERC Half Cell Module

ENSP54NDG2S440 ENSP54NDG2S455
ENSP54NDG2S445 ENSP54NDG2S460
ENSP54NDG2S450

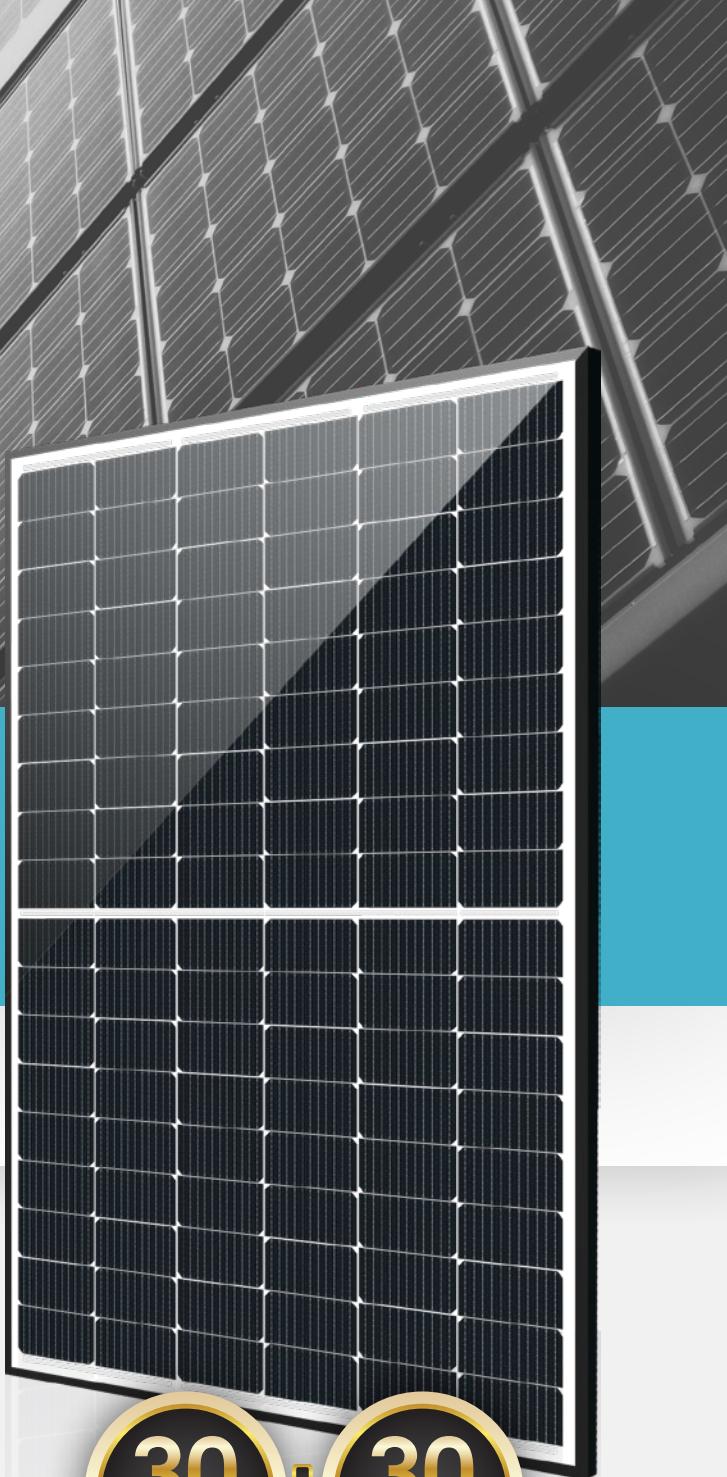


Built using Mono-crystalline PERC technology, the Energizer® Solar Panels range combine two of the best technologies in the market.



Dual Glass Construction

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



Dual glass technology



Lower operating temperatures



Improved fire & water resistance

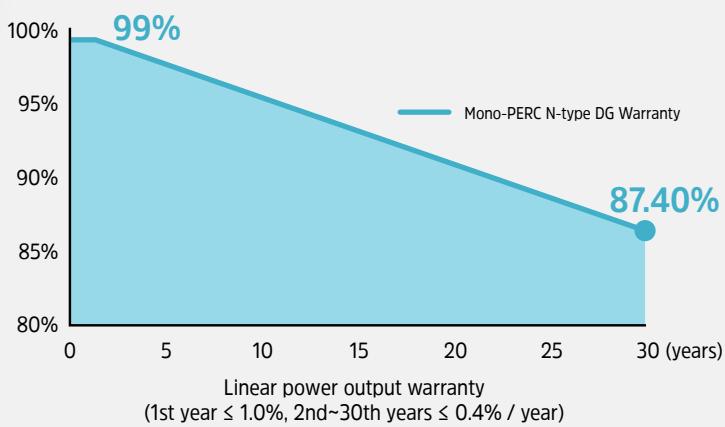


Quality controlled by artificial intelligence

Improved durability with no extra weight



Positive power tolerance of 0~+5W



Electrical Specifications

STC rated output (P_{mpp})	440 Wp	445 Wp	450 Wp	455 Wp	460 Wp
Rated voltage (V_{mpp}) at STC	32.61 V	32.77 V	32.94 V	33.11 V	33.28 V
Rated current (I_{mpp}) at STC	13.49 A	13.58 A	13.66 A	13.74 A	13.82 A
Open circuit voltage (V_{oc}) at STC	38.80 V	39.00 V	39.20 V	39.40 V	39.60 V
Short circuit current (I_{sc}) at STC	14.18 A	14.26 A	14.35 A	14.44 A	14.52 A
Module efficiency	22.0%	22.3%	22.5%	22.8%	23.0%
Rated output (P_{mpp}) at NMOT	330.9 Wp	334.5 Wp	338.4 Wp	342.2 Wp	345.9 Wp
Rated voltage (V_{mpp}) at NMOT	30.69 V	30.85 V	31.01 V	31.16 V	31.32 V
Rated current (I_{mpp}) at NMOT	10.78 A	10.85 A	10.91 A	10.98 A	11.04 A
Open circuit voltage (V_{oc}) at NMOT	36.85 V	37.04 V	37.23 V	37.42 V	37.61 V
Short circuit current (I_{sc}) at NMOT	11.44 A	11.51 A	11.58 A	11.65 A	11.72 A
Temperature coefficient (P_{mpp})	- 0.29%/ $^{\circ}$ C				
Temperature coefficient (I_{sc})	+ 0.043%/ $^{\circ}$ C				
Temperature coefficient (V_{oc})	- 0.25%/ $^{\circ}$ C				
Nominal module operating temperature (NMOT)	41 \pm 2 $^{\circ}$ C				
Maximum system voltage (IEC/UL)	1500V _{DC}				
Number of diodes	3				
Junction box IP rating	IP 68				
Maximum series fuse rating	30 A				

STC: Irradiance 1000W/m², Cell Temperature 25 $^{\circ}$ C, AM=1.5
 NMOT: Irradiance 800W/m², Ambient Temperature 20 $^{\circ}$ 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)	1762 x 1134 x 30 mm
Cell type	N type Mono-crystalline
No. of cells	108
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)	MC4 Connector PV-KBT4-EVO2A/xy (Stäubli)
Module weight	21.5 kg
Packing unit	36 pcs / box
Weight of packing unit (40ft container)	819 kg
Modules per 40ft container	936 pcs
Fire Class Rating	Class A
Country of Manufacturer	China

Curve

