



Beam N DUAL GLASS Solar Panel

410-420W

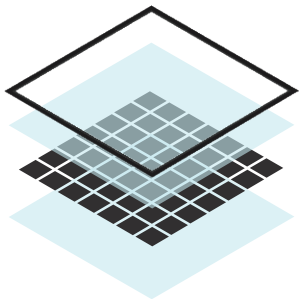
Bifacial - Black Frame (182mm)

N-Type Half Cell Module

ENSP54NBT2410BF ENSP54NBT2420BF
ENSP54NBT2415BF



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



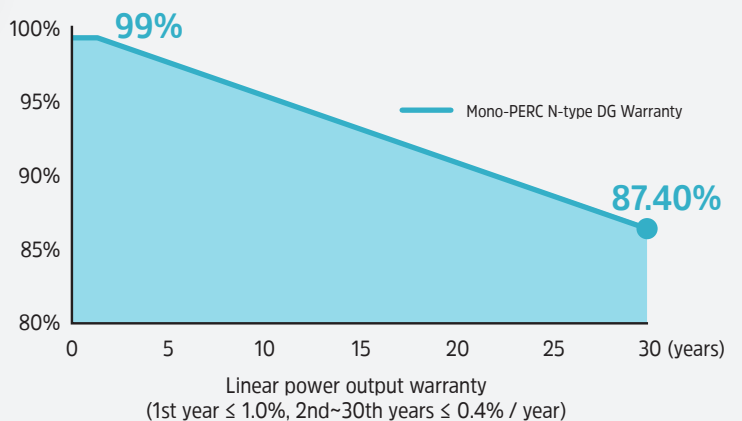
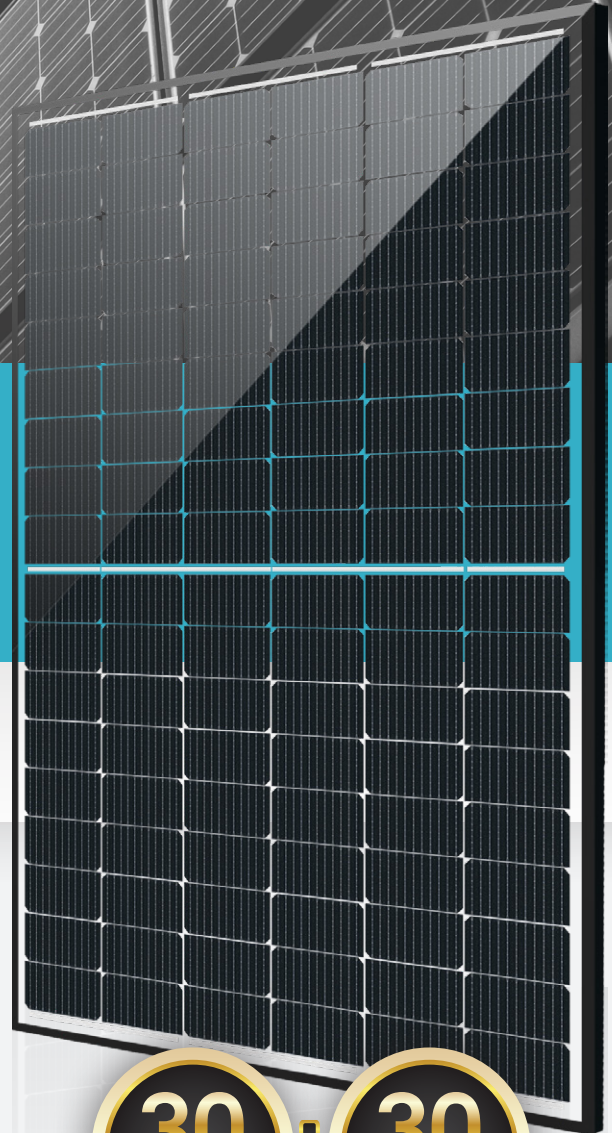
Improved durability with no extra weight



Quality controlled by artificial intelligence



Positive power tolerance of 0~+3%



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Electrical Specifications

STC rated output (P_{mpo})	410 Wp	415 Wp	420 Wp
Rated voltage (V_{mpo}) at STC	31.85 V	32.02 V	32.18 V
Rated current (I_{mpo}) at STC	12.87 A	12.96 A	13.05 A
Open circuit voltage (V_{oc}) at STC	37.90 V	38.10 V	38.30 V
Short circuit current (I_{sc}) at STC	13.59 A	13.70 A	13.81 A
Module efficiency	21.0%	21.3%	21.5%
Rated output (P_{mpo}) at NMOT	312.1 Wp	315.8 Wp	319.6 Wp
Rated voltage (V_{mpo}) at NMOT	30.14 V	30.29 V	30.45 V
Rated current (I_{mpo}) at NMOT	10.36 A	10.43 A	10.50 A
Open circuit voltage (V_{oc}) at NMOT	36.19 V	36.38 V	36.57 V
Short circuit current (I_{sc}) at NMOT	11.06 A	11.15 A	11.24 A
Temperature coefficient (P_{mpo})	- 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	30 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} +/-3.5%, V_{oc} +/-3.5%, I_{sc} +/-5%

Electrical Specifications (Integrated power)

Pmpp Gain	Pmpp / Wp	Vmpp / V	I _{mpo} / A	Voc / V	I _{sc} / A
5%	441	32.18	13.70	38.30	14.47
10%	462	32.18	14.36	38.30	15.15
15%	483	32.19	15.00	38.31	15.84
20%	504	32.19	15.66	38.31	16.53
25%	525	32.20	16.30	38.32	17.21

Other Specifications

Outer dimensions (L x W x H)	1722 x 1134 x 30 mm
Cell type	N type Mono-crystalline
No. of cells	108
Frame technology	Black Aluminum frame, Translucent 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	20.8 kg
Packing unit	36 pcs / box
Weight of packing unit (40ft container)	793 kg
Modules per 40ft container	936 pcs
Fire Class Rating	Class A
Country of Manufacturer	China

Curve

