



Beam N **DUAL GLASS** Solar Panel **420-450W**

Bifacial - Black Frame (182mm)

N-Type Half Cell Module

ENSP54NDGT2420

ENSP54NDGT2425

ENSP54NDGT2430

ENSP54NDGT2435

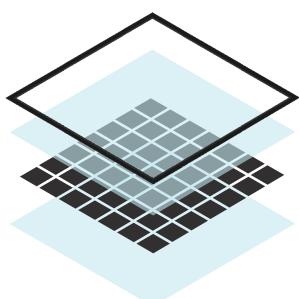
ENSP54NDGT2440

ENSP54NDGT2445

ENSP54NDGT2450



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



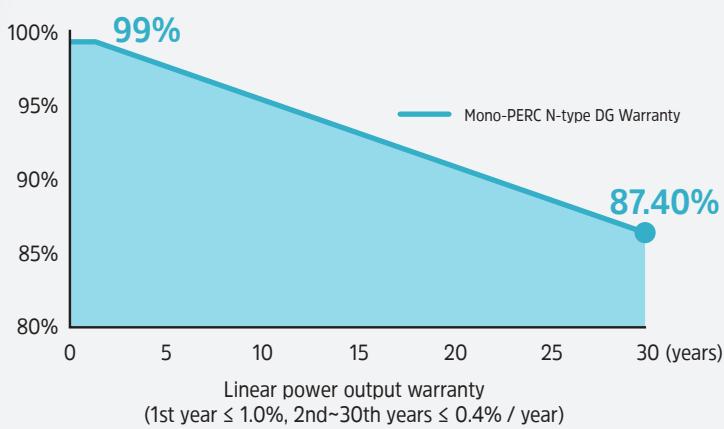
Improved durability with no extra weight



Quality controlled by artificial intelligence



Positive power tolerance of 0~+5W



Electrical Specifications

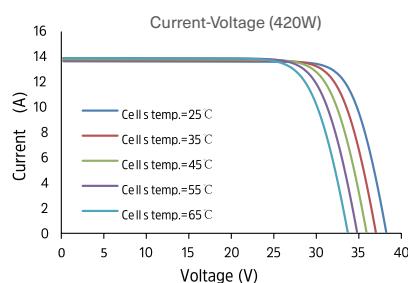
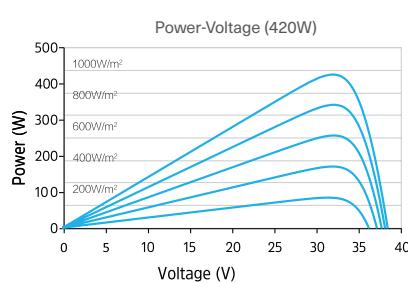
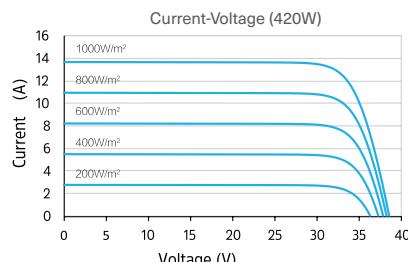
STC rated output (P _{mpp})	420 Wp	425 Wp	430 Wp	435 Wp	440 Wp	445 Wp	450 Wp
Rated voltage (V _{mpp}) at STC	32.87 V	33.05 V	33.23 V	33.40 V	33.58 V	33.75 V	33.93 V
Rated current (I _{mpp}) at STC	12.78 A	12.86 A	12.94 A	13.02 A	13.10 A	13.18 A	13.26 A
Open circuit voltage (V _{oc}) at STC	39.24 V	39.45 V	39.65 V	39.86 V	40.07 V	40.27 V	40.47 V
Short circuit current (I _{sc}) at STC	13.53 A	13.61 A	13.70 A	13.78 A	13.86 A	13.95 A	14.03 A
Module efficiency	21.5%	21.8%	22.0%	22.3%	22.5%	22.8%	23.0%
Rated output (P _{mpp}) at NMOT	316.7 Wp	320.5 Wp	324.3 Wp	328.0 Wp	331.8 Wp	335.6 Wp	339.3 Wp
Rated voltage (V _{mpp}) at NMOT	31.20 V	31.34 V	31.39 V	31.64 V	31.79 V	31.94 V	32.09 V
Rated current (I _{mpp}) at NMOT	10.15 A	10.22 A	10.30 A	10.37 A	10.44 A	10.51 A	10.58 A
Open circuit voltage (V _{oc}) at NMOT	37.44 V	37.62 V	37.79 V	37.97 V	38.15 V	38.33 V	38.50 V
Short circuit current (I _{sc}) at NMOT	10.96 A	11.03 A	11.11 A	11.18 A	11.26 A	11.33 A	11.40 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	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: Pmax +/-3.5%, Voc +/-3.5%, I_{sc} +/-5%

Curve



Electrical Specifications (BNPI)

P _{mpp} Gain	P _{mpp} / Wp	V _{mpp} / V	I _{mpp} / A	V _{oc} / V	I _{sc} / A
5%	452	33.22	13.59	39.66	14.38
10%	473	33.22	14.24	39.66	15.06
15%	495	33.23	14.88	39.66	15.75
20%	516	33.23	15.53	39.67	16.43
25%	538	33.24	16.17	39.67	17.21

Bifacial Coefficient: φVoc: 98% ±2%, φPmax: 80% ±5%, φIsc: 80% ±5%

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)	MC4 Connector PV-KBT4-EVO2A/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

