

# Beam N **DUAL GLASS** Solar Panel

## 440-455W

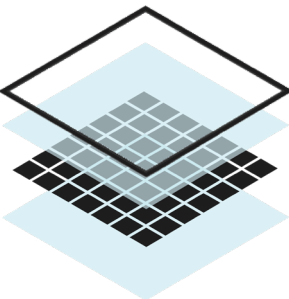
### Bifacial - Black Profile

N-Type Half Cell Module

ENSP48NDGT3440BL    ENSP48NDGT3450BL  
ENSP48NDGT3445BL    ENSP48NDGT3455BL



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

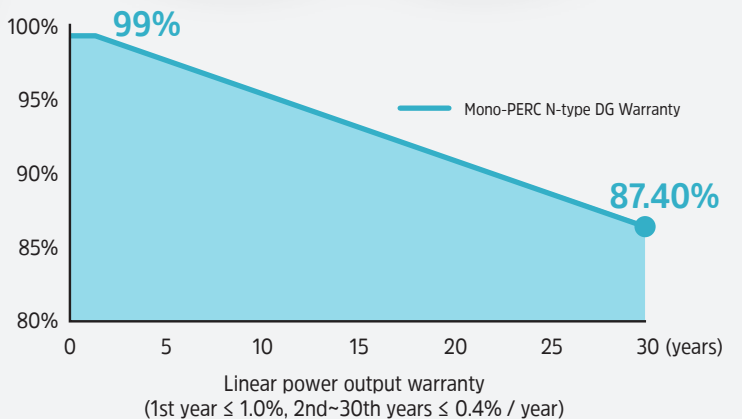
Lower operating temperatures

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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## Mechanical Specifications

|   |  |
|---|--|
| Outer dimensions (L x W x H)                | 1762 x 1134 x 30 mm  |
| Cell type                                   | N-Type mono-crystalline  |
| No. of Cells                                | 96 (6*16)  |
| Frame Technology                            | Aluminum, black or silver anodized   |
| Front / Back glass                          | 2.0+2.0 mm   |
| Cable length (Including connector)          | Portrait: ( + )350 mm,( - )250 mm; Customized length                       |
| Cable diameter (IEC/UL)                     | 4 mm <sup>2</sup> / 12 AWG   |
| Maximum mechanical test load                | 5400 Pa (front) / 2400 Pa (back)   |
| Connector type (IEC/UL)                     | PV-HCB40 (Chint New Energy) or PV-KST4-EVO2A/xy,PV-KBT4-EVO2A/xy (Stäubli) |
| Module weight                               | 24.4 kg  |
| Packing unit                                | 36 pcs / box   |
| Weight of packing unit for 40'HQ container) | 923 kg   |
| Modules per 40' HQ container                | 936 pcs  |

## Electrical Specifications

**STC:** Irradiance: 1000W/m<sup>2</sup>, Cell Temperature 25° C, AM=1.5

|   |       |       |       |       |
|---|-------|-------|-------|-------|
| Rated output power (P <sub>mpp</sub> / Wp)  | 440   | 445   | 450   | 455   |
| Rated voltage (V <sub>mpp</sub> / V)        | 30.10 | 30.24 | 30.37 | 30.51 |
| Rated current (I <sub>mpp</sub> / A)        | 14.62 | 14.72 | 14.82 | 14.91 |
| Open circuit voltage (V <sub>oc</sub> / V)  | 36.14 | 36.30 | 36.46 | 36.62 |
| Short circuit current (I <sub>sc</sub> / A) | 15.45 | 15.56 | 15.66 | 15.76 |
| Module efficiency                           | 22.0% | 22.3% | 22.5% | 22.8% |

Measurement Tolerances: P<sub>mpp</sub> ±3%, V<sub>oc</sub> ±3%, I<sub>sc</sub> ±4%

**BNPI:** Irradiance: front 1000W/m<sup>2</sup>, rear 135W/m<sup>2</sup>, Cell Temperature 25° C, AM=1.5

|   |       |       |       |       |
|---|-------|-------|-------|-------|
| Rated output power (P <sub>mpp</sub> / Wp)  | 484.9 | 490.4 | 495.9 | 501.4 |
| Rated voltage (V <sub>mpp</sub> / V)        | 30.11 | 30.25 | 30.38 | 30.52 |
| Rated current (I <sub>mpp</sub> / A)        | 16.10 | 16.21 | 16.32 | 16.43 |
| Open circuit voltage (V <sub>oc</sub> / V)  | 36.15 | 36.31 | 36.47 | 36.64 |
| Short circuit current (I <sub>sc</sub> / A) | 17.11 | 17.22 | 17.34 | 17.45 |

Bifaciality: φP<sub>mpp</sub>/φI<sub>sc</sub>: 80% ±5%, Bifaciality: φV<sub>oc</sub>: 98% ±5%

### Electrical characteristics with 10% Bifacial Gains

|   |       |       |       |       |
|---|-------|-------|-------|-------|
| Rated output power (P <sub>mpp</sub> / Wp)  | 485   | 490   | 495   | 501   |
| Rated voltage (V <sub>mpp</sub> / V)        | 30.10 | 30.24 | 30.37 | 30.51 |
| Rated current (I <sub>mpp</sub> / A)        | 16.08 | 16.19 | 16.30 | 16.41 |
| Open circuit voltage (V <sub>oc</sub> / V)  | 36.14 | 36.31 | 36.47 | 36.63 |
| Short circuit current (I <sub>sc</sub> / A) | 17.00 | 17.11 | 17.23 | 17.34 |

## Operating Parameters

|                              |                    |
|------------------------------|--------------------|
| No. of diodes                | 3                  |
| Junction box IP rating       | IP68               |
| Max. series fuse rating      | 30A                |
| Max. system voltage (IEC/UL) | 1500 <sub>DC</sub> |
| Fire Rating                  | Class C            |

Made in China, Made in Turkey.



## Temperature Ratings

|   |            |
|---|------------|
| Temperature coefficient (P <sub>mpp</sub> ) | -0.29%/°C  |
| Temperature coefficient (I <sub>sc</sub> )  | +0.043%/°C |
| Temperature coefficient (V <sub>oc</sub> )  | -0.25%/°C  |

## Curve

