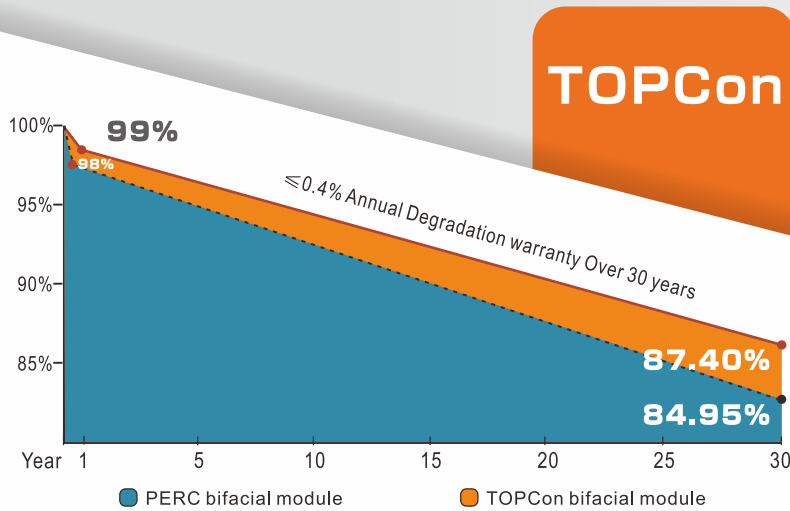


# DOUBLE-GLASS BIFACIAL N-TYPE 445~455 Watt



**Cutting Free Technology**  
Minimized micro-crack



**Bifacial Mono Module**  
Capable of generating power at back side, at least 80% efficiency of the front side



**Anti-PID (potential induced degradation)**  
Passed anti-PID test under 85°C damp heat 85% relative humidity for 192 hours



**Lower LCOE**  
Lower shading and resistive loss  
Lower temperature coefficient



**Outstanding mechanical load resistance**  
2400 Pa wind load, 5400 Pa snow load



**15** 15-year product warranty  
**30** 30-year linear power output



CEC Listed



IEC 61215, IEC 61730  
ISO 9001: 2015 (Quality management systems)  
ISO 14001: 2015 (Environmental management systems)  
ISO 45001: 2018 (Occupational health and safety)  
UNI 9177 Ia CLASSE DI REAZIONE AL FUOCO:1



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# TOPCon(N TYPE) 445~455Watt

## ELECTRICAL SPECIFICATIONS

| Module Type                               | UL-445M-108BDGN |       | UL-450M-108BDGN |       | UL-455M-108BDGN |       |       |
|---|-----------------|-------|-----------------|-------|-----------------|-------|-------|
|   | STC* NOCT*      |       | STC* NOCT*      |       | STC* NOCT*      |       |       |
| Maximum Power (Pmax)                      | W               | 445   | 337             | 450   | 341             | 455   | 345   |
| Maximum Power Voltage (Vmp)               | V               | 33.02 | 30.38           | 33.22 | 30.56           | 33.42 | 30.75 |
| Maximum Power Current (Imp)               | A               | 13.48 | 11.10           | 13.55 | 11.16           | 13.61 | 11.21 |
| Open-circuit Voltage (Voc)                | V               | 39.58 | 36.02           | 39.78 | 36.20           | 39.98 | 36.38 |
| Short-circuit Current (Isc)               | A               | 14.30 | 11.53           | 14.38 | 11.60           | 14.45 | 11.66 |
| Module Efficiency STC                     | %               | 22.27 |                 | 22.52 |                 | 22.77 |       |
| Operating Temperature                     | -40°C~85°C      |       |                 |       |                 |       |       |
| Maximum system voltage                    | DC1500V(IEC)    |       |                 |       |                 |       |       |
| Maximum series fuse rating                | 30A             |       |                 |       |                 |       |       |
| Power tolerance                           | 0~+5Watt        |       |                 |       |                 |       |       |
| Temperature coefficients of Pmax          | -0.29%/°C       |       |                 |       |                 |       |       |
| Temperature coefficients of Voc           | -0.25%/°C       |       |                 |       |                 |       |       |
| Temperature coefficients of Isc           | 0.046%/°C       |       |                 |       |                 |       |       |
| Nominal operating cell temperature (NOCT) | 43±2°C          |       |                 |       |                 |       |       |

\*STC : Cell temperature: 25°C, Irradiance: 1000 W/m<sup>2</sup>, Air mass: 1.5G

\*NOCT: Air temperature: 20°C, Irradiance: 800 W/m<sup>2</sup>, Air mass: 1.5G, Wind speed: 1 m/s

## SPECIFICATIONS

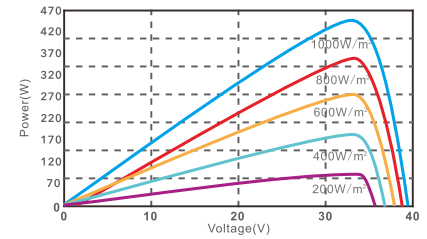
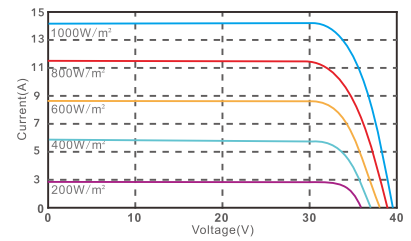
|                                    |   |  |
|------------------------------------|---|--|
| Cell Type                          | N type Mono-crystalline   |  |
| No. of cells                       | 108(6×9×2)  |  |
| Dimensions                         | 1762*1134*30mm  |  |
| Weight                             | 24.0kg  |  |
| Glass                              | 2.0mm+2.0mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass |  |
| Junction Box                       | IP68, 3 diodes  |  |
| Connector                          | MC4 Compatible  |  |
| Cable Length (Including Connector) | 4mm <sup>2</sup><br>Landscape: (+)1200/(-)1200mm<br>or Customized Length          |  |
| Packaging Configuration            | Two Box=One Pallet<br>36pcs/Box, 72pcs/Pallet, 936pcs/40HQ Container              |  |

## Electrical characteristics with different rear side power gain (reference to 450W front)

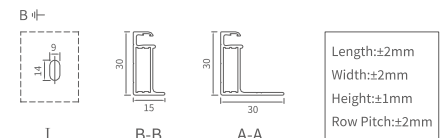
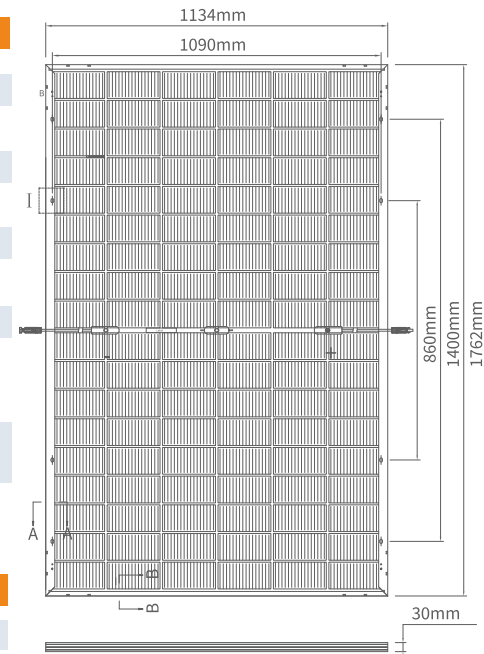
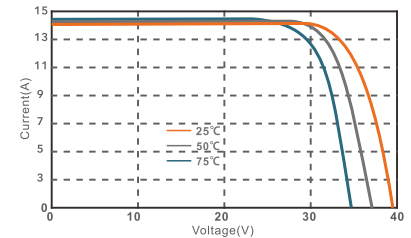
| Pmax/W | Voc/V | Isc/A | Vmp/V | Imp/A | Pmax gain |
|--------|-------|-------|-------|-------|-----------|
| 450    | 39.78 | 14.38 | 33.22 | 13.55 | 0%        |
| 473    | 39.78 | 15.10 | 33.22 | 14.22 | 5%        |
| 495    | 39.78 | 15.82 | 33.22 | 14.90 | 10%       |
| 518    | 39.78 | 16.54 | 33.22 | 15.58 | 15%       |
| 540    | 39.78 | 17.26 | 33.22 | 16.26 | 20%       |
| 563    | 39.78 | 17.98 | 33.22 | 16.93 | 25%       |
| 585    | 39.78 | 18.69 | 33.22 | 17.61 | 30%       |

## I-V CURVE

I-V characteristics at different irradiances (reference to 450W)



I-V characteristics at different temperature



Specifications included in this datasheet are subject to change without notice.

Ulica Solar reserves the right of final interpretation.

Version No.: UL-1762-108BDGNBBC-30-EN-V1.0