



# N-type i-TOPCon

MONOFACIAL DUAL GLASS MODULE

TSM-NEG18R.20 485-510W

**510<sub>W</sub>** / MAXIMUM  
POWER OUTPUT

**22.9%** / MAXIMUM  
EFFICIENCY



## High customer value

- Lower LCOE (levelized cost of energy), reduced BOS (balance of system) cost, shorter payback time
- Designed for compatibility with existing mainstream system components
- High module power, high string power and low voltage design
- Easy to handle and install on roofs with excellent size and light weight



## High power up to 510W

- Up to 22.9% module efficiency, on T10 innovation platform
- Patented i-TOPCon technology with continuous efficiency improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment



## Dual-glass design, high reliability

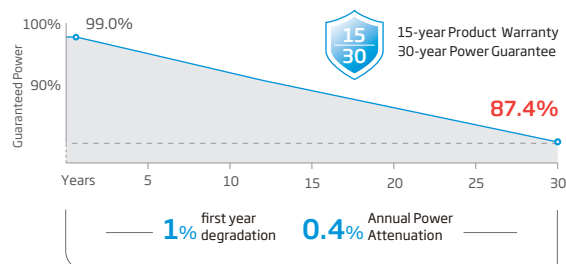
- Less prone to micro-cracks and scratches on the back during installation
- Applicable in harsh environments such as salt, ammonia, sand, high temperature and high humidity areas with excellent fire rating, weather resistance, salt spray, sand dust, ammonia performance
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



## High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Lower temperature coefficient (-0.29%/°C) and operating temperature

## Performance Warranty



\* Please refer to product warranty for details

## Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716

ISO 9001: Quality Management System

ISO 14001: Environmental Management System

ISO14064: Greenhouse Gases Emissions Verification

ISO45001: Occupational Health and Safety Management System



## ELECTRICAL DATA (STC)

|                                      |        |       |       |       |       |       |
|--------------------------------------|--------|-------|-------|-------|-------|-------|
| Peak Power Watts- $P_{MAX}(W_p)^*$   | 485    | 490   | 495   | 500   | 505   | 510   |
| Power Selection (W)**                | 0 ~ +5 |       |       |       |       |       |
| Maximum Power Voltage- $V_{MPP}$ (V) | 32.7   | 32.9  | 33.1  | 33.3  | 33.5  | 33.7  |
| Maximum Power Current- $I_{MPP}$ (A) | 14.84  | 14.91 | 14.97 | 15.03 | 15.09 | 15.14 |
| Open Circuit Voltage- $V_{oc}$ (V)   | 39.4   | 39.6  | 39.8  | 40.1  | 40.3  | 40.6  |
| Short Circuit Current- $I_{sc}$ (A)  | 15.76  | 15.80 | 15.83 | 15.86 | 15.89 | 15.93 |
| Module Efficiency $\eta_m$ (%)       | 21.8   | 22.0  | 22.3  | 22.5  | 22.7  | 22.9  |

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5. \*Measuring tolerance:  $\pm 3\%$ . \*\*Power selection up to: +3%.

## ELECTRICAL DATA (NOCT)

|                                      |       |       |       |       |       |       |
|--------------------------------------|-------|-------|-------|-------|-------|-------|
| Peak Power Watts- $P_{MAX}(W_p)^*$   | 371   | 375   | 378   | 382   | 386   | 390   |
| Maximum Power Voltage- $V_{MPP}$ (V) | 30.8  | 31.0  | 31.3  | 31.5  | 31.8  | 31.9  |
| Maximum Power Current- $I_{MPP}$ (A) | 12.02 | 12.06 | 12.08 | 12.11 | 12.15 | 12.21 |
| Open Circuit Voltage- $V_{oc}$ (V)   | 37.4  | 37.6  | 37.7  | 38.0  | 38.3  | 38.5  |
| Short Circuit Current- $I_{sc}$ (A)  | 12.70 | 12.74 | 12.76 | 12.78 | 12.81 | 12.84 |

NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s.

## TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature) 43°C ( $\pm 2^\circ\text{C}$ )

Temperature Coefficient of  $P_{MAX}$  -0.29% /°C

Temperature Coefficient of  $V_{oc}$  -0.24% /°C

Temperature Coefficient of  $I_{sc}$  0.04% /°C

Due to different testing methods, the actual performances might differ from the declared specifications.

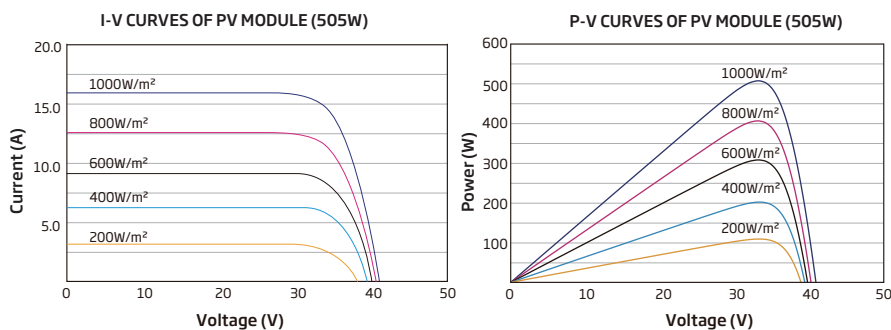
## MAXIMUM RATINGS

Operational Temperature -40~+85°C

Maximum System Voltage 1500V DC (IEC)

Max Series Fuse Rating 30A

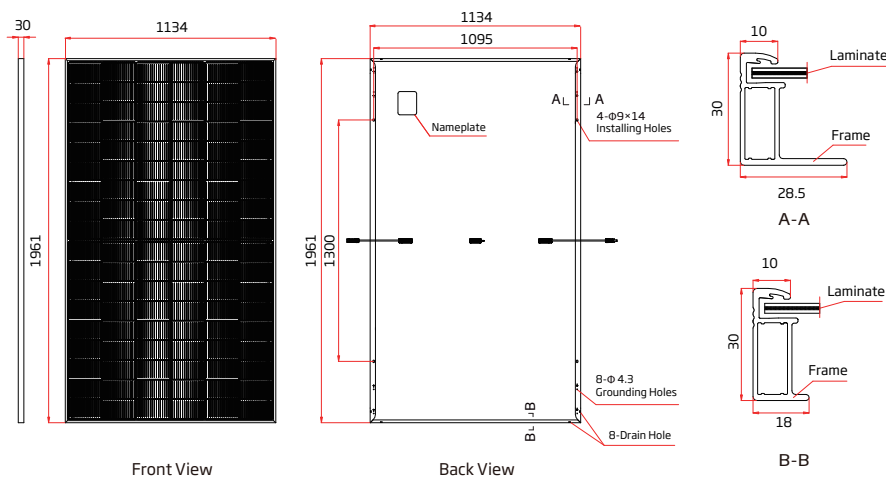
## CURVES OF PV MODULE



## MECHANICAL DATA

|                   |   |
|-------------------|---|
| Solar Cells       | N-type i-TOPCon Monocrystalline   |
| No. of cells      | 108 cells   |
| Module Dimensions | 1961×1134×30 mm<br>(77.20×44.65×1.18 inches)  |
| Weight            | 23.5 kg (51.8 lb)   |
| Front Glass       | 1.6mm (0.06inches),<br>AR Coating Heat Strengthened Glass   |
| Back Glass        | 1.6mm (0.06inches),<br>Heat Strengthened Glass  |
| Frame             | 30mm (1.18inches)<br>Anodized Aluminium Alloy, Silver   |
| J-Box             | IP 68 rated   |
| Cables            | Photovoltaic Technology<br>Cable 4.0mm <sup>2</sup> (0.006inches <sup>2</sup> )<br>Portrait: 350/280 mm (3.78/11.02 inches)<br>Length can be customized |
| Connector         | MC4 EV02 / TS4 Plus / TS4*  |
| Packaging         | Modules per box: 36 pieces<br>Modules per 40' container: 864 pieces   |

\*Please refer to regional datasheet for specified connector.



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CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.  
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