



# N-type i-TOPCon

MONOFACIAL DUAL GLASS MODULE

TSM-XXXNEG18R.20

475-510W

**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 210 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

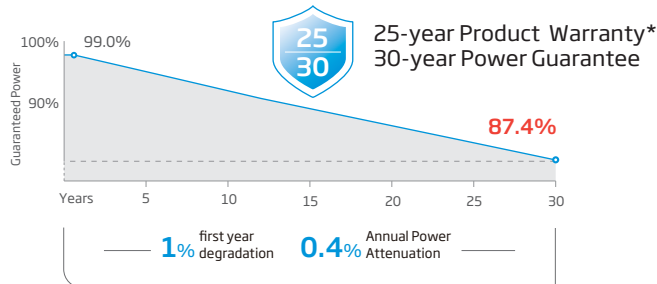
- Less prone to micro-cracks and scratches on the back during installation
- Fire Safety class rating C, Safety Class II
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load
- NEG18R.20 - Silver frame



## 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 Limited Warranty Supplement that applies to the TSM-\*\*\*NEG18R.20. Products installed within Australia & New Zealand market.)

## Comprehensive Products and System Certificates

IEC61215/IEC61730

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) TSM-XXXNEG18R.20(XXX=475-510)

|                                      |        |       |       |       |       |       |       |       |
|--------------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|
| Peak Power Watts- $P_{MAX}(W_p)^*$   | 475    | 480   | 485   | 490   | 495   | 500   | 505   | 510   |
| Power Selection- $P_{MAX}(W_p)^{**}$ | 0 ~ +5 |       |       |       |       |       |       |       |
| Maximum Power Voltage- $V_{MPP}(V)$  | 32.3   | 32.5  | 32.7  | 32.9  | 33.1  | 33.3  | 33.5  | 33.7  |
| Maximum Power Current- $I_{MPP}(A)$  | 14.72  | 14.77 | 14.84 | 14.91 | 14.97 | 15.03 | 15.09 | 15.14 |
| Open Circuit Voltage- $V_{oc}(V)$    | 39.0   | 39.2  | 39.4  | 39.6  | 39.8  | 40.1  | 40.3  | 40.6  |
| Short Circuit Current- $I_{sc}(A)$   | 15.68  | 15.72 | 15.76 | 15.80 | 15.83 | 15.86 | 15.89 | 15.93 |
| Module Efficiency $\eta_m(\%)$       | 21.4   | 21.6  | 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- $P_{MAX}(W_p)^*$  | 363   | 367   | 371   | 375   | 378   | 382   | 386   | 390   |
| Maximum Power Voltage- $V_{MPP}(V)$ | 30.4  | 30.6  | 30.8  | 31.0  | 31.3  | 31.5  | 31.8  | 31.9  |
| Maximum Power Current- $I_{MPP}(A)$ | 11.94 | 11.98 | 12.02 | 12.06 | 12.08 | 12.11 | 12.15 | 12.21 |
| Open Circuit Voltage- $V_{oc}(V)$   | 36.9  | 37.2  | 37.4  | 37.6  | 37.7  | 38.0  | 38.3  | 38.5  |
| Short Circuit Current- $I_{sc}(A)$  | 12.64 | 12.67 | 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

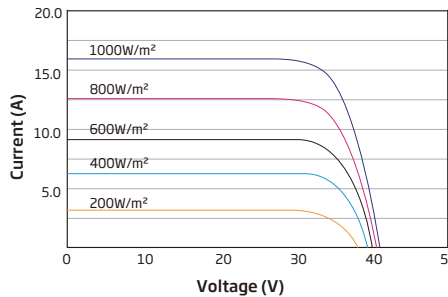
Operational Temperature -40~+70°C

Maximum System Voltage 1500V DC (IEC)

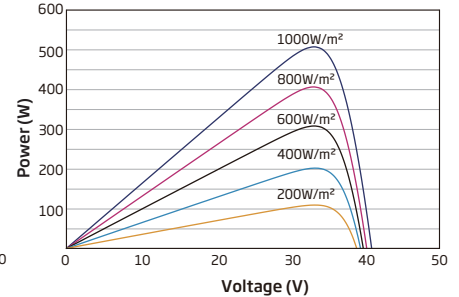
Max Series Fuse Rating 30A

### CURVES OF PV MODULE

I-V CURVES OF PV MODULE (505W)

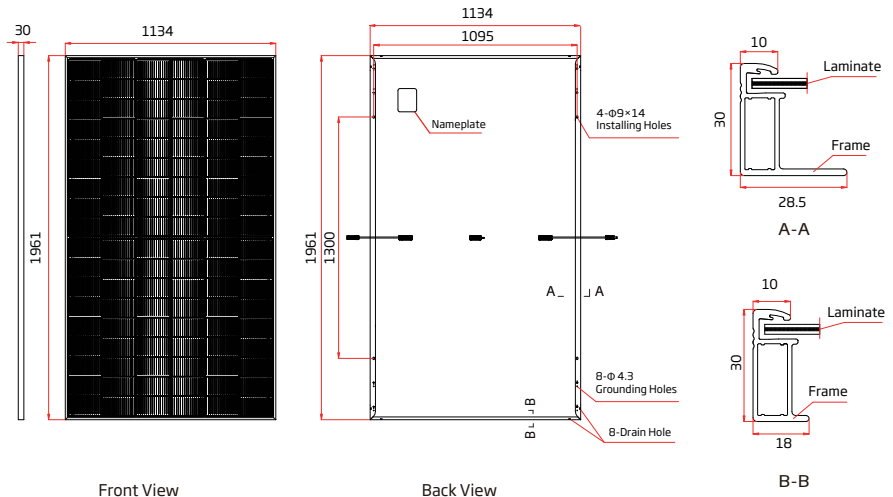


P-V CURVES OF PV MODULE (505W)



### 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/Color       | 30mm(1.18inches)<br>Anodized Aluminium Alloy,   |
| J-Box             | IP 68 rated   |
| Cables            | Photovoltaic Technology<br>Cable 4.0mm <sup>2</sup> (0.006inches <sup>2</sup> )<br>Length: 1300/1300 mm(51.1/51.1 inches) |
| Connector         | Stabuli MC4 EV02  |
| Packaging         | Modules per box: 36 pieces<br>Modules per 40' container: 864 pieces   |



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