



# 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

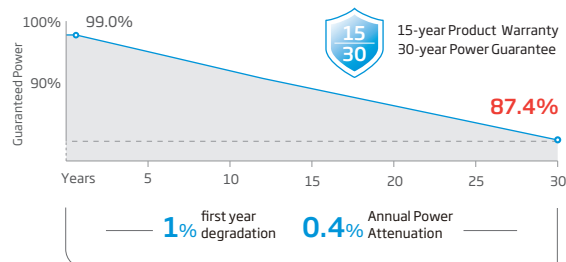
- Less prone to micro-cracks and scratches on the back during installation
- Applicable in harsh environments such as salt, ammonia, sand, high temperature and high humidity areas with excellent fire rating, weather resistance, salt spray, sand dust, ammonia performance
- Mechanical performance up to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

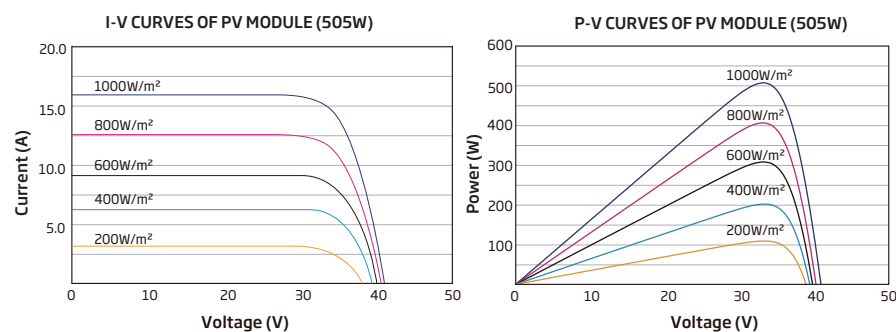
## MAXIMUM RATINGS

Operational Temperature -40~+85°C

Maximum System Voltage 1500V DC (IEC)

Max Series Fuse Rating 30A

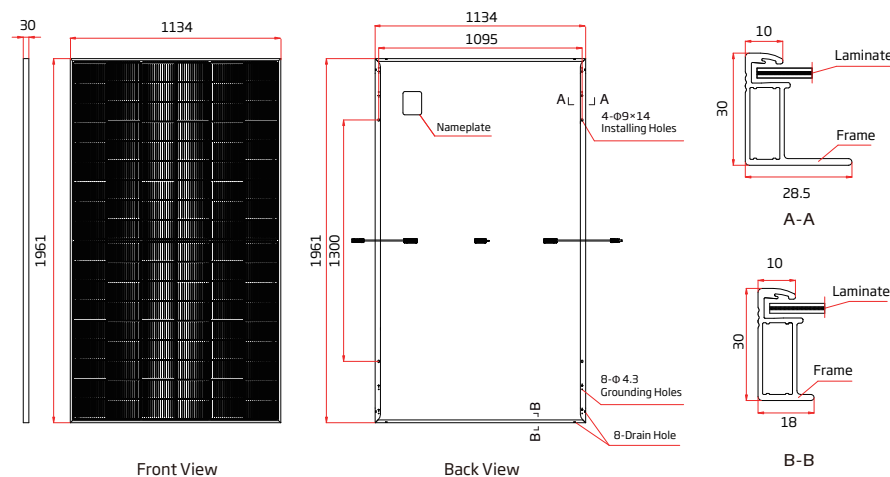
## CURVES OF PV MODULE



## MECHANICAL DATA

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