

Vertex S⁺

— i-TOPCon Ultra —

TSM-NEL18R 495-520W

Key Features



7.1kg/㎡ light design to lose 35% weight, fitting for low-bearing rooftop



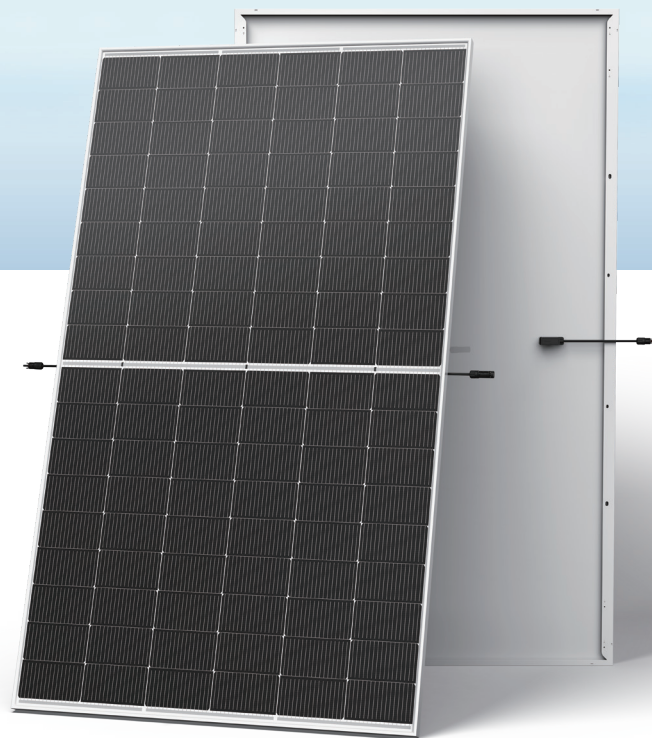
Low attenuation, easy maintenance. No compromise on power yield



Same way of construction and installation. No specialization



High efficiency with golden size, flexible in various scenarios



High Customer Value

- Suitable for residential and C&I rooftop with less bearing capacity
- Perfect size and low weight for handling and installation
- Compatible with mainstream inverters and diverse mounting systems



High reliability with lightweight design

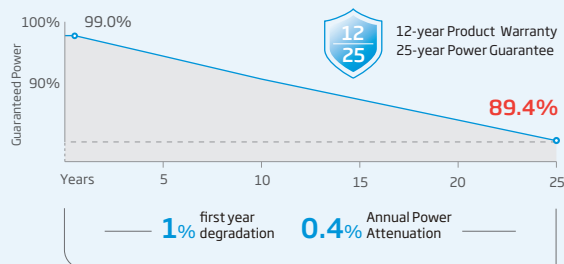
- Mechanical test load up to 3600 Pa front side and 2400 Pa back side
- Excellent Hail test performance
- Less prone to micro-cracks, excellent mechanical performance
- Excellent weather resistance, sustainable in harsh environments and extreme weather conditions
- Certified resistance against salt spray, sand dust, ammonia, PID
- Up to 15 years product warranty and 25 years power warranty



High power up to 520W

- Up to 23.4% module efficiency, on 210 innovative platform
- Patented i-TOPCon technology with continuous efficiency improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment
- Excellent low irradiation performance, validated by 3rd party
- Lower temperature efficient (-0.29%/°C) and lower working 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- $P_{MAX}(W_p)^*$	495	500	505	510	515	520
Power Selection (W)**	0 ~ +5					
Maximum Power Voltage- V_{MPP} (V)	33.10	33.30	33.50	33.70	33.90	34.10
Maximum Power Current- I_{MPP} (A)	14.97	15.03	15.09	15.14	15.20	15.25
Open Circuit Voltage- V_{oc} (V)	39.80	40.10	40.30	40.60	40.90	41.20
Short Circuit Current- I_{sc} (A)	15.83	15.86	15.89	15.93	15.96	15.99
Module Efficiency η_m (%)	22.3	22.5	22.7	22.9	23.2	23.4

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: $\pm 3\%$. **Power selection up to: +3%.

ELECTRICAL DATA (NOCT)

Peak Power Watts- $P_{MAX}(W_p)$	378	382	386	390	394	396
Maximum Power Voltage- V_{MPP} (V)	31.30	31.50	31.80	31.90	32.20	32.30
Maximum Power Current- I_{MPP} (A)	12.08	12.11	12.15	12.21	12.23	12.26
Open Circuit Voltage- V_{oc} (V)	37.70	38.00	38.30	38.50	38.80	39.00
Short Circuit Current- I_{sc} (A)	12.76	12.78	12.81	12.84	12.86	12.89

NOCT: Irradiance at 800W/m², 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.

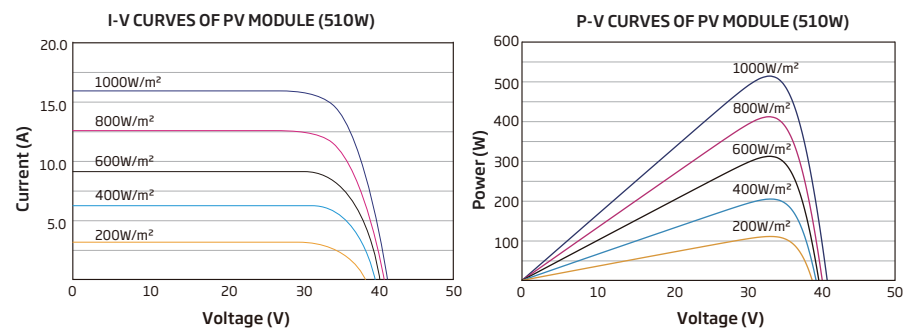
APPLICATION CONDITIONS

Operating Temperature -40~+70°C

Maximum System Voltage 1500V DC (IEC)

Max Series Fuse Rating 30A

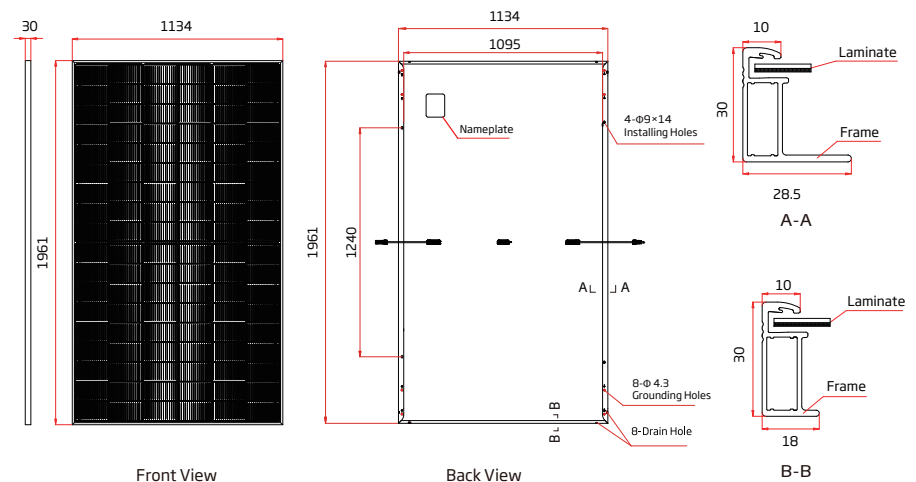
CURVES OF PV MODULE



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	15.8±3% kg
Front Glass	1.6mm (0.06inches), AR Coating Heat Strengthened Glass
Backsheet	White
Frame	30mm(1.18 inches) Anodized Aluminium Alloy, Silver
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²) Portrait: 200/320 mm(7.87/12.60 inches) Length can be customized
Connector	TS4 Plus / TS4 / MC4 EV02*
Packaging	Modules per box: 36 pieces Modules per 40' container: 864 pieces

*The connector names listed are general names; specific types are subject to the certification documents.



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