



# P-type PERC

BACKSHEET MONOCRYSTALLINE MODULE

TSM-DE18M(II) 495-515W

**515W** / MAXIMUM POWER OUTPUT

**21.4%** / MAXIMUM EFFICIENCY



## High customer value

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance Of System) cost, shorter payback time
- Lower guaranteed first year and annual degradation
- Designed for compatibility with existing mainstream system components
- Higher return on Investment



## High power up to 515W

- Large area cells based on 210mm silicon wafers and 1/3-cut cell technology
- Up to 21.4% module efficiency, on 210 innovation platform
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



## High reliability

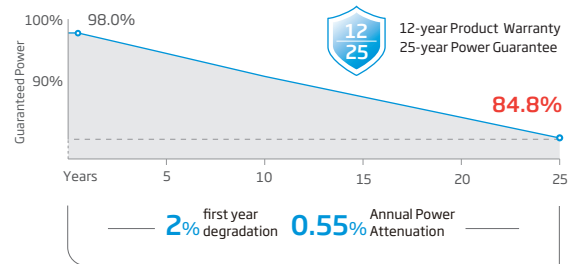
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



## High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions

## Performance Warranty



\* Please refer to product warranty for details

## Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716/UL61730

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
Power Selection (W)**	0 ~ +5				
Maximum Power Voltage- $V_{MPP}(V)$	42.6	42.8	43.0	43.2	43.4
Maximum Power Current- $I_{MPP}(A)$	11.63	11.69	11.75	11.81	11.87
Open Circuit Voltage- $V_{oc}(V)$	51.5	51.7	51.9	52.1	52.3
Short Circuit Current- $I_{sc}(A)$	12.21	12.28	12.35	12.42	12.49
Module Efficiency $\eta_m(\%)$	20.5	20.7	21.0	21.2	21.4

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

**ELECTRICAL DATA (NOCT)**

Peak Power Watts- $P_{MAX}(W_p)$	373	377	381	385	388
Maximum Power Voltage- $V_{MPP}(V)$	40.2	40.4	40.6	40.5	40.7
Maximum Power Current- $I_{MPP}(A)$	9.28	9.33	9.38	9.50	9.53
Open Circuit Voltage- $V_{oc}(V)$	48.4	48.6	48.8	49.0	49.2
Short Circuit Current- $I_{sc}(A)$	9.84	9.90	9.95	10.01	10.06

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

**TEMPERATURE RATINGS**

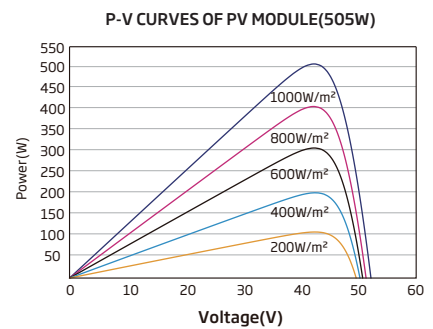
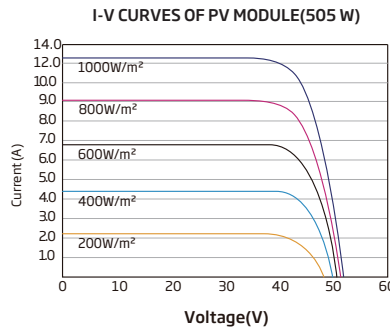
NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of $P_{MAX}$	- 0.34% /°C
Temperature Coefficient of $V_{oc}$	- 0.25% /°C
Temperature Coefficient of $I_{sc}$	0.04% /°C

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) 1500V DC (UL)
Max Series Fuse Rating	20A

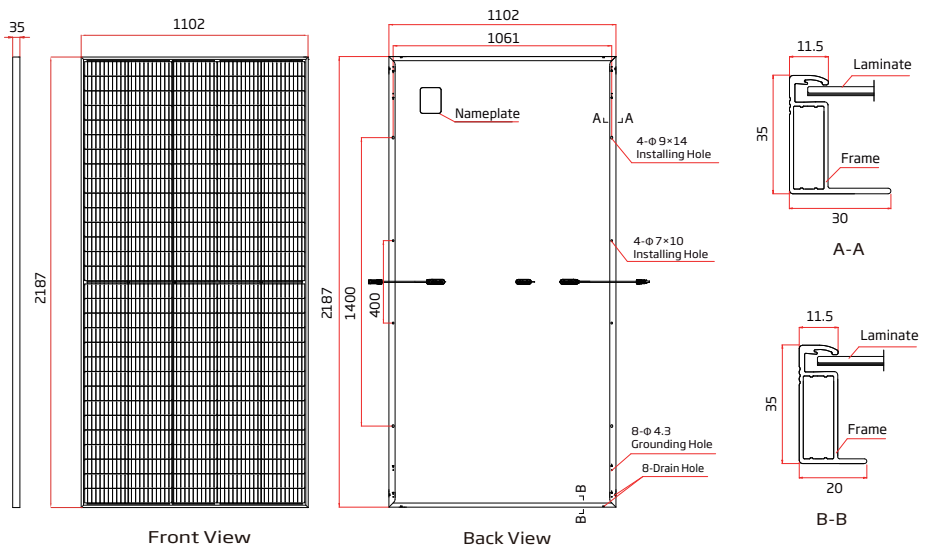
**CURVES OF PV MODULE**



**MECHANICAL DATA**

Solar Cells	Monocrystalline
No. of cells	150 cells
Module Dimensions	2187×1102×35 mm (86.10×43.39×1.38 inches)
Weight	26.3 kg (58.0 lb)
Front Glass	3.2mm (0.13inches), AR Coating Tempered Glass
Backsheet	White
Frame	35mm(1.38 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ) Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EV02 / TS4*
Packaging	Modules per box: 31 pieces Modules per 40' container: 620pieces

\*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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