



BACKSHEET MONOCRYSTALLINE MODULE

Preliminary

PRODUCT: TSM-DE18M.08(II)

POWER RANGE: 485-510 W

510 W

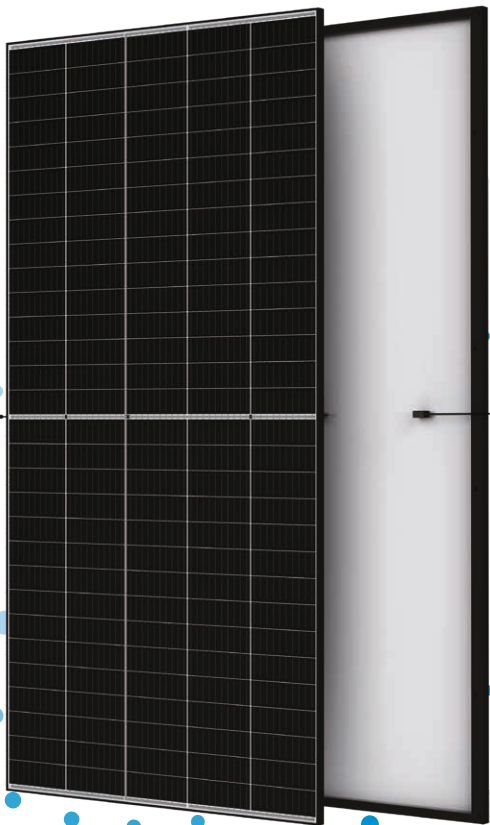
MAXIMUM POWER OUTPUT

0/+5 W

POSITIVE POWER TOLERANCE

21.2%

MAXIMUM EFFICIENCY



High power & efficiency

- Maximum energy harvest from roofs
- 60 W higher than the previous generation



Cutting edge technology

- Industry-leading 210 mm triple-cut solar cells
- Best-in-class engineering, manufacturing processes and quality control
- Assembly in fully automated and newly built state-of-the-art factories



High quality

- Extra protection with extended 15-year product warranty and 25-year performance warranty
- Beyond industry-standard hail test passed: 35 mm hail size
- Carefully selected materials for the best reliability also in demanding climates
- Snow load up to 6000 pa, wind load up to 2400 pa



Easy design & installation

- Mainstream rooftop mounting methods approved
- High compatibility with mainstream inverters and optimizers



Optimized overall cost

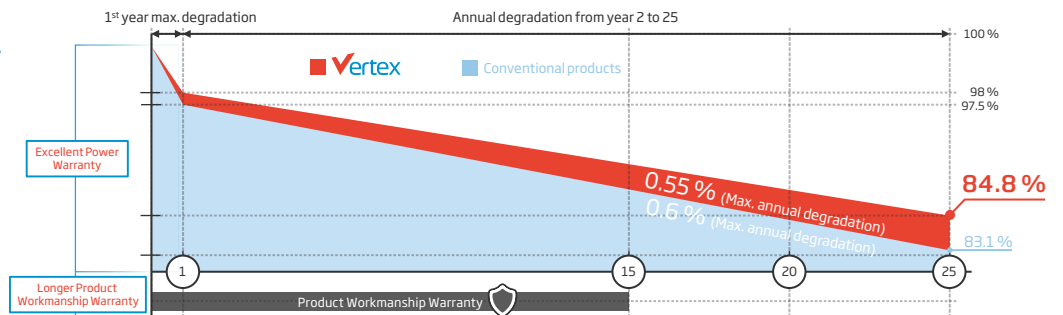
- Lower cost for structure, cable, workmanship per Wp
- Only one stock item to fit all application scenarios on larger rooftops

Extended Vertex Warranty

2% 1st year max. degradation

0.55% Max. annual degradation from year 2 to 25

15 Years Product Workmanship Warranty



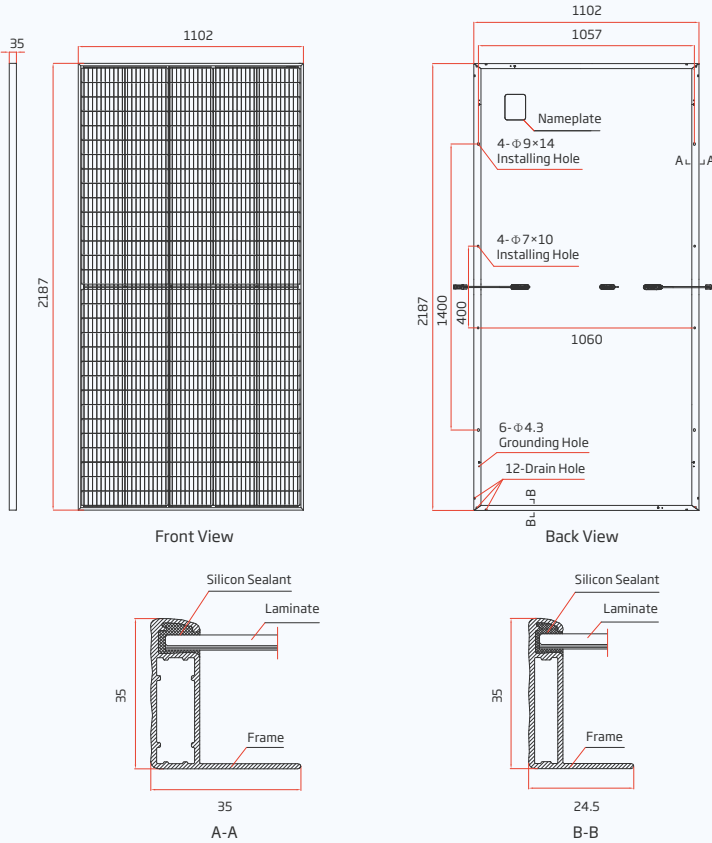
Comprehensive Product and System Certificates



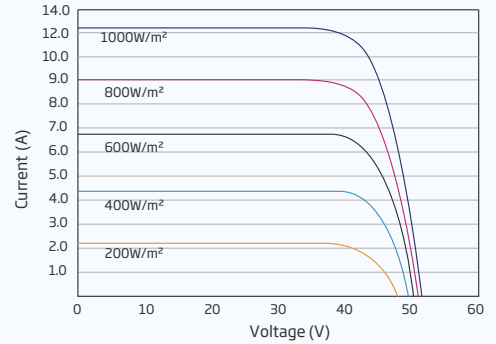
IEC61215/IEC61730/IEC61701/IEC62716/UL61730
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gases Emissions Verification
 ISO45001: Occupational Health and Safety Management System



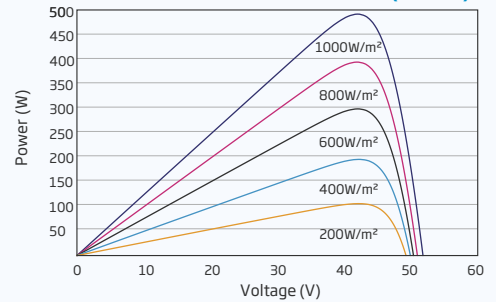
DIMENSIONS OF PV MODULE (mm)



I-V CURVES OF PV MODULE (495 W)



P-V CURVES OF PV MODULE (495 W)



ELECTRICAL DATA (STC)

	TSM-485 DE18M.08	TSM-490 DE18M.08	TSM-495 DE18M.08	TSM-500 DE18M.08	TSM-505 DE18M.08	TSM-510 DE18M.08
Peak Power Watts-P _{MAX} (Wp)*	485	490	495	500	505	510
Power Tolerance-P _{MAX} (W)	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5
Maximum Power Voltage-V _{MPP} (V)	42.2	42.4	42.6	42.8	43.0	43.2
Maximum Power Current-I _{MPP} (A)	11.49	11.56	11.63	11.69	11.75	11.81
Open Circuit Voltage-V _{OC} (V)	51.1	51.3	51.5	51.7	51.9	52.1
Short Circuit Current-I _{SC} (A)	12.07	12.14	12.21	12.28	12.35	12.42
Module Efficiency η_m (%)	20.1	20.3	20.5	20.7	21.0	21.2

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

ELECTRICAL DATA (NOCT)

	TSM-485 DE18M.08	TSM-490 DE18M.08	TSM-495 DE18M.08	TSM-500 DE18M.08	TSM-505 DE18M.08	TSM-510 DE18M.08
Maximum Power-P _{MAX} (Wp)	365	369	373	377	381	385
Maximum Power Voltage-V _{MPP} (V)	39.9	40.0	40.2	40.4	40.6	40.5
Maximum Power Current-I _{MPP} (A)	9.17	9.22	9.28	9.33	9.38	9.50
Open Circuit Voltage-V _{OC} (V)	48.1	48.2	48.4	48.6	48.8	49.0
Short Circuit Current-I _{SC} (A)	9.73	9.78	9.84	9.90	9.95	10.01

NOCT: Irradiance at 800 W/m², Ambient Temperature 20 °C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	150 cells
Module Dimensions	2187 x 1102 x 35 mm
Weight	26.5 kg
Glass	3.2 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA
Backsheet	White
Frame	35mm Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0 mm ² , Portrait: 280/280 mm, Landscape: 1400/1400 mm
Connector	TS4 / MC4 EV02*

*Special order only.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43 °C (± 2 K)
Temperature Coefficient of P _{MAX}	-0.34%/K
Temperature Coefficient of V _{OC}	-0.25%/K
Temperature Coefficient of I _{SC}	0.04%/K

MAXIMUM RATINGS

Operational Temperature	-40 to +85 °C
Maximum System Voltage	1500 V DC (IEC)
Max Series Fuse Rating	20A

WARRANTY

15 Year product workmanship warranty
25 Year power warranty
2% First year degradation
0.55% Annual power degradation

(Please refer to the applicable limited warranty for details)

PACKAGING CONFIGURATION

Modules per box: 31 pieces
Modules per 40' container: 620 pieces