

510 W

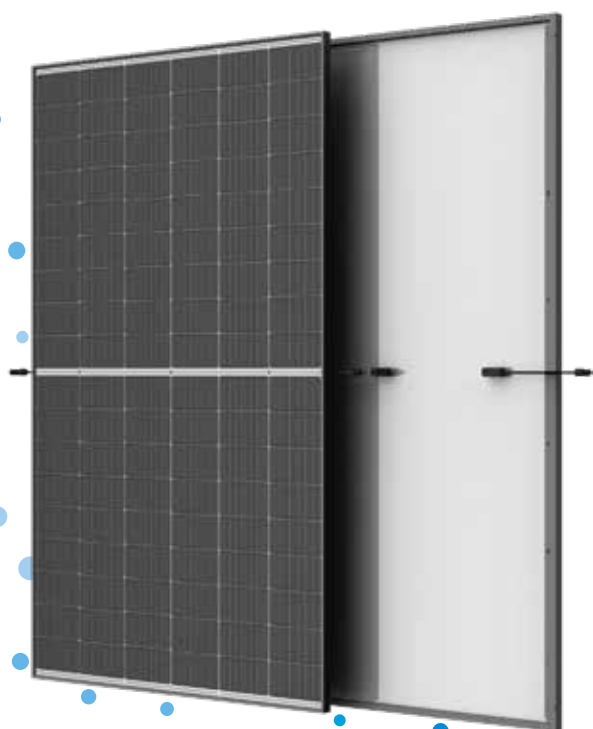
MAXIMUM POWER OUTPUT

0/+5 W

POSITIVE POWER TOLERANCE

22.9 %

MAXIMUM EFFICIENCY



Optimal Size for Commercial & Industrial Rooftops

- Compact module design with medium size for lower total system cost and shorter payback time
- Low voltage design for high string power



Lightweight Dual-glass Design, High Reliability

- Excellent fire resistance; durability in harsh environmental conditions and high temperature or high humidity areas
- Up to 5,400 Pa snow load and 2,400 Pa wind load (test loads)
- 25 years product warranty



Maximized Energy Harvest

- High module power: Up to 510 W, 22.9 % module efficiency with n type i-TOPCon technology
- Maximum 1 % first-year degradation and 0.4 % annual degradation
- 30 years power warranty



Universal Solution for Rooftop Systems

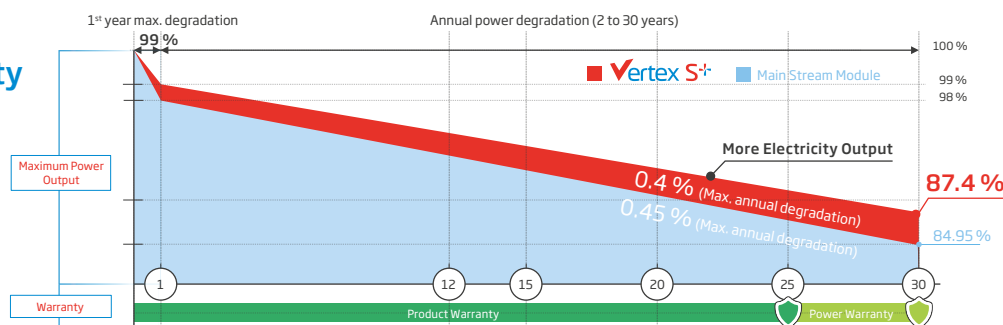
- Designed for compatibility with existing mainstream inverters, optimizers and mounting systems
- Easy to handle (length below 2 meters) and install on roofs with excellent size and light weight
- Flexible installation solutions for system deployment

Extended Vertex S⁺ Warranty

1 %
1st year max. degradation

0.4 %
Max. annual degradation from year 2 to 30

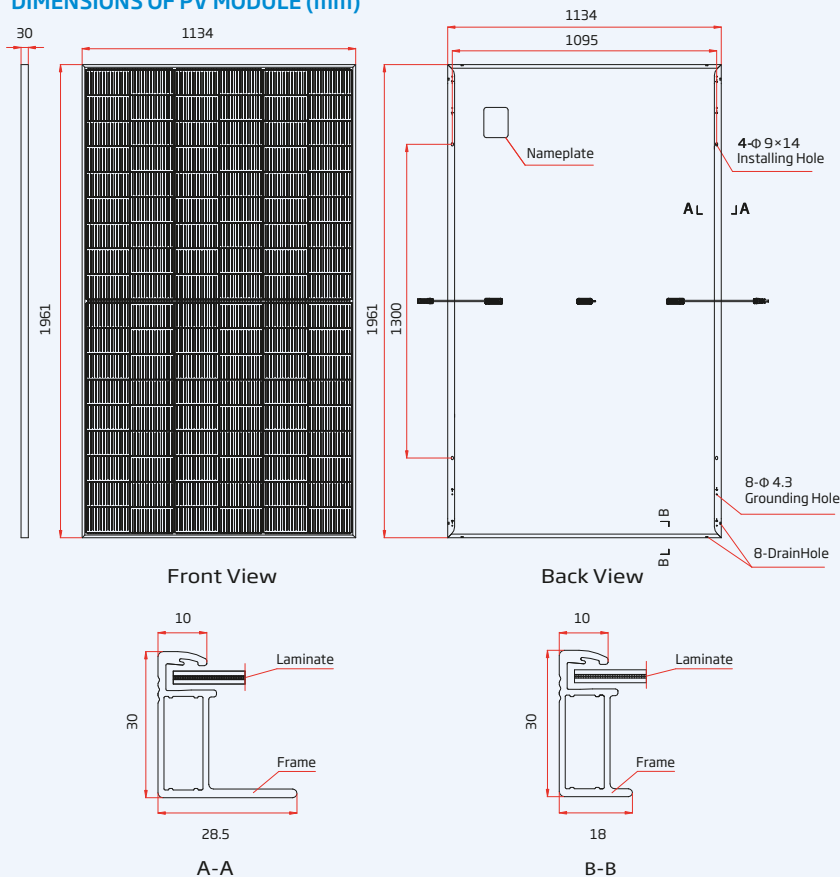
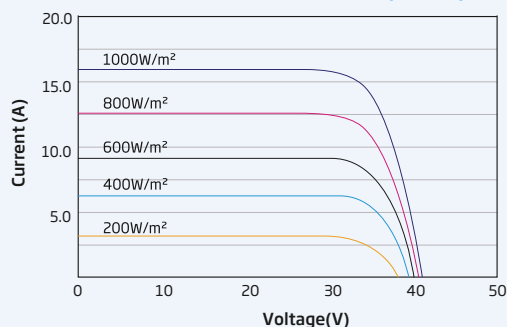
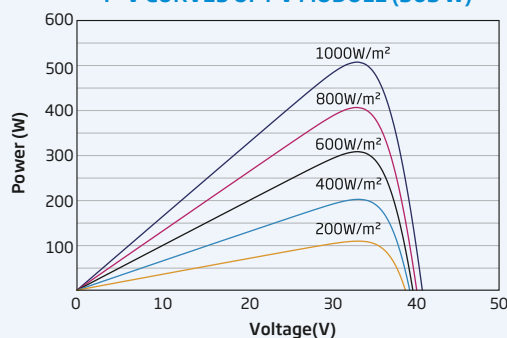
25 Years
Product Workmanship Warranty



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

DIMENSIONS OF PV MODULE (mm)

I-V CURVES OF PV MODULE (505 W)

P-V CURVES OF PV MODULE (505 W)


ELECTRICAL DATA (STC)	TSM-485 NEG18R.28	TSM-490 NEG18R.28	TSM-495 NEG18R.28	TSM-500 NEG18R.28	TSM-505 NEG18R.28	TSM-510 NEG18R.28
Peak Power Watts-P _{MAX} (Wp)*	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 η_m (%)	21.8	22.0	22.3	22.5	22.7	22.9

STC: Irradiance 1000 W/m², Cell Temperature 25 °C, Air Mass AM 1.5.

*Measuring tolerance: ±3 %. **Power selection up to: +3%

ELECTRICAL DATA (NOCT)	TSM-485 NEG18R.28	TSM-490 NEG18R.28	TSM-495 NEG18R.28	TSM-500 NEG18R.28	TSM-505 NEG18R.28	TSM-510 NEG18R.28
Maximum Power-P _{MAX} (Wp)	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 800 W/m², Ambient Temperature 20 °C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	108 cells
Module Dimensions	1961×1134×30 mm
Weight	23.5 kg
Front Glass	1.6 mm, High Transmission, AR Coated Heat Strengthened Glass
Back Glass	1.6 mm, Heat Strengthened Glass
Frame	30 mm Anodized Aluminium Alloy, Black
J-Box	IP 68 rated, 3 bypass diodes
Cables	Photovoltaic Technology Cable 4.0 mm ² Landscape: 1300/1300 mm Portrait: 280/350 mm*
Connector	TS4 / TS4 Plus / MC4 EV02*

*Special order only.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°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

MAXIMUM RATINGS

Operational Temperature	-40 to +85 °C
Maximum System Voltage	1500 V DC (IEC)
Max Series Fuse Rating	30 A

WARRANTY

25 year Product Workmanship Warranty
30 year Power Warranty
1 % first year degradation
0.4 % Annual Power Attenuation
(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box:	36 pieces
Modules per 40' container:	864 pieces

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

© 2024 Trina Solar Co., Ltd. All rights reserved. Specifications included in this datasheet are subject to change without notice. The right of final interpretation belongs to Trina Solar Co., Ltd.

Version number: TSM_EN_2024_C