

# 515 W

MAXIMUM POWER OUTPUT

# 0/+5 W

POSITIVE POWER TOLERANCE

# 23.2 %

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 515 W, 23.2 % 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

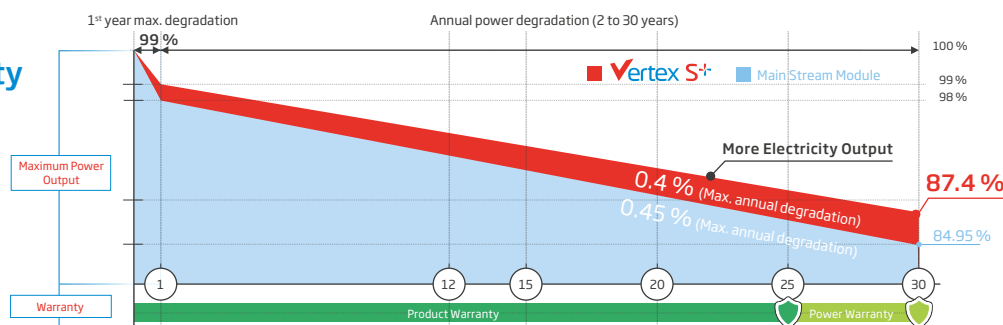
- Designed with aesthetics in mind for an outstanding visual appearance
- Designed for compatibility with existing mainstream inverters, optimizers and mounting systems
- Easy to handle (length below 2 meters) and install on roofs with excellent size and light weight
- Flexible installation solutions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

### Extended Vertex S<sup>+</sup> Warranty

**1 %**  
1<sup>st</sup> year max. degradation

**0.4 %**  
Max. annual degradation from year 2 to 30

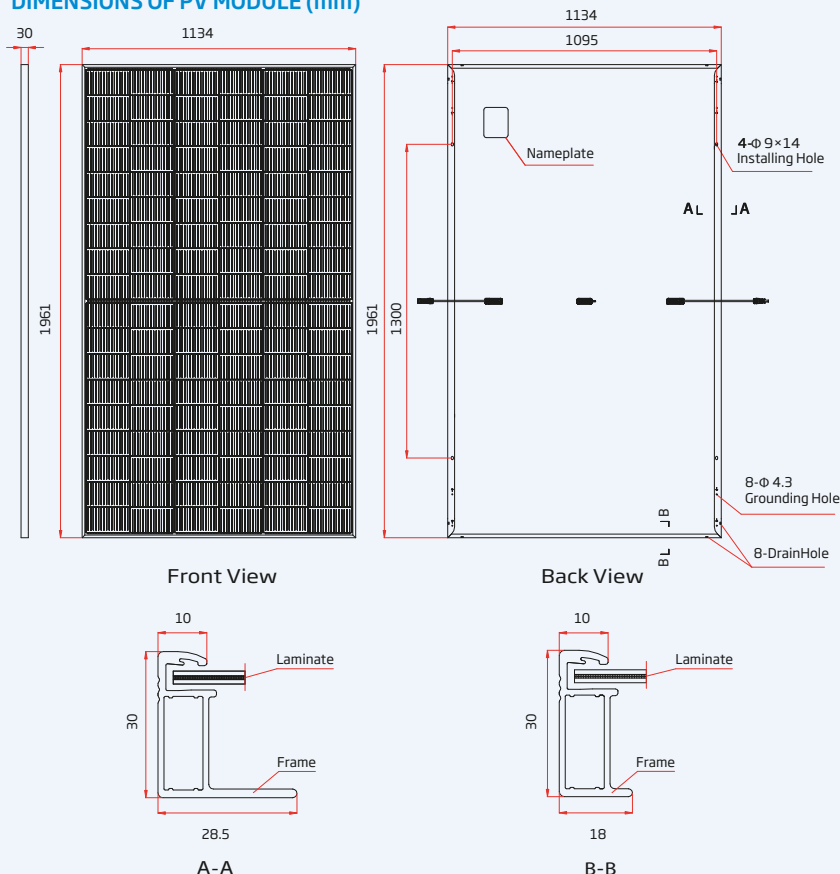
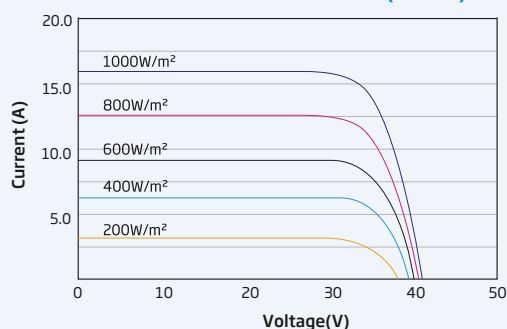
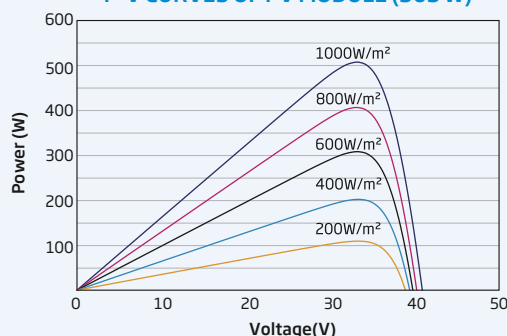
**25 Years**  
Product Workmanship Warranty



### 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 TSM-490 TSM-495 TSM-500 TSM-505 TSM-510 TSM-515  
NEG18R.25 NEG18R.25 NEG18R.25 NEG18R.25 NEG18R.25 NEG18R.25 NEG18R.25

|                                            |       |       |       |       |       |       |       |
|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Peak Power Watts-P <sub>MAX</sub> (Wp)*    | 485   | 490   | 495   | 500   | 505   | 510   | 515   |
| Power Selection (W)**                      | 0/+5  |       |       |       |       |       |       |
| Maximum Power Voltage-V <sub>MPP</sub> (V) | 32.7  | 32.9  | 33.1  | 33.3  | 33.5  | 33.7  | 33.9  |
| Maximum Power Current-I <sub>MPP</sub> (A) | 14.84 | 14.91 | 14.97 | 15.03 | 15.09 | 15.14 | 15.20 |
| Open Circuit Voltage-V <sub>OC</sub> (V)   | 39.4  | 39.6  | 39.8  | 40.1  | 40.3  | 40.6  | 40.9  |
| Short Circuit Current-I <sub>SC</sub> (A)  | 15.76 | 15.80 | 15.83 | 15.86 | 15.89 | 15.93 | 15.96 |
| Module Efficiency $\eta_m$ (%)             | 21.8  | 22.0  | 22.3  | 22.5  | 22.7  | 22.9  | 23.2  |

STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25 °C, Air Mass AM 1.5. \*Measuring tolerance:  $\pm 3\%$ . \*\*Power selection up to: +3%

**ELECTRICAL DATA (NOCT)**

TSM-485 TSM-490 TSM-495 TSM-500 TSM-505 TSM-510 TSM-515  
NEG18R.25 NEG18R.25 NEG18R.25 NEG18R.25 NEG18R.25 NEG18R.25 NEG18R.25

|                                            |       |       |       |       |       |       |       |
|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Power-P <sub>MAX</sub> (Wp)        | 371   | 375   | 378   | 382   | 386   | 390   | 394   |
| Maximum Power Voltage-V <sub>MPP</sub> (V) | 30.8  | 31.0  | 31.3  | 31.5  | 31.8  | 31.9  | 32.2  |
| Maximum Power Current-I <sub>MPP</sub> (A) | 12.02 | 12.06 | 12.08 | 12.11 | 12.15 | 12.21 | 12.23 |
| Open Circuit Voltage-V <sub>OC</sub> (V)   | 37.4  | 37.6  | 37.7  | 38.0  | 38.3  | 38.5  | 38.8  |
| Short Circuit Current-I <sub>SC</sub> (A)  | 12.70 | 12.74 | 12.76 | 12.78 | 12.81 | 12.84 | 12.86 |

NOCT: Irradiance at 800 W/m<sup>2</sup>, 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 <sup>2</sup><br>Landscape: 1300/1300 mm<br>Portrait: 280/350 mm* |
| Connector         | TS4 / TS4 Plus / MC4 EV02*                                                                            |

\*Special order only.

**TEMPERATURE RATINGS**

|                                             |                                |
|---------------------------------------------|--------------------------------|
| NOCT (Nominal Operating Cell Temperature)   | 43°C ( $\pm 2^\circ\text{C}$ ) |
| Temperature Coefficient of P <sub>MAX</sub> | -0.29%/°C                      |
| Temperature Coefficient of V <sub>OC</sub>  | -0.24%/°C                      |
| Temperature Coefficient of I <sub>SC</sub>  | 0.04%/°C                       |

**MAXIMUM RATINGS**

|                         |                 |
|-------------------------|-----------------|
| Operational Temperature | -40 to +70 °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.

© 2025 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\_2025\_B