# Vertex S+

# N-type i-TOPCon

## MONOFACIAL DUAL GLASS MODULE

TSM-NEG18R.28 **490-520W**

**520**W / MAXIMUM POWER OUTPUT

**23.4**% / MAXIMUM EFFICIENCY

### High customer value

- Lower LCOE (levelized cost of energy), reduced BOS (balance of system) cost, shorter payback time
- Designed for compatibility with existing mainstream system components
- High module power, high string power and low voltage design
- Easy to handle and install on roofs with excellent size and light weight

### High power up to 520W

- Up to 23.4% module efficiency , on 210 innovation platform
- Patented i-TOPCon technology with continuous efficiency improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment

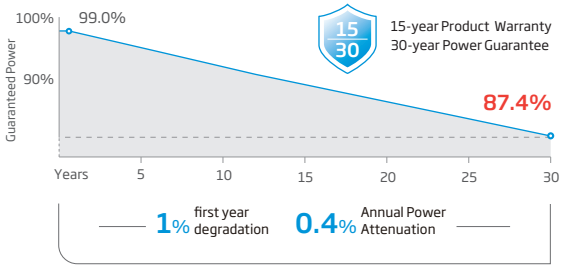
### Dual-glass design, high reliability

- Less prone to micro-cracks and scratches on the back during installation
- Applicable in harsh environments such as salt, ammonia, sand, high temperature and high humidity areas with excellent fire rating, weather resistance, salt spray, sand dust, ammonia performance
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load

### High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Lower temperature coefficient (-0.29%/°C) and operating 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

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_A

Trinasolar

# Vertex S+

N-type i-TOPCon MONOFACIAL DUAL GLASS MODULE

## ELECTRICAL DATA (STC)

| Peak Power Watts-PMAX(Wp)* | 490 | 495 | 500 | 505 | 510 | 515 | 520 |
|---|---|---|---|---|---|---|---|
| Power Selection (W)** | | | | 0 ~ +5 | | | |
| Maximum Power Voltage-VMPP (V) | 32.9 | 33.1 | 33.3 | 33.5 | 33.7 | 33.9 | 34.1 |
| Maximum Power Current-IMPP (A) | 14.91 | 14.97 | 15.03 | 15.09 | 15.14 | 15.20 | 15.25 |
| Open Circuit Voltage-VOC (V) | 39.6 | 39.8 | 40.1 | 40.3 | 40.6 | 40.9 | 41.2 |
| Short Circuit Current-ISC (A) | 15.80 | 15.83 | 15.86 | 15.89 | 15.93 | 15.96 | 15.99 |
| Module Efficiency η m (%) | 22.0 | 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: ±3%. **Power selection up to: +3%.

## ELECTRICAL DATA (NOCT)

| Peak Power Watts-PMAX(Wp) | 375 | 378 | 382 | 386 | 390 | 394 | 396 |
|---|---|---|---|---|---|---|---|
| Maximum Power Voltage-VMPP (V) | 31.0 | 31.3 | 31.5 | 31.8 | 31.9 | 32.2 | 32.3 |
| Maximum Power Current-IMPP (A) | 12.06 | 12.08 | 12.11 | 12.15 | 12.21 | 12.23 | 12.26 |
| Open Circuit Voltage-VOC (V) | 37.6 | 37.7 | 38.0 | 38.3 | 38.5 | 38.8 | 39.0 |
| Short Circuit Current-ISC (A) | 12.74 | 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

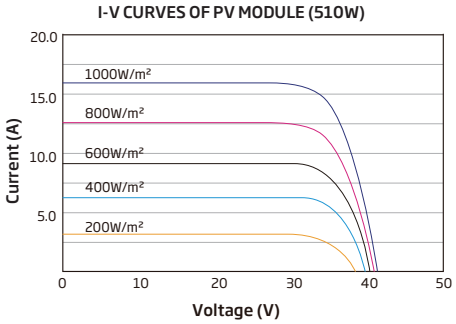
| NOCT (Nominal Operating Cell Temperature) | 43℃ (±2℃) |
|---|---|
| Temperature Coefficient of PMAX | - 0.29% /℃ |
| Temperature Coefficient of VOC | - 0.24% /℃ |
| Temperature Coefficient of ISC | 0.04% /℃ |

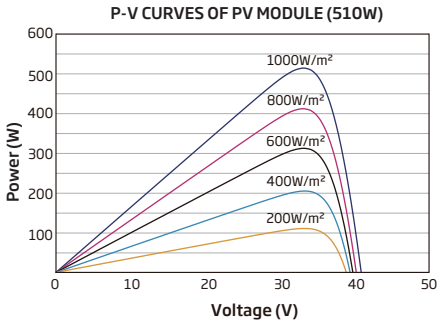
Due to different testing methods, the actual performances might differ from the declared specifications.

## APPLICATION CONDITIONS

| Operating Temperature | -40~+70℃ |
|---|---|
| Maximum System Voltage | 1500V DC (IEC) |
| Max Series Fuse Rating | 30A |

## CURVES OF PV MODULE

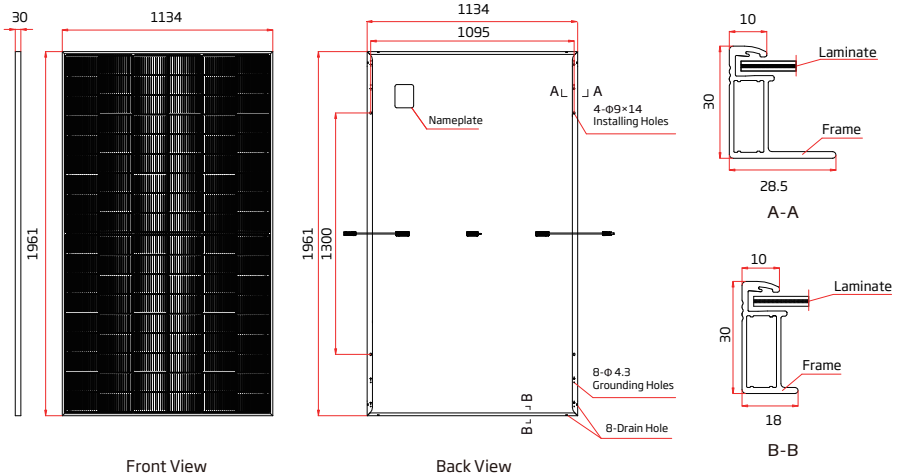



## MECHANICAL DATA

| 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 | 23.5 kg (51.8 lb) |
| Front Glass | 1.6mm (0.06inches), AR Coating Heat Strengthened Glass |
| Back Glass | 1.6mm (0.06 inches), Heat Strengthened Glass |
| Frame | 30mm(1.18 inches) Anodized Aluminium Alloy, Black |
| J-Box | IP 68 rated |
| Cables | Photovoltaic Technology Cable 4.0mm² (0.006 inches²) Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized |
| Connector | MC4 EVO2 / TS4 Plus / TS4* |
| Packaging | Modules per box: 36 pieces Modules per 40' container: 864 pieces |

*Please refer to regional datasheet for specified connector.




www.trinasolar.com

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_A

Trinasolar