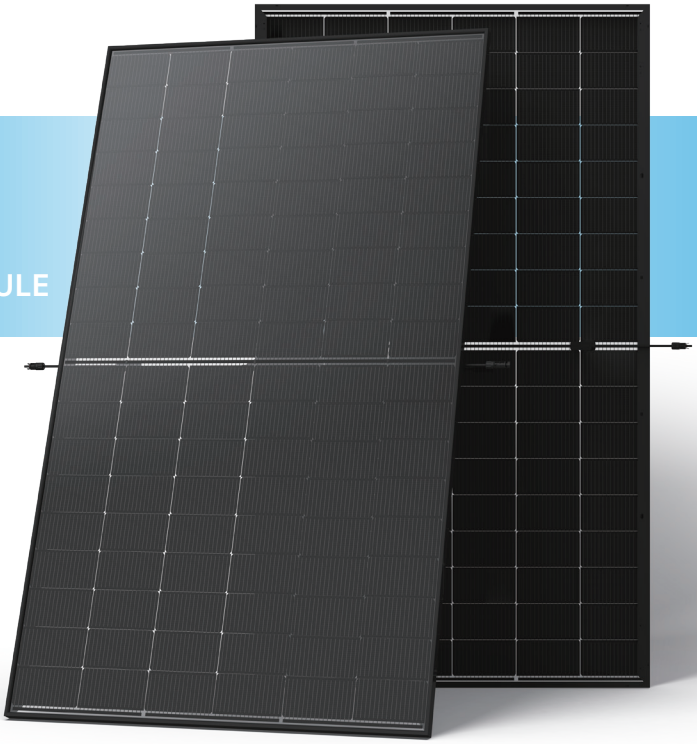
Vertex S+

N-type i-TOPCon

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

TSM-NEG18RC.27 **485-505W**



505W / MAXIMUM POWER OUTPUT

22.7% / 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 505W

- Up to 22.7% 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

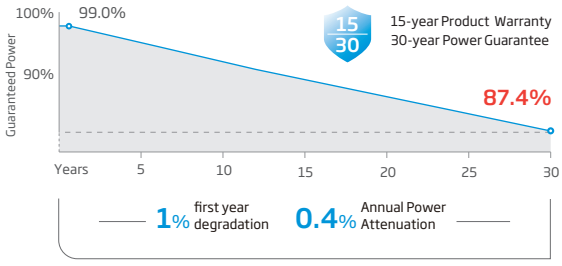
Dual-glass design, high reliability

- 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.
© 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_PA3_S3

Trinasolar

Vertex S+

N-type i-TOPCon BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

ELECTRICAL DATA (STC & NOCT)

Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power Watts-PMAX(Wp)*	485	371	490	375	495	378	500	382	505	386
Power Selection (W)**					0 ~ +5					
Maximum Power Voltage-VMPP (V)	32.7	30.8	32.9	31.0	33.1	31.3	33.3	31.5	33.5	31.8
Maximum Power Current-IMPP (A)	14.84	12.02	14.91	12.06	14.97	12.08	15.03	12.11	15.09	12.15
Open Circuit Voltage-VOC (V)	39.4	37.4	39.6	37.6	39.8	37.7	40.1	38.0	40.3	38.3
Short Circuit Current-ISC (A)	15.76	12.70	15.80	12.74	15.83	12.76	15.86	12.78	15.89	12.81
Module Efficiency η m (%)	21.8		22.0		22.3		22.5		22.7	

STC: Irrdiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s. *Measuring tolerance: ±3%. **Power selection up to: +3%.

Electrical characteristics with different power bin (reference to 5% & 10% backside power gain)

Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Peak Power Watts-PMAX(Wp)*	509	534	515	539	520	545	525	550	530	556
Maximum Power Voltage-VMPP (V)	32.7	32.7	32.9	32.9	33.1	33.1	33.3	33.3	33.5	33.5
Maximum Power Current-IMPP (A)	15.58	16.32	15.66	16.40	15.72	16.47	15.78	16.53	15.84	16.60
Open Circuit Voltage-VOC (V)	39.4	39.4	39.6	39.6	39.8	39.8	40.1	40.1	40.3	40.3
Short Circuit Current-ISC (A)	16.55	17.34	16.59	17.38	16.62	17.41	16.65	17.45	16.68	17.48

Power Bifaciality:80±5%.

TEMPERATURE RATINGS

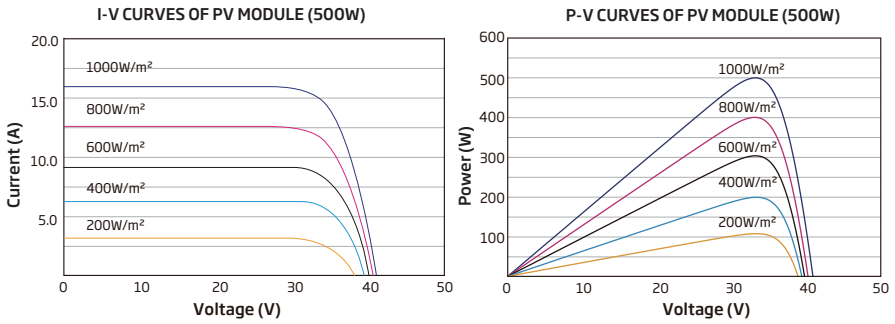
NOCT (Nominal Operating Cell Temperature)	43℃ (±2℃)
Temperature Coefficient of PMAX	- 0.29% /℃
Temperature Coefficient of VOC	- 0.24% /℃
Temperature Coefficient of ISC	0.04% /℃

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

MAXIMUM RATINGS

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

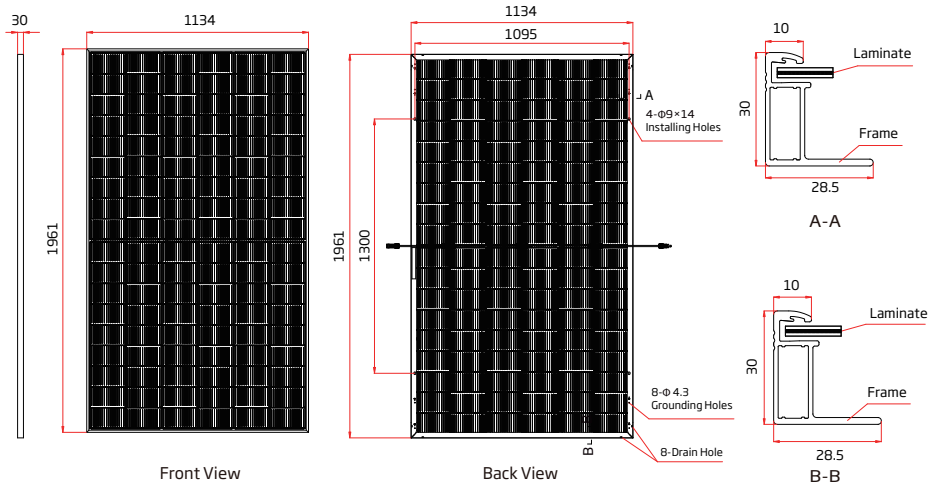
CURVES OF PV MODULE



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	24.0 kg (52.9 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.



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_PA3_S3

www.trinasolar.com

Trinasolar