Strong Wind Protection

Severe Hail Protection

Heavy Snow Protection

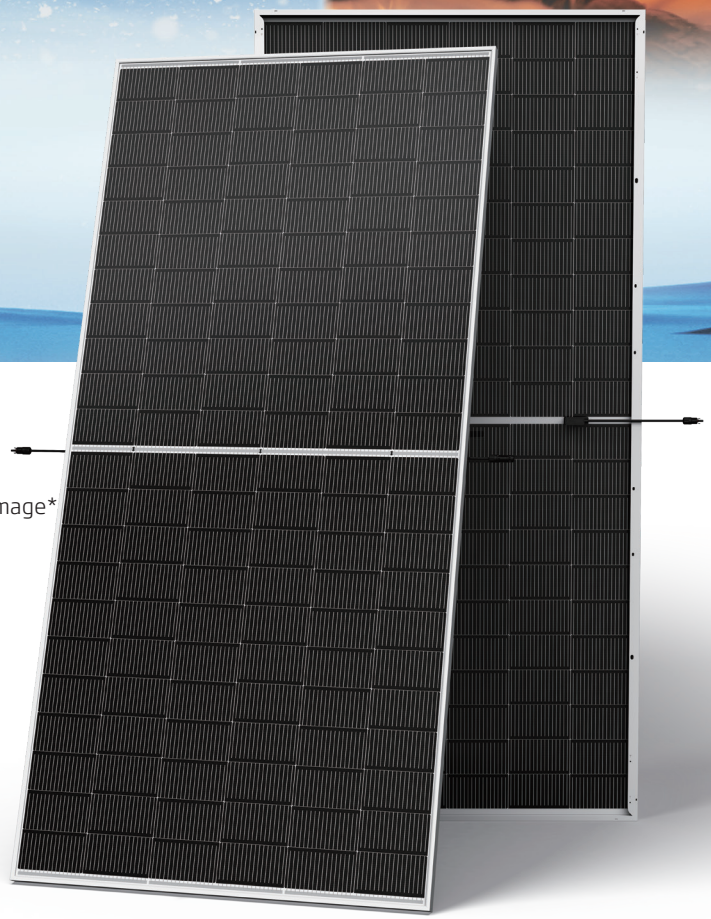
Superior Fire Protection

Vertex N

— i-TOPCon Ultra —

Shield

TSM-NED19RC.20
620-645W



Key Features

Pass IEC 55mm width hail certificate at a speed of 33.9m/s
Effectively reduce over 50% probability of losses caused by hail damage*

Mechanical load with fixed mounting installation: +7000/-5000Pa
Mechanical load with tracking installation: +3600/-3000Pa

Pass IEC 61730-2 Class A+A fire rating certificate
Pass EN13501-1 Class B certificate (FIGRA 19W/s)
Pass UL61730 Type 30 fire resistance certificate

Uneven snow load capacity up to 6600Pa

*Please get in contact with Trina Solar technical team for more details on the VDE PRE/PML/AAL report.

Better bankability, more profit

- Highly reliable products reduce insurance costs and reduce payout risk
- High power up to 645W and 23.9% module efficiency, on 210 innovation platform
- Low voltage design with higher string power, effectively reducing BOS and LCOE
- High Bifaciality & excellent low-irradiation performance, improve electricity generation per Watt

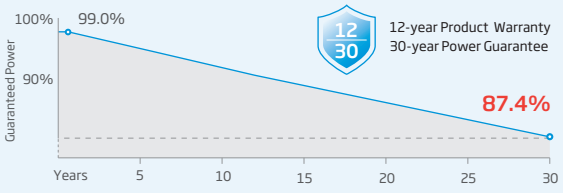
High reliability, resist for extremes

- Pass salt, ammonia, dust, PID, LID, LeTID certificate

Diversified scenarios adaption

- Support diversified installation methods, suitable for various application scenarios
- Typical module format design, better compatibility with trackers
- Excellent compatibility with existing mainstream inverters

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

Version number: TSM_EN_2025_A

Trinasolar

Vertex N

N-type i-TOPCon Ultra BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

ELECTRICAL DATA (STC & NOCT & BNPI)

Testing Condition	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI
Peak Power Watts-PMAX(Wp)*	620	473	687	625	477	692	630	481	698	635	487	704	640	489	709	645	492	715
Power Selection (W)**	0 ~ +5																	
Maximum Power Voltage-VMPP (V)	40.24	37.90	40.24	40.46	38.10	40.46	40.68	38.30	40.68	40.84	38.60	40.84	41.06	38.70	41.06	41.22	38.80	41.22
Maximum Power Current-IMPP (A)	15.41	12.47	17.07	15.45	12.52	17.12	15.49	12.57	17.16	15.55	12.60	17.23	15.60	12.67	17.28	15.65	12.70	17.34
Open Circuit Voltage-VOC (V)	48.50	46.10	48.50	48.70	46.30	48.70	48.90	46.50	48.90	49.10	46.60	49.10	49.30	46.80	49.30	49.52	47.00	49.52
Short Circuit Current-ISC (A)	16.26	13.10	18.02	16.32	13.15	18.08	16.38	13.20	18.15	16.44	13.25	18.22	16.51	13.30	18.29	16.55	13.33	18.34
Module Efficiency ηm (%)	23.0			23.1			23.3			23.5			23.7			23.9		

STC: Irradiance 1000W/m2, Cell Temperature 25°C, Air Mass AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s. BNPI: Irradiance: front 1000W/m², rear 135W/m², Temperature 25°C, Air Mass AM1.5
*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%	5%	10%
Peak Power Watts-PMAX(Wp)	651	682	656	688	662	693	667	699	672	704	677	710
Maximum Power Voltage-VMPP (V)	40.24	40.24	40.46	40.46	40.68	40.68	40.84	40.84	41.06	41.06	41.22	41.22
Maximum Power Current-IMPP (A)	16.18	16.95	16.22	17.00	16.26	17.04	16.33	17.11	16.38	17.16	16.43	17.22
Open Circuit Voltage-VOC (V)	48.50	48.50	48.70	48.70	48.90	48.90	49.10	49.10	49.30	49.30	49.52	49.52
Short Circuit Current-ISC (A)	17.07	17.89	17.14	17.95	17.20	18.02	17.26	18.08	17.34	18.16	17.38	18.21

Power Bifaciality:80±5%.

TEMPERATURE RATINGS

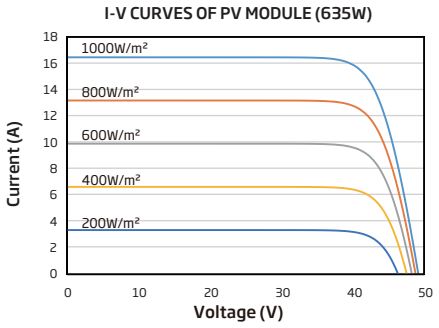
NOCT (Nominal Operating Cell Temperature)	43℃ (±2℃)
Temperature Coefficient of PMAX	- 0.29% /℃
Temperature Coefficient of VOC	- 0.24% /℃
Temperature Coefficient of ISC	0.04% /℃

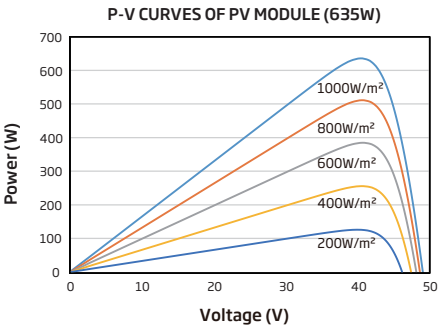
Due to different testing methods, the actual performances might differ from the declared specifications.

APPLICATION CONDITIONS

Operating Temperature	-40~+70℃
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	35A

CURVES OF PV MODULE

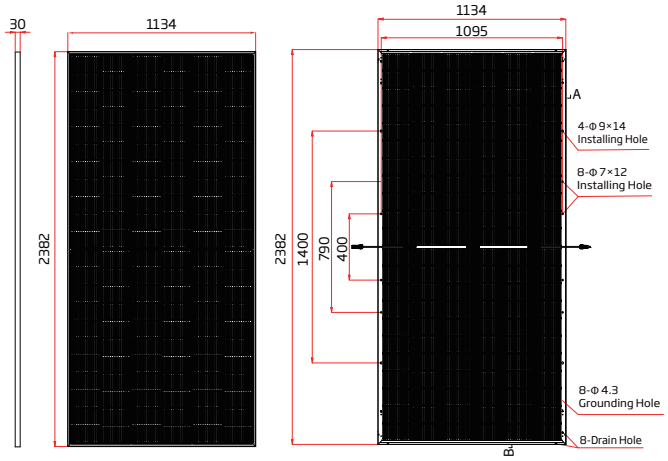




MECHANICAL DATA

Solar Cells	N-type i-TOPCon Monocrystalline
No. of cells	132 cells
Module Dimensions	2382×1134×30 mm (93.78×44.65×1.18 inches)
Weight	39.7 kg (87.5 lb)
Front Glass	2.5mm (0.10inches), AR Coating Heat Strengthened Glass
Back Glass	2.5mm (0.10inches), Heat Strengthened Glass
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²) Portrait: 200/320 mm(7.87/12.60 inches) Length can be customized
Connector	TS4 Plus / TS4 / MC4 EVO2*
Packaging	Modules per box: 36 pieces Modules per 40' container: 612 pieces

*The connector names listed are general names; specific types are subject to the certification documents.



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