

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*



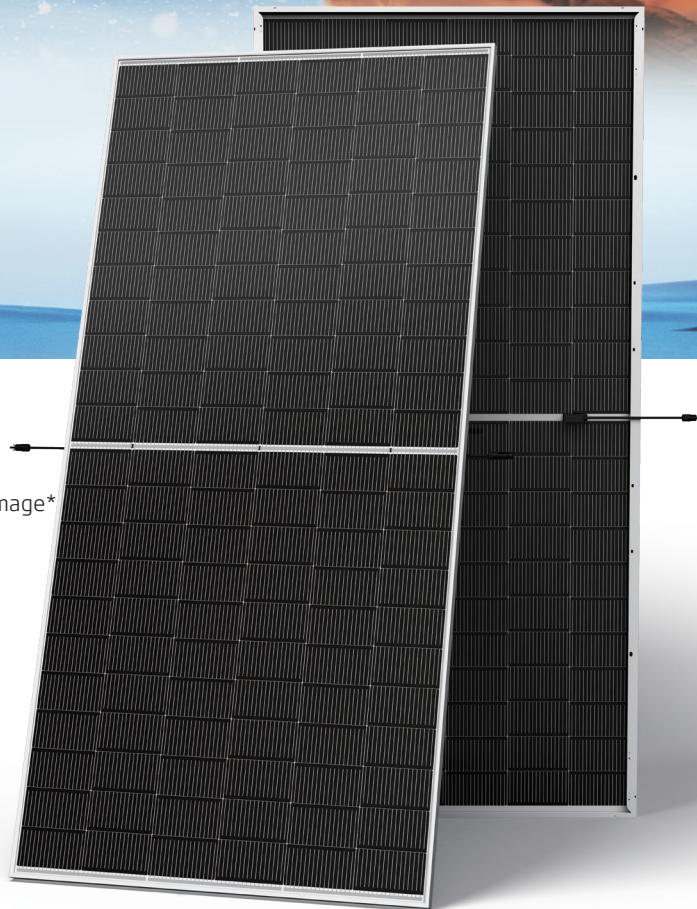
Mechanical load with fixed mounting installation: +7000/-5000Pa
Mechanical load with tracking installation: +3600/-3000Pa



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

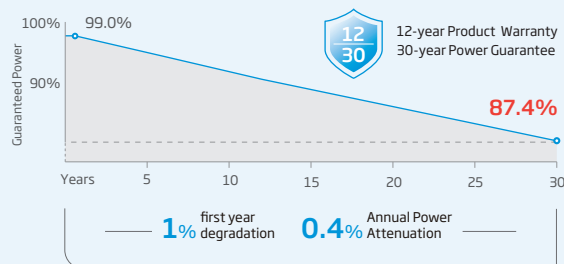
- Pass salt, ammonia, dust, PID, LID, LeTID certificate



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



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- $P_{MAX}(W_p)^*$	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- V_{MPP} (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- I_{MPP} (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- V_{oc} (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- I_{sc} (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 η_m (%)	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%	5%	10%
Peak Power Watts- $P_{MAX}(W_p)$	651	682	656	688	662	693	667	699	672	704	677	710	682	715
Maximum Power Voltage- V_{MPP} (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	41.22	41.22
Maximum Power Current- I_{MPP} (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	16.43	17.22
Open Circuit Voltage- V_{oc} (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	49.52	49.52
Short Circuit Current- I_{sc} (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	17.38	18.21

Power Bifaciality: 80±5%.

TEMPERATURE RATINGS

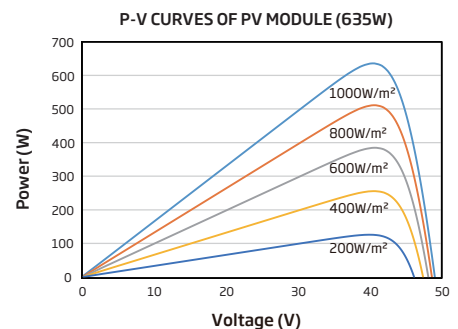
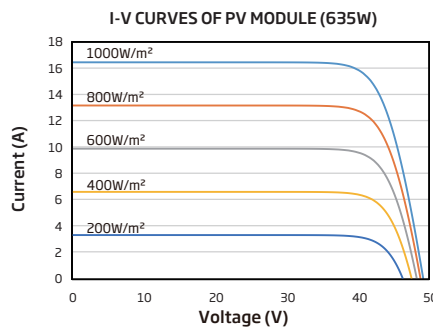
NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P_{MAX}	-0.29% /°C
Temperature Coefficient of V_{oc}	-0.24% /°C
Temperature Coefficient of I_{sc}	0.04% /°C

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

APPLICATION CONDITIONS

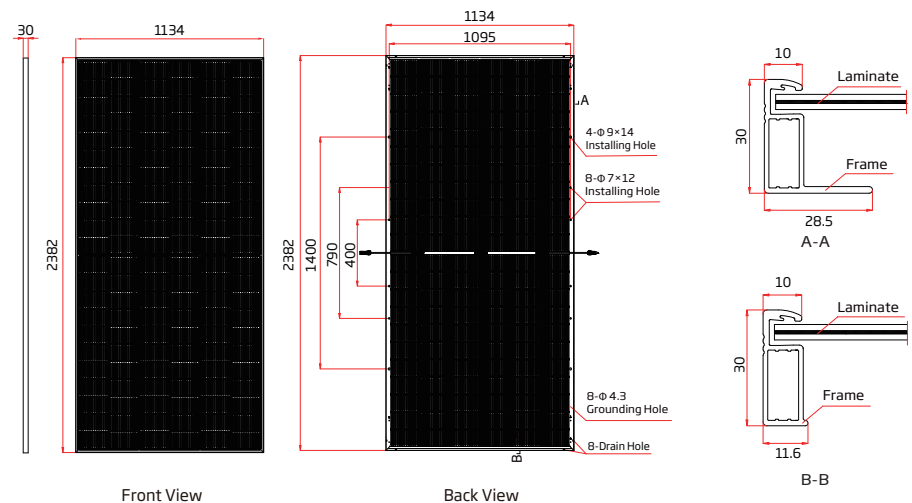
Operating Temperature	-40~+70°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	35A

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 4.0mm ² (0.006 inches ²) Portrait: 200/320 mm (7.87/12.60 inches) Length can be customized
Connector	TS4 Plus / TS4
Packaging	Modules per box: 36 pieces Modules per 40' container: 612 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_APAC_EN_2025_A