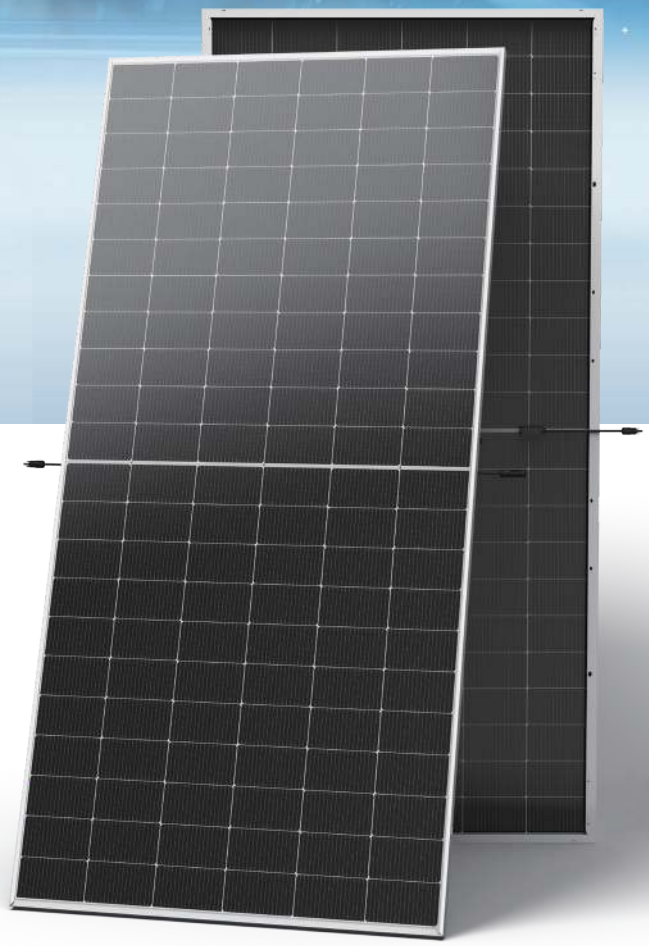
Vertex N

— i-TOPCon Ultra —

TSM-xxxNEG19RC.70 **625-645W**



Key Features

- Patented short-edge frame design reduces energy loss from soiling
- Low-tilt installations minimize dust and snow accumulation, boosting average yield by over 2%
- Lowers cleaning frequency and O&M costs
- Higher bifaciality, enhancing total PV system energy output

High power up to 645W

- Up to 23.9% module efficiency, on 210 innovation platform
- Patented i-TOPCon technology with continuous efficiency upgrade, including contact resistance reduction, rear reflection enhancement and edge quality repairment

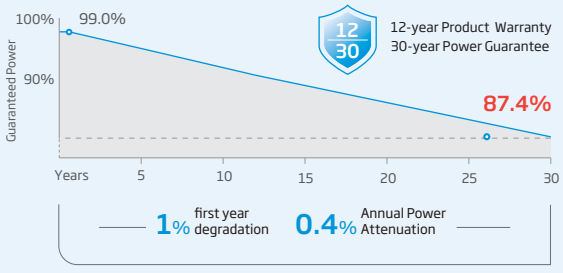
High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology and high-density packaging
- Reduced risks of hot-spot with half-cut technology
- Fire Class Rating C, Safety Class II
- Mechanical performance up to 5400 Pa static test load, Front and 2400 Pa static test load, Back

High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Higher bifaciality, with up to 10%~20% additional power gain from back side depending on albedo
- Reliable dual-glass structure with 30-year power guarantee

Performance Warranty



* Please refer to product warranty for details
(Power degradation values above apply to frontside, refer to product warranty for power degradation for backside and other details

Comprehensive Products and System Certificates

IEC61215/IEC61730

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.
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Version number: TSM_AUS_EN_2025_A
Country of Origin: China

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Vertex N

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

Testing Condition	STC	NOCT	BNPI	aBSI	STC	NOCT	BNPI	aBSI	STC	NOCT	BNPI	aBSI	STC	NOCT	BNPI	aBSI	STC	NOCT	BNPI	aBSI
Peak Power Watts-PMAX(Wp)*	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)	40.46	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)	15.45	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)	48.70	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)	16.32	13.15	18.08	20.24	16.38	13.20	18.15	20.31	16.44	13.25	18.22	20.39	16.51	13.30	18.29	20.47	16.55	13.33	18.34	20.52
Module Efficiency η m (%)	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,Temperature25°C, Air Mass AM1.5
*Measuring tolerance: Pmax±3%, Voc±3% and Isc ±5%

Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Peak Power Watts-PMAX(Wp)	656	688	662	693	667	699	672	704	677	710
Maximum Power Voltage-VMPP (V)	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)	16.22	17.00	16.26	17.04	16.33	17.11	16.38	17.16	16.43	17.22
Open Circuit Voltage-VOC (V)	48.70	48.70	48.90	48.90	49.10	49.10	49.30	49.30	49.52	49.52
Short Circuit Current-ISC (A)	17.14	17.95	17.20	18.02	17.26	18.08	17.34	18.16	17.38	18.21

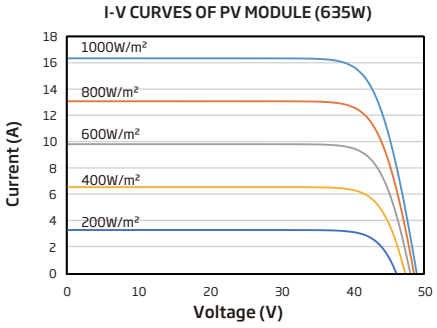
φPmax： 80%±5%； φVoc:100%±3%; φIsc:80%±5%

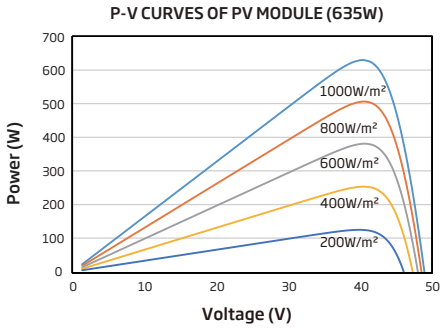
NOCT(Nominal Operating Cell Temperature)	43℃ (±2℃)
Temperature Coefficient of PMAX	- 0.29% /℃
Temperature Coefficient of VOC	- 0.24% /℃
Temperature Coefficient of ISC	0.04% /℃

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

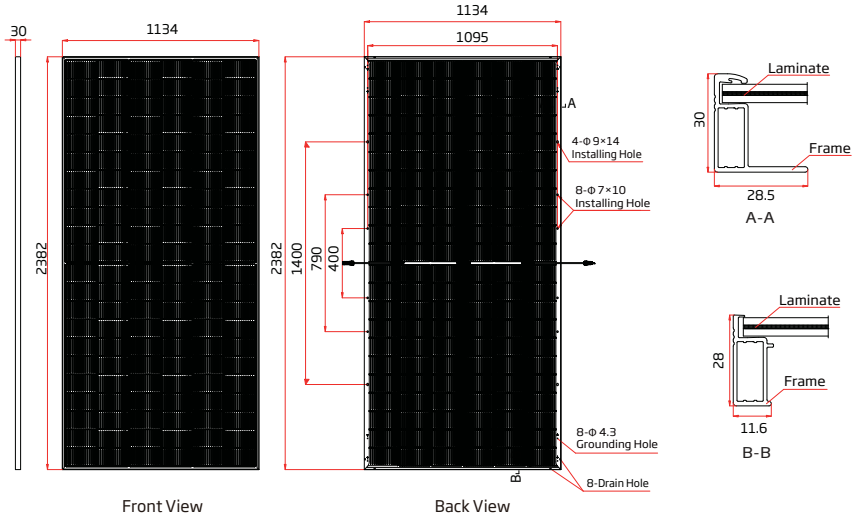
Operating Temperature*	-40~+70 ℃
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	35A

*PV module 98th percentile operating temperature : 70℃





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	33.0 kg (72.8 lb)
Front Glass	2.0 mm (0.08 inches), AR Coating Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), 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	Stäubli Electrical Connectors AG PV-KST4-EVO2/xy_UR; PV-KBT4-EVO2/xy_UR PV-KST4-EVO2A/xy; PV-KBT4-EVO2A/xy
Packaging	Modules per box: 36 pieces Modules per 40' container: 720 pieces



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