



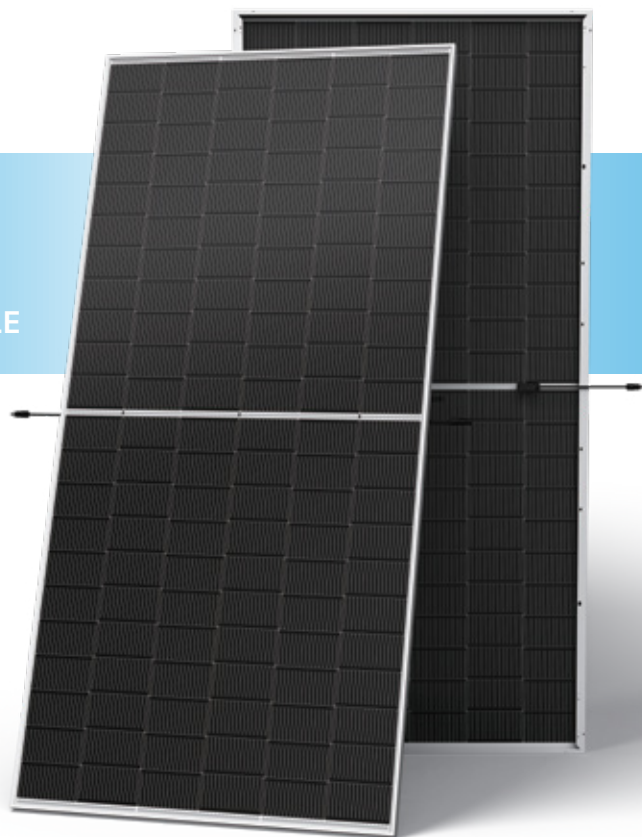
N-type i-TOPCon

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

TSM-XXXNED19RC.20 605-630W

630_W / MAXIMUM
POWER OUTPUT

23.3% / MAXIMUM
EFFICIENCY



High customer value

- Best partner of 1P tracker, with highest utilization of tracker length
- Low voltage design with higher string power, effectively reducing BOS (Balance of System) and LCOE (Levelized Cost of Energy) by 1%~5%
- Excellent compatibility with existing mainstream system components



High power up to 630W

- Up to 23.3% 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

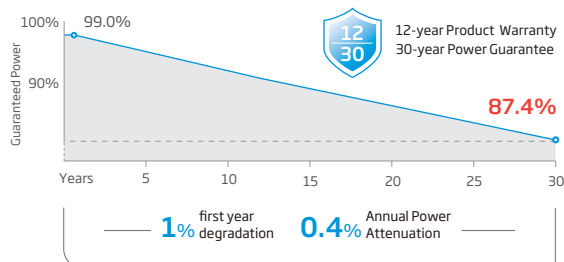
- Fire Rating Class A, Safety Class II
- Minimized micro-cracks with innovative non-destructive cutting technology
- Mechanical performance up to 6000 Pa positive load and 4000 Pa negative load
- Reduced risks of hot-spot with half-cut technology
- Hail resistance 55mm



High energy yield

- Lower temperature coefficient (-0.29%/°C)
- 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_PA4

Country of Origin: China



ELECTRICAL DATA STC & NOCT & BNPI TSM-XXXNED19RC.20(XXX=605-630)

Testing Condition	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI
Peak Power Watts- $P_{MAX}(W_p)^*$	605	462	670	610	465	676	615	469	681	620	473	687	625	477	692	630	481	698
Power Selection (W)	0 ~ +5																	
Maximum Power Voltage- V_{MPP} (V)	39.57	37.40	39.57	39.79	37.60	39.79	39.97	37.80	39.97	40.24	37.90	40.24	40.46	38.10	40.46	40.68	38.30	40.68
Maximum Power Current- I_{MPP} (A)	15.29	12.33	16.94	15.33	12.38	17.00	15.39	12.43	17.05	15.41	12.47	17.07	15.45	12.52	17.12	15.49	12.57	17.16
Open Circuit Voltage- V_{oc} (V)	47.89	45.50	47.89	48.09	45.70	48.09	48.29	45.90	48.29	48.50	46.10	48.50	48.70	46.30	48.70	48.90	46.50	48.90
Short Circuit Current- I_{sc} (A)	16.08	12.96	17.82	16.14	13.00	17.88	16.20	13.05	17.95	16.26	13.10	18.02	16.32	13.15	18.08	16.38	13.20	18.15
Module Efficiency η_m (%)	22.4			22.6			22.8			23.0			23.1			23.3		

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: $P_{max} \pm 3\%$, $V_{oc} \pm 3\%$ and $I_{sc} \pm 5\%$

Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Peak Power Watts- $P_{MAX}(W_p)$	630	660	635	666	641	671	646	677	651	682	656	688	662	693	667	698
Maximum Power Voltage- V_{MPP} (V)	39.43	39.43	39.57	39.57	39.79	39.79	39.97	39.97	40.24	40.24	40.46	40.46	40.68	40.68	40.80	40.80
Maximum Power Current- I_{MPP} (A)	15.98	16.74	16.05	16.82	16.10	16.86	16.16	16.93	16.18	16.95	16.22	17.00	16.26	17.04	16.30	17.08
Open Circuit Voltage- V_{oc} (V)	47.69	47.69	47.89	47.89	48.09	48.09	48.29	48.29	48.50	48.50	48.70	48.70	48.90	48.90	49.10	49.10
Short Circuit Current- I_{sc} (A)	16.82	17.62	16.88	17.69	16.95	17.75	17.01	17.82	17.07	17.89	17.14	17.95	17.20	18.02	17.26	18.08

ϕP_{max} : 80% $\pm$ 5% ; ϕV_{oc} :100% $\pm$ 3%; ϕI_{sc} :80% $\pm$ 5%

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature) 43°C ($\pm 2^\circ\text{C}$)

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.

MAXIMUM RATINGS

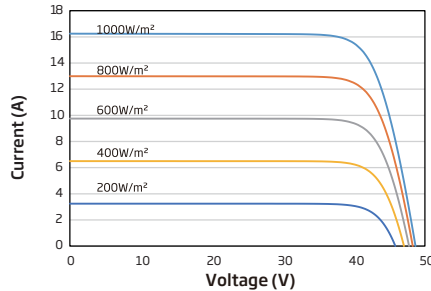
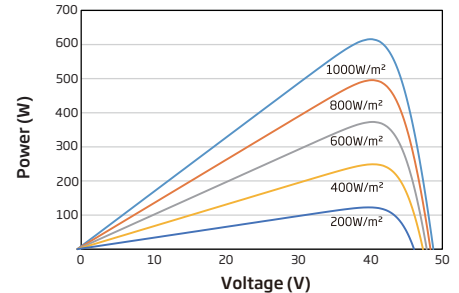
Operational Temperature -40~+70°C

Maximum System Voltage 1500V DC (IEC)

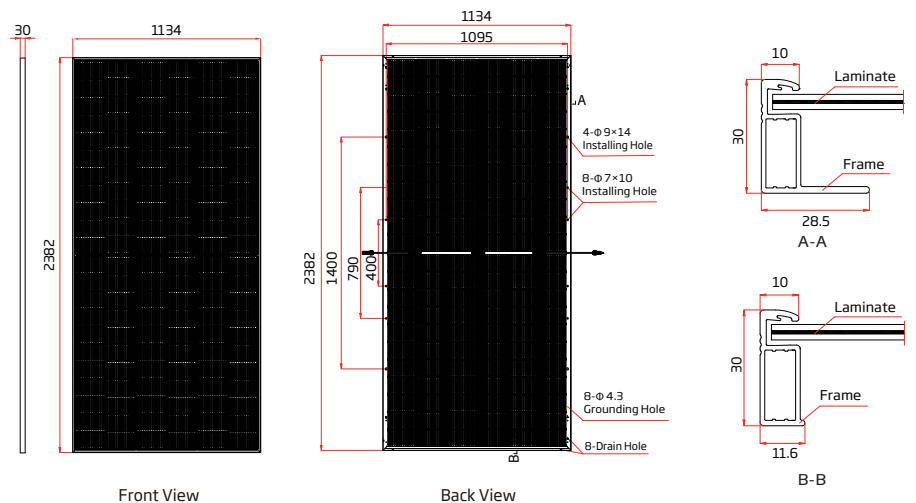
1500V DC (UL)

Max Series Fuse Rating 35A

CURVES OF PV MODULE (Cell Temperature (25 $\pm$ 2)°C)

I-V CURVES OF PV MODULE (615W)

P-V CURVES OF PV MODULE (615W)

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	40.0 kg (88.2 lbs)
Front Glass	AR Coating Heat Strengthened Glass
Back Glass	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 (7.78/12.60 inches) Length can be customized
Connector	Stäubli Electrical Connectors AG PV-KST4-EV02/xy_UR; PV-KBT4-EV02/xy_UR PV-KST4-EV02A/xy; PV-KBT4-EV02A/xy
Packaging	Modules per box: 36 pieces Modules per 40' container: 612 pieces



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