



# N-type i-TOPCon

BACKSHEET MONOCRYSTALLINE MODULE

TSM-NE19R 600-630W

**630<sub>W</sub>** / MAXIMUM POWER OUTPUT

**23.3%** / MAXIMUM EFFICIENCY



## High customer value

- Standardized module size with flagship module power, 30W higher compared with conventional technology
- Low Voltage design with higher string power, effectively reducing BOS (Balance of System) and LCOE (Levelized Cost of Energy) by 1%~5%
- Suitable for all scenario, especially C&I, residential, and ground applications
- Higher container space utilization effectively reduces the freight cost
- 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 improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment



## High reliability

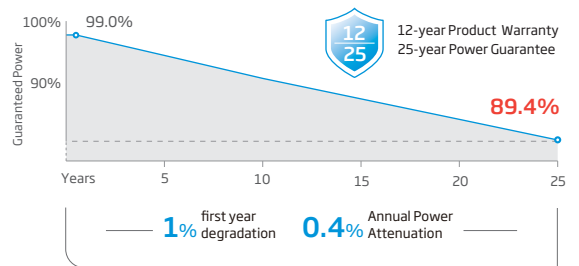
- Minimized micro-cracks with innovative non-destructive cutting technology and high-density packaging
- Reduced risks of hot-spot with half-cut technology
- Certified high resistance against salt, ammonia, sand, PID, LID, LeTID
- Sustainable in harsh environments and extreme weather conditions



## High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Lower temperature coefficient (-0.29%/°C)

## Performance Warranty



\* Please refer to product warranty for details

## Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716/UL61730

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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**ELECTRICAL DATA (STC)**

Peak Power Watts- $P_{MAX}(Wp)^*$	600	605	610	615	620	625	630
Power Tolerance- $P_{MAX}(W)$	0 ~ +5						
Maximum Power Voltage- $V_{MPP}(V)$	40.3	40.5	40.8	41.1	41.4	41.6	42.0
Maximum Power Current- $I_{MPP}(A)$	14.91	14.94	14.96	14.98	14.99	15.00	15.01
Open Circuit Voltage- $V_{oc}(V)$	48.4	48.7	49.0	49.3	49.6	49.8	50.3
Short Circuit Current- $I_{sc}(A)$	15.80	15.83	15.86	15.89	15.91	15.93	15.94
Module Efficiency $\eta_m(\%)$	22.2	22.4	22.6	22.8	23.0	23.1	23.3

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5. \*Measuring tolerance: ±3%.

**ELECTRICAL DATA (NOCT)**

Peak Power Watts- $P_{MAX}(Wp)$	459	462	466	470	474	477	482
Maximum Power Voltage- $V_{MPP}(V)$	37.9	38.1	38.3	38.6	38.8	39.0	39.4
Maximum Power Current- $I_{MPP}(A)$	12.11	12.13	12.16	12.19	12.20	12.21	12.23
Open Circuit Voltage- $V_{oc}(V)$	46.0	46.2	46.5	46.8	47.1	47.3	47.6
Short Circuit Current- $I_{sc}(A)$	12.73	12.75	12.78	12.80	12.82	12.84	12.85

NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s.

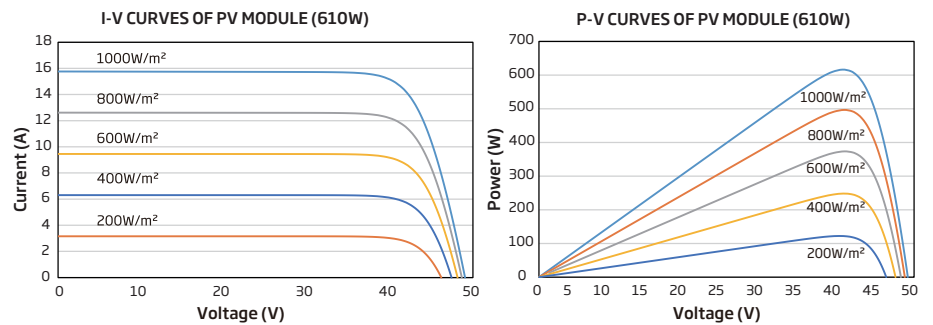
**TEMPERATURE RATINGS**

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

**MAXIMUM RATINGS**

Operational Temperature	-40~+85°C
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	132 cells
Module Dimensions	2382×1134×30 mm (93.78×44.65×1.18 inches)
Weight	27.9 kg (61.51 lb)
Front Glass	3.2mm (0.13inches), High Transmission, Tempered Glass
Encapsulant material	POE/EVA
Backsheet	White
Frame	30mm (1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ) Portrait: 350/280 mm (13.78/11.02 inches) Length can be customized
Connector	TS4 Plus / TS4
Packaging	Modules per box: 36 pieces Modules per 40' container: 720 pieces

