

# Vertex N

BACKSHEET MONOCRYSTALLINE MODULE

PRODUCT: TSM-NE19R

PRODUCT RANGE: 590-620W

**620W**

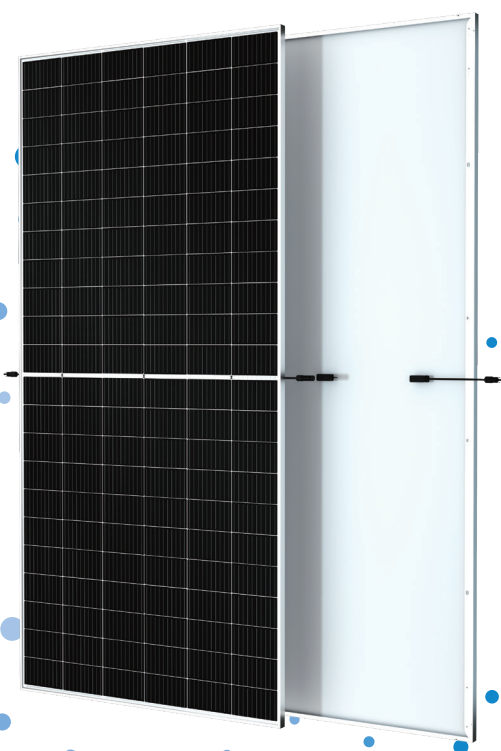
MAXIMUM POWER OUTPUT

**0~+5W**

POSITIVE POWER TOLERANCE

**23.0%**

MAXIMUM EFFICIENCY



### High customer value

- Lower LCOE (levelized cost of energy), reduced BOS (balance of system) cost, shorter payback time
- Lowest guaranteed first year and annual degradation
- Designed for compatibility with existing mainstream system components
- Higher return on Investment



### High power up to 620W

- Up to 23.0% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



### High reliability

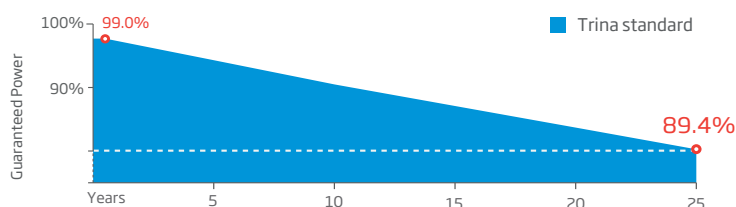
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



### High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.29%) and operating temperature

### Trina Solar's Backsheet Performance Warranty



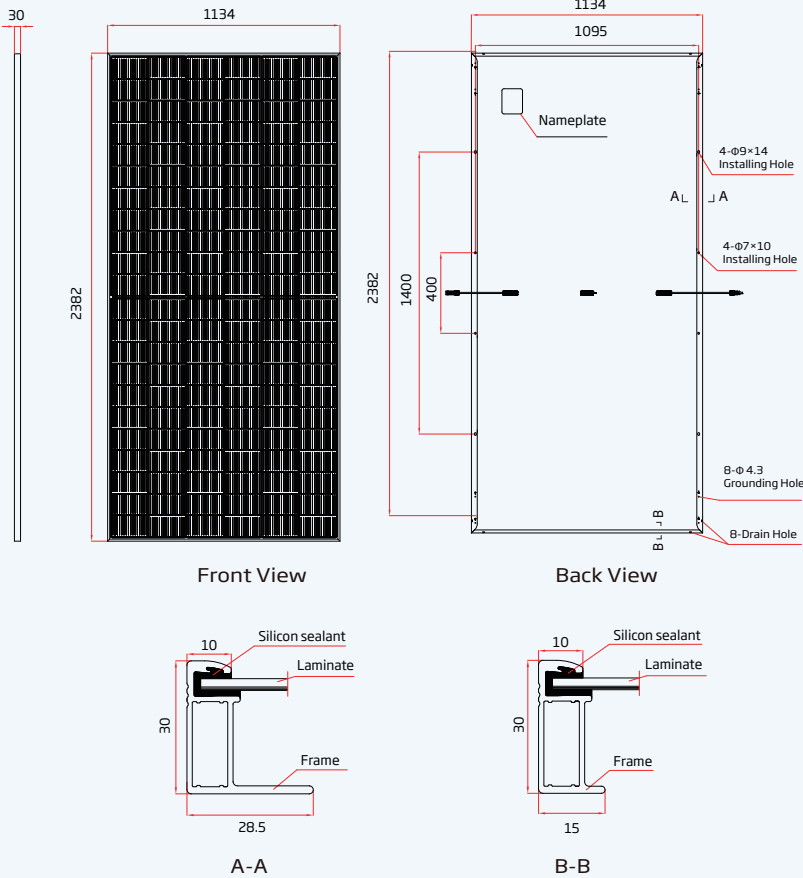
### Comprehensive Products and System Certificates



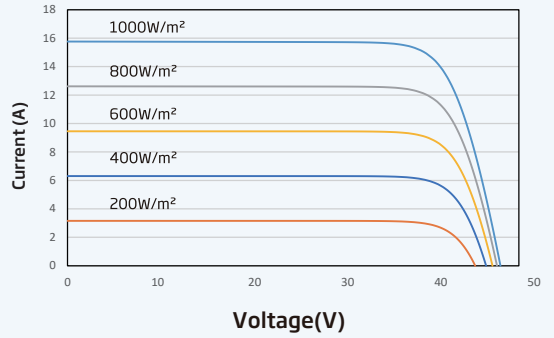
IEC61215/IEC61730/IEC61701/IEC62716/UL61730  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO14064: Greenhouse Gases Emissions Verification  
 ISO45001: Occupational Health and Safety Management System



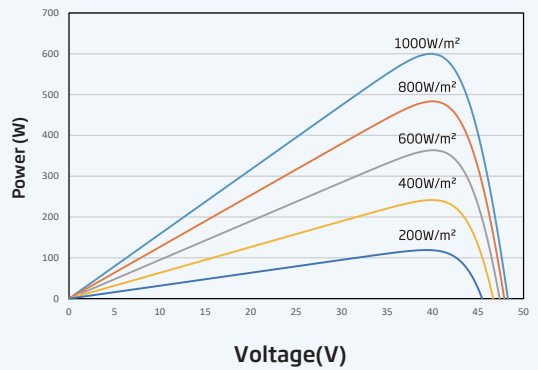
**DIMENSIONS OF PV MODULE(mm)**



**I-V CURVES OF PV MODULE(600W)**



**P-V CURVES OF PV MODULE(600 W)**



**ELECTRICAL DATA (STC)**

Peak Power Watts-P <sub>MAX</sub> (Wp)*	585	590	595	600	605	610	615	620
Power Tolerance-P <sub>MAX</sub> (W)	0 ~ +5							
Maximum Power Voltage-V <sub>MPP</sub> (V)	39.5	39.7	40.0	40.3	40.5	40.8	41.1	41.4
Maximum Power Current-I <sub>MPP</sub> (A)	14.82	14.86	14.89	14.91	14.94	14.96	14.98	14.99
Open Circuit Voltage-V <sub>OC</sub> (V)	47.5	47.8	48.1	48.4	48.7	49.0	49.3	49.6
Short Circuit Current-I <sub>SC</sub> (A)	15.68	15.72	15.76	15.80	15.83	15.86	15.89	15.91
Module Efficiency η <sub>m</sub> (%)	21.7	21.8	22.0	22.2	22.4	22.6	22.8	23.0

**ELECTRICAL DATA (NOCT)**

Maximum Power-P <sub>MAX</sub> (Wp)	447	450	454	459	462	466	470	474
Maximum Power Voltage-V <sub>MPP</sub> (V)	37.2	37.4	37.6	37.9	38.1	38.3	38.6	38.8
Maximum Power Current-I <sub>MPP</sub> (A)	12.02	12.05	12.07	12.11	12.13	12.16	12.19	12.20
Open Circuit Voltage-V <sub>OC</sub> (V)	45.1	45.4	45.7	46.0	46.2	46.5	46.8	47.1
Short Circuit Current-I <sub>SC</sub> (A)	12.64	12.67	12.69	12.73	12.75	12.78	12.80	12.82

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

**MECHANICAL DATA**

Solar Cells	Monocrystalline
No. of cells	132 cells
Module Dimensions	2382×1134×30 mm (93.78×44.65×1.18 inches)
Weight	28.9kg (63.71lb)
Glass	3.2 mm (0.13 inches), 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	MC4 EVO2 / TS4 PLUS / TS4*

\*Please refer to regional datasheet for specified connector.

**TEMPERATURE RATINGS**

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P <sub>MAX</sub>	-0.29%/°C
Temperature Coefficient of V <sub>OC</sub>	-0.24%/°C
Temperature Coefficient of I <sub>SC</sub>	0.04%/°C

**MAXIMUM RATINGS**

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	35A

**WARRANTY**

12 year Product Workmanship Warranty  
25 year Power Warranty  
1% first year degradation  
0.4% Annual Power Attenuation

(Please refer to product warranty for details)

**PACKAGING CONFIGURATION**

Modules per box: 36 pieces  
Modules per 40' container: 720 pieces