

# Vertex N

**N-type i-TOPCon BACKSHEET**  
MONOCRYSTALLINE MODULE

PRODUCT: TSM-NE21

POWER RANGE: 695-720W

## 720W

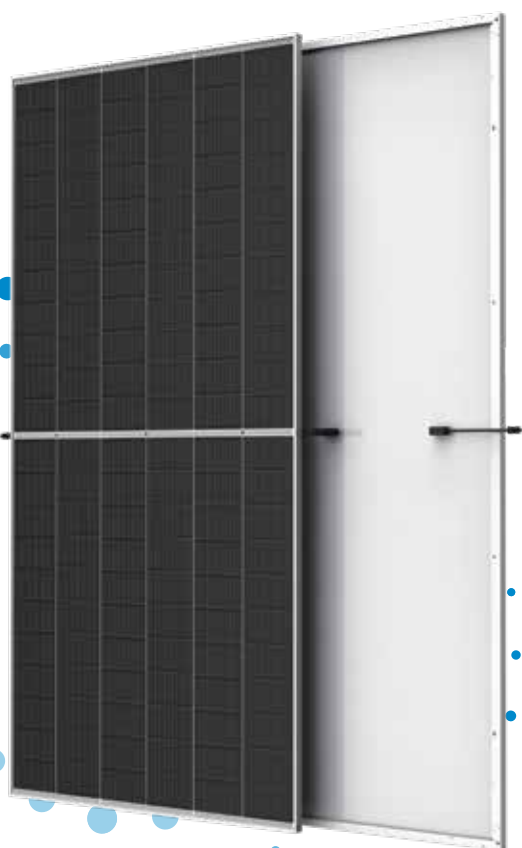
MAXIMUM POWER OUTPUT

## 0~+5W

POSITIVE POWER TOLERANCE

## 23.2%

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



### High power up to 720W

- Up to 23.2% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



### High reliability

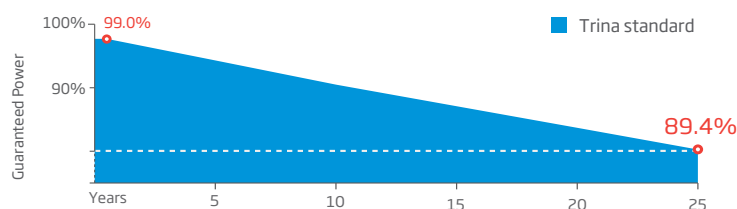
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



### High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- Lower degradation: 1% first year, 0.4% annually thereafter
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.29%/°C) and operating temperature

### Trina Solar's Backsheet Performance Warranty



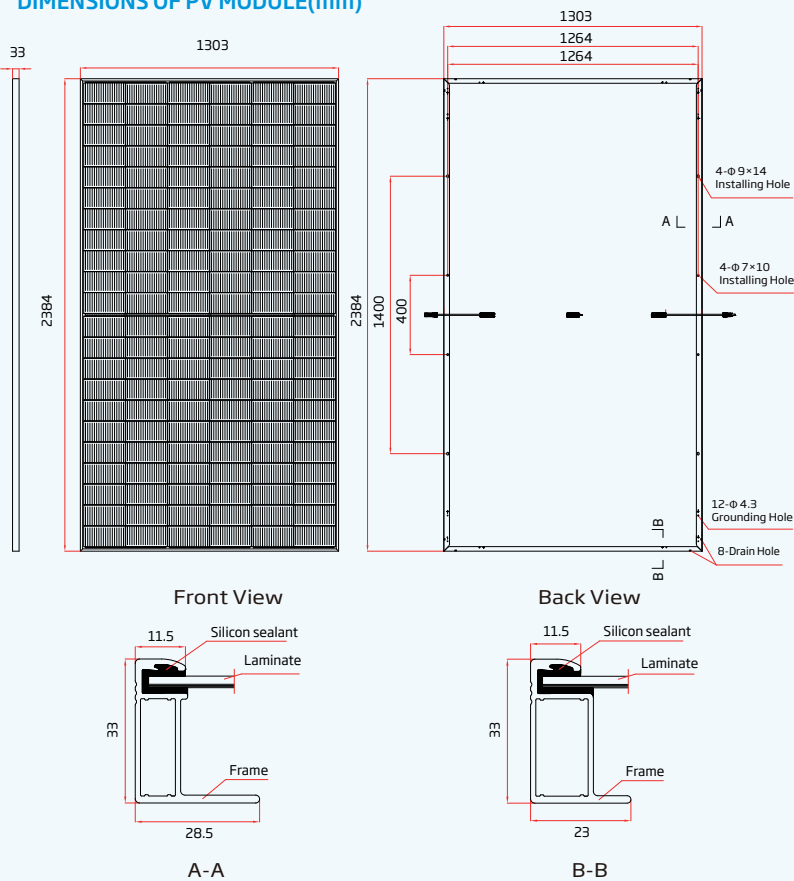
### Comprehensive Products and System Certificates



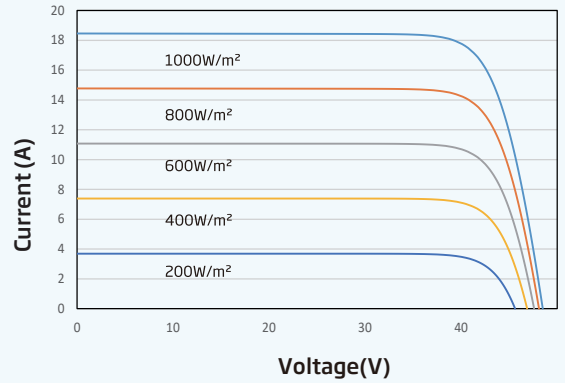
IEC61215/IEC61730/IEC61701/IEC62716  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO14064: Greenhouse Gases Emissions Verification  
 ISO45001: Occupational Health and Safety Management System



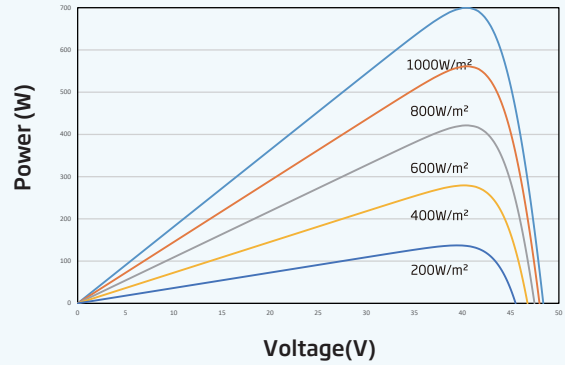
**DIMENSIONS OF PV MODULE(mm)**



**I-V CURVES OF PV MODULE(700W)**



**P-V CURVES OF PV MODULE(700W)**



**ELECTRICAL DATA (STC)**

Peak Power Watts-P <sub>MAX</sub> (Wp)*	695	700	705	710	715	720
Power Tolerance-P <sub>MAX</sub> (W)	0 ~ +5					
Maximum Power Voltage-V <sub>MPP</sub> (V)	40.3	40.5	40.7	40.9	41.1	41.3
Maximum Power Current-I <sub>MPP</sub> (A)	17.25	17.29	17.33	17.36	17.40	17.44
Open Circuit Voltage-V <sub>OC</sub> (V)	48.3	48.6	48.8	49.0	49.2	49.4
Short Circuit Current-I <sub>SC</sub> (A)	18.28	18.32	18.36	18.40	18.44	18.48
Module Efficiency η <sub>m</sub> (%)	22.4	22.5	22.7	22.9	23.0	23.2

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

**ELECTRICAL DATA (NOCT)**

Maximum Power-P <sub>MAX</sub> (Wp)	531	535	539	544	547	551
Maximum Power Voltage-V <sub>MPP</sub> (V)	38.0	38.2	38.3	38.6	38.8	39.0
Maximum Power Current-I <sub>MPP</sub> (A)	13.99	14.02	14.05	14.08	14.11	14.14
Open Circuit Voltage-V <sub>OC</sub> (V)	45.8	46.1	46.3	46.5	46.7	46.9
Short Circuit Current-I <sub>SC</sub> (A)	14.73	14.76	14.80	14.83	14.86	14.89

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

**MECHANICAL DATA**

Solar Cells	N-type i-TOPCon Monocrystalline
No. of cells	132 cells
Module Dimensions	2384×1303×33 mm (93.86×51.30×1.16 inches)
Weight	33.3 kg (73.4 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Backsheet	White
Frame	33mm(1.38 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

**TEMPERATURE RATINGS**

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P <sub>MAX</sub>	-0.29%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Isc	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: 33 pieces
- Modules per 40' container: 594 pieces