

# Vertex N

ANTI-DUST  
BACKSHEET MONOCRYSTALLINE MODULE

PRODUCT: TSM-NE19R.70

PRODUCT RANGE: 590-625W

625W

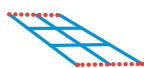
MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

23.1%

MAXIMUM EFFICIENCY



### Anti-Dust Design

- Optimized frame design to reduce dust accumulation on modules
- Reduces the frequency of maintenance cleaning, resulting in increased power generation
- More suitable for installations at low angles



### 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 625W

- Up to 23.1% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



### High reliability

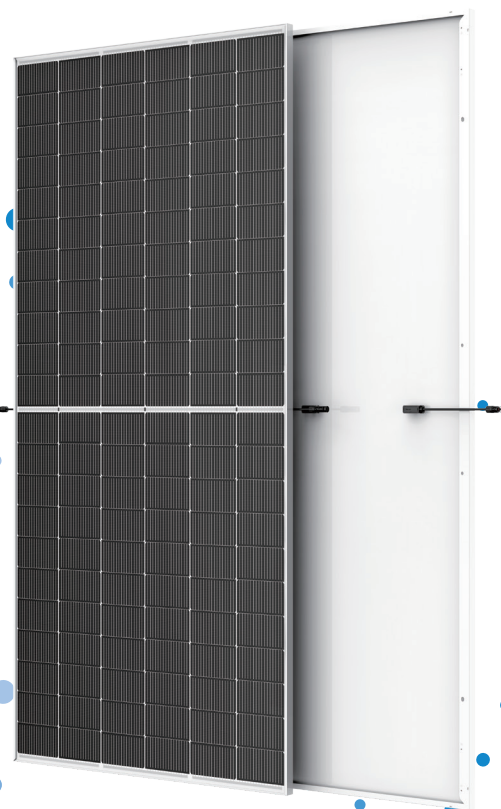
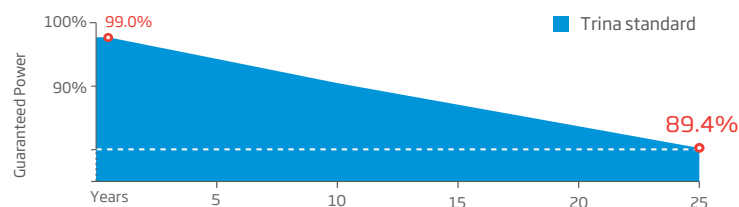
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



### 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

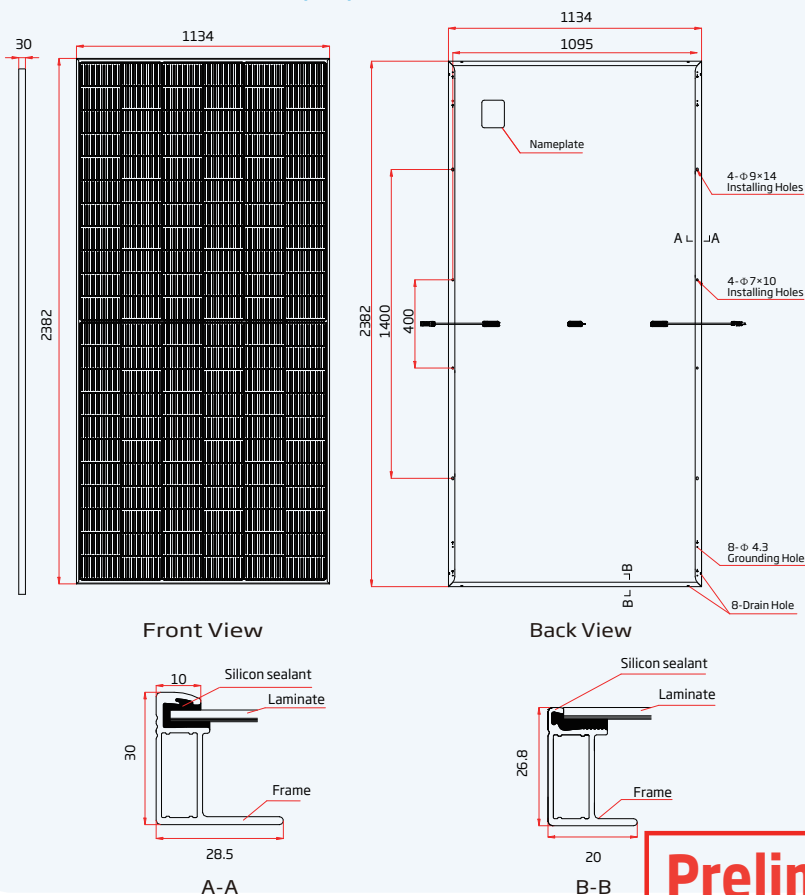


### Comprehensive Products and System Certificates

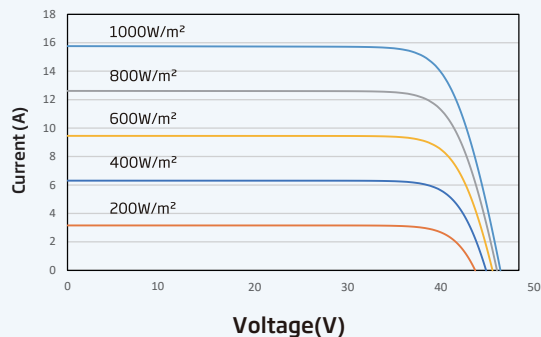


IEC61215/IEC61730/IEC61701/IEC62716  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO14064: Greenhouse Gases Emissions Verification  
 ISO45001: Occupational Health and Safety Management System

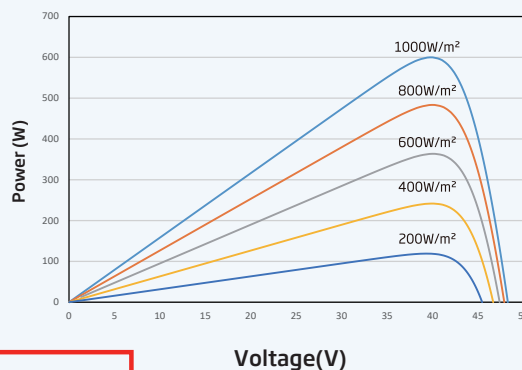
## DIMENSIONS OF PV MODULE(mm)



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



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



Preliminary

### ELECTRICAL DATA (STC)

|                                            |        |       |       |       |       |       |       |
|--------------------------------------------|--------|-------|-------|-------|-------|-------|-------|
| Peak Power Watts-P <sub>MAX</sub> (Wp)*    | 595    | 600   | 605   | 610   | 615   | 620   | 625   |
| Power Tolerance-P <sub>MAX</sub> (W)       | 0 ~ +5 |       |       |       |       |       |       |
| Maximum Power Voltage-V <sub>MPP</sub> (V) | 40.0   | 40.3  | 40.5  | 40.8  | 41.1  | 41.4  | 41.6  |
| Maximum Power Current-I <sub>MPP</sub> (A) | 14.89  | 14.91 | 14.94 | 14.96 | 14.98 | 14.99 | 15.00 |
| Open Circuit Voltage-V <sub>OC</sub> (V)   | 48.1   | 48.4  | 48.7  | 49.0  | 49.3  | 49.6  | 49.8  |
| Short Circuit Current-I <sub>SC</sub> (A)  | 15.76  | 15.80 | 15.83 | 15.86 | 15.89 | 15.91 | 15.93 |
| Module Efficiency $\eta_m$ (%)             | 22.0   | 22.2  | 22.4  | 22.6  | 22.8  | 23.0  | 23.1  |

### ELECTRICAL DATA (NOCT)

|                                            |       |       |       |       |       |       |       |
|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Power-P <sub>MAX</sub> (Wp)        | 456   | 460   | 464   | 468   | 472   | 475   | 478   |
| Maximum Power Voltage-V <sub>MPP</sub> (V) | 37.9  | 38.1  | 38.3  | 38.6  | 38.8  | 39.1  | 39.3  |
| Maximum Power Current-I <sub>MPP</sub> (A) | 12.05 | 12.08 | 12.11 | 12.12 | 12.15 | 12.16 | 12.18 |
| Open Circuit Voltage-V <sub>OC</sub> (V)   | 45.6  | 45.9  | 46.2  | 46.5  | 46.8  | 47.0  | 47.2  |
| Short Circuit Current-I <sub>SC</sub> (A)  | 12.71 | 12.74 | 12.76 | 12.79 | 12.81 | 12.83 | 12.84 |

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               | 27.7kg (61.07lb)                                                                                                                                       |
| Glass                | 3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened 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> ),<br>Portrait: 350/280 mm(13.78/11.02 inches)<br>Length can be customized |
| Connector            | MC4 EV02 / 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) |
| Max Series Fuse Rating  | 30A            |

### 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 |