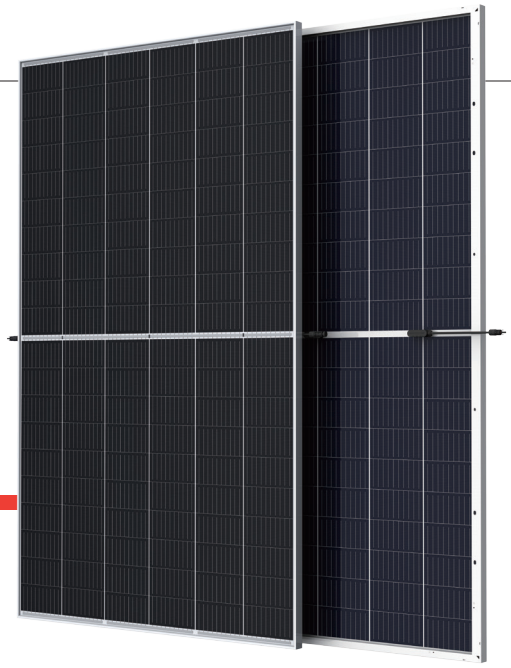
Mono Multi Solutions

**Preliminary**



# THE Vertex

## BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

**600W**
MAXIMUM POWER OUTPUT

**21.2%**
MAXIMUM EFFICIENCY

**0~+5W**
POSITIVE POWER TOLERANCE

| PRODUCTS | POWER RANGE |
|---|---|
| TSM-DEG20C.20 | 580-600W |

Founded in 1997, Trina Solar is the world's leading total solution provider for solar energy. With local presence around the globe, Trina Solar is able to provide exceptional service to each customer in each market and deliver our innovative, reliable products with the backing of Trina as a strong, bankable brand. Trina Solar now distributes its PV products to over 100 countries all over the world. We are committed to building strategic, mutually beneficial collaborations with installers, developers, distributors and other partners in driving smart energy together.

### 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

### 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; extended 30-year warranty
- Designed for compatibility with existing mainstream system components
- Higher return on Investment

### High power up to 600W

- Up to 21.2% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection

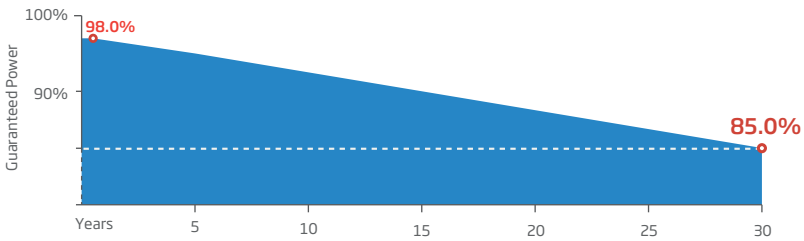
### High reliability

- 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
- Certificated to fire class A

### 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 (-0.34%) and operating temperature
- Up to 25% additional power gain from back side depending on albedo

### Trina Solar's Vertex Bifacial Dual Glass Performance Warranty

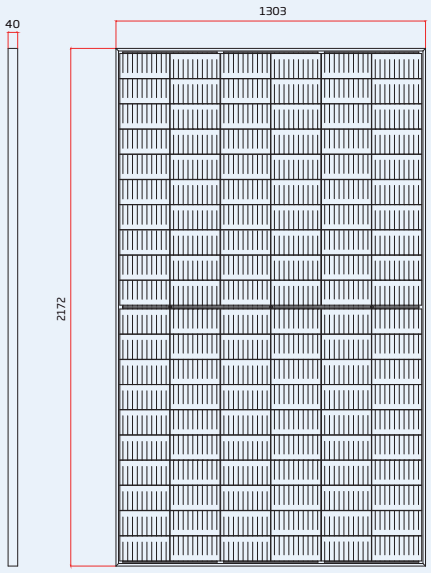



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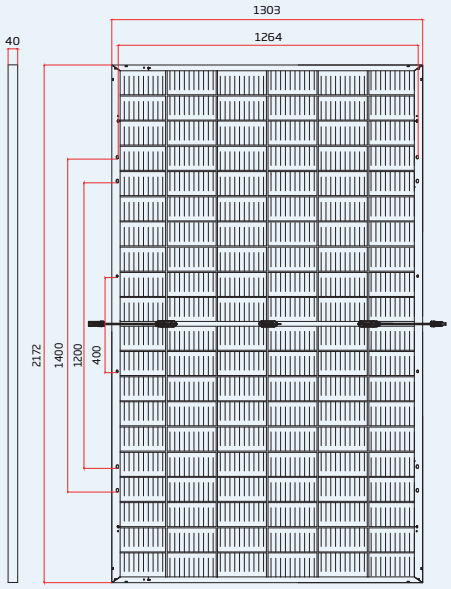
# Vertex

## BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

### DIMENSIONS OF PV MODULE(mm)

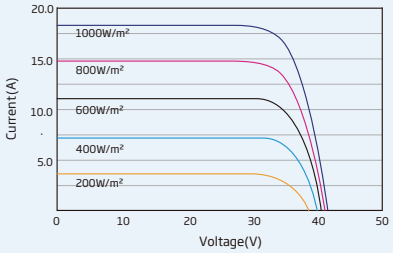



Front View

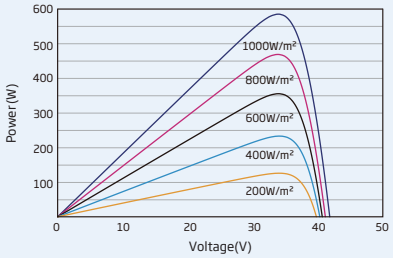



Back View

### I-V CURVES OF PV MODULE(590 W)




### P-V CURVES OF PV MODULE(590W)




### ELECTRICAL DATA (STC)

| | | | | | |
|---|---|---|---|---|---|
| Peak Power Watts-$P_{MAX}$ (Wp)* | 580 | 585 | 590 | 595 | 600 |
| Power Tolerance-$P_{MAX}$ (W) | 0 ~ +5 | | | | |
| Maximum Power Voltage-$V_{MPP}$ (V) | 33.8 | 34.0 | 34.2 | 34.4 | 34.6 |
| Maximum Power Current-$I_{MPP}$ (A) | 17.16 | 17.21 | 17.25 | 17.30 | 17.34 |
| Open Circuit Voltage-$V_{OC}$ (V) | 40.9 | 41.1 | 41.3 | 41.5 | 41.7 |
| Short Circuit Current-$I_{SC}$ (A) | 18.21 | 18.26 | 18.31 | 18.36 | 18.42 |
| Module Efficiency $\eta_m$ (%) | 20.5 | 20.7 | 20.8 | 21.0 | 21.2 |

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5.
*Measuring tolerance: ±3%.

### Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

| | | | | | |
|---|---|---|---|---|---|
| Total Equivalent power -$P_{MAX}$ (Wp) | 621 | 626 | 631 | 637 | 642 |
| Maximum Power Voltage-$V_{MPP}$ (V) | 33.8 | 34.0 | 34.2 | 34.4 | 34.6 |
| Maximum Power Current-$I_{MPP}$ (A) | 18.36 | 18.41 | 18.46 | 18.51 | 18.55 |
| Open Circuit Voltage-$V_{OC}$ (V) | 40.9 | 41.1 | 41.3 | 41.5 | 41.7 |
| Short Circuit Current-$I_{SC}$ (A) | 19.48 | 19.54 | 19.59 | 19.65 | 19.71 |
| Irradiance ratio (rear/front) | 10% | | | | |

Power Bifaciality:70±5%.

### ELECTRICAL DATA (NOCT)

| | | | | | |
|---|---|---|---|---|---|
| Maximum Power-$P_{MAX}$ (Wp) | 439 | 443 | 447 | 451 | 454 |
| Maximum Power Voltage-$V_{MPP}$ (V) | 31.5 | 31.7 | 31.9 | 32.0 | 32.2 |
| Maximum Power Current-$I_{MPP}$ (A) | 13.93 | 13.97 | 14.01 | 14.06 | 14.10 |
| Open Circuit Voltage-$V_{OC}$ (V) | 38.5 | 38.7 | 38.9 | 39.1 | 39.3 |
| Short Circuit Current-$I_{SC}$ (A) | 14.68 | 14.72 | 14.76 | 14.80 | 14.84 |

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

### MECHANICAL DATA

| | |
|---|---|
| Solar Cells | Monocrystalline |
| No. of cells | 120 cells |
| Module Dimensions | 2172×1303×40 mm (85.51×51.30×1.57 inches) |
| Weight | 35.3 kg (77.8 lb) |
| Front Glass | 2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass |
| Encapsulant material | POE/EVA |
| Back Glass | 2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass) |
| Frame | 40mm(1.57 inches) Anodized Aluminium Alloy |
| J-Box | IP 68 rated |
| Cables | Photovoltaic Technology Cable 4.0mm² (0.006 inches²),<br>Portrait: 280/280 mm(11.02/11.02 inches)<br>Landscape: 2050/2050 mm(80.71/80.71 inches) |
| Connector | MC4 EVO2 / TS4* |

*Please refer to regional datasheet for specified connector.

### TEMPERATURE RATINGS

| | |
|---|---|
| NOCT(Nominal Operating Cell Temperature) | 43°C (±2°C) |
| Temperature Coefficient of $P_{MAX}$ | - 0.34%/°C |
| Temperature Coefficient of $V_{OC}$ | - 0.25%/°C |
| Temperature Coefficient of $I_{SC}$ | 0.04%/°C |

### MAXIMUM RATINGS

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

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

### WARRANTY

| |
|---|
| 12 year Product Workmanship Warranty |
| 30 year Power Warranty |
| 2% first year degradation |
| 0.45% Annual Power Attenuation |

(Please refer to product warranty for details)

### PACKAGING CONFIGURATION

| |
|---|
| Modules per 40' container: 448 pieces |

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CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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