**Vertex N**

N-type i-TOPCon bifacial dual glass
Monocrystalline module

- **Power Range:** 585-610W
- **Maximum Power Output:** 610W
- **Positive Power Tolerance:** 0~+5W
- **Maximum Efficiency:** 22.6%

**High customer value**
- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance of System) cost, shorter payback time
- More energy harvest with cutting-edge N-type i-TOPCon technology
- Designed for compatibility with existing mainstream system components
- Higher container space utilization effectively reduces the freight cost

**High power up to 610W**
- Up to 22.6% module efficiency with high density interconnect technology
- SMBB (Super 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
- Lower temperature coefficient (-0.30%)
- Up to 30% additional power gain from back side depending on albedo

**Trina Solar’s Vertex Bifacial Dual Glass Performance Warranty**

- Guaranteed Power:
  - 99.0% after 5 years
  - 97.4% after 30 years

**Comprehensive Products and System Certificates**
- IEC61215/IEC61730/IEC61701/IEC62716/UL61730
- ISO 9001: Quality Management System
- ISO 14001: Environmental Management System
- ISO45001: Occupational Health and Safety Management System
- EU-28 WEEE Compliant
- Recyclable Packaging
DIMENSIONS OF PV MODULE (mm)

I-V CURVES OF PV MODULE (600 W)

P-V CURVES OF PV MODULE (600 W)

MECHANICAL DATA

Solar Cells: N-type Monocrystalline
No. of cells: 132 cells
Module Dimensions: 2382 x 1134 x 30 mm (93.78 x 44.65 x 1.18 inches)
Weight: 33.7 kg (74.3 lb)
Front Glass: 2.0 mm (0.08 inches), High Transparency, Anti-Corrosion, Strong Glass
Encapsulant material: POE/EVA
Back Glass: 2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)

PACKAGING CONFIGURATION

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

WARRANTY

12 year Product Workmanship Warranty
30 year Power Warranty
0.40% Annual Power Attenuation

TEMPERATURE RATINGS

NOCT: 45°C (±2°C)
Temperature Coefficient of PV-IV: -0.30%/°C
Temperature Coefficient of V-OC: -0.24%/°C
Temperature Coefficient of I-SC: 0.04%/°C

MAXIMUM RATINGS

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

ELECTRICAL DATA (STC & NOCT)

<table>
<thead>
<tr>
<th>Testing Condition</th>
<th>STC NOCT</th>
<th>STC NOCT</th>
<th>STC NOCT</th>
<th>STC NOCT</th>
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<tbody>
<tr>
<td>Peak Power Watts</td>
<td>585 W</td>
<td>466 W</td>
<td>450 W</td>
<td>595 W</td>
<td>454 W</td>
<td>600 W</td>
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<td>Power Tolerance</td>
<td>+5 W</td>
<td>-5 W</td>
<td>-5 W</td>
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<td>-5 W</td>
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<tr>
<td>Maximum Voltage</td>
<td>39.5 V</td>
<td>37.1 V</td>
<td>37.3 V</td>
<td>40.0 V</td>
<td>37.6 V</td>
<td>40.3 V</td>
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<tr>
<td>Maximum Current</td>
<td>14.82 A</td>
<td>12.02 A</td>
<td>12.05 A</td>
<td>14.99 A</td>
<td>12.08 A</td>
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<tr>
<td>Open Circuit Voltage</td>
<td>47.5 V</td>
<td>45.0 V</td>
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<td>Short Circuit Current</td>
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<td>Module Efficiency</td>
<td>21.7%</td>
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<td>22.0%</td>
<td>22.2%</td>
<td>22.4%</td>
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Electrical characteristics with different power bin (reference to 5% & 10% backside power gain)

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<tr>
<th>Backside Power Gain</th>
<th>5%</th>
<th>10%</th>
<th>5%</th>
<th>10%</th>
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<th>10%</th>
<th>5%</th>
<th>10%</th>
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<th>10%</th>
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<tbody>
<tr>
<td>Total Equivalent power</td>
<td>614 W</td>
<td>644 W</td>
<td>620 W</td>
<td>649 W</td>
<td>625 W</td>
<td>655 W</td>
<td>630 W</td>
<td>660 W</td>
<td>635 W</td>
<td>666 W</td>
<td>641 W</td>
<td>671 W</td>
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<tr>
<td>Maximum Voltage</td>
<td>39.5 V</td>
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<td>39.7 V</td>
<td>39.7 V</td>
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<td>48.7 V</td>
<td>48.7 V</td>
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