THE

Vertex

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

500W+
MAXIMUM POWER OUTPUT

21.0%
MAXIMUM EFFICIENCY

0/+5W
POSITIVE POWER TOLERANCE

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/UL1703
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; 30-year warranty
- Designed for compatibility with existing mainstream system components
- Higher Return on Investment

High power up to 505W
- Large area cells based on 210mm silicon wafers and 1/3-cut cell technology
- Up to 21.0% 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
- Resistant to salt, ammonia and sand
- Preferred choice in harsh environments such as desert and high humidity areas

High energy yield
- Excellent light absorption throughout the day (IAM) and low light performance, validated by 3rd party certifications
- Lower temperature coefficient (-0.35%) and operating temperature
- Up to 25% additional power gain from back side depending on albedo
- Optimized power output under inter-row shading conditions

Trina Solar’s Duomax Performance Warranty

- Guaranteed Power
- Years:
  - 5
  - 10
  - 15
  - 20
  - 25
  - 30

- Guaranteed Power Percentage:
  - 90.0%
  - 95.0%
  - 85.0%
### Warranty
- 12 year Product Workmanship Warranty
- 30 year Power Warranty
- 2% first year degradation
- 0.45% annual degradation

*Please refer to product warranty for details.

### Packaging Configuration
- Modules per box: 30 pieces
- Modules per 40’ container: 600 pieces

### MECHANICAL DATA
- Portrait: 280/280 mm
- Landscape: 2000/2000 mm

### Electrical Data (STC)

<table>
<thead>
<tr>
<th>Peak Power Watts-Pmax (Wp)*</th>
<th>475</th>
<th>480</th>
<th>485</th>
<th>490</th>
<th>495</th>
<th>500</th>
<th>505</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Output Tolerance-Pmax (W)</td>
<td>0/+5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Power Voltage-Vmp (V)</td>
<td>41.9</td>
<td>42.2</td>
<td>42.5</td>
<td>42.8</td>
<td>43.1</td>
<td>43.4</td>
<td>43.7</td>
</tr>
<tr>
<td>Maximum Power Current-Isc (A)</td>
<td>11.34</td>
<td>11.38</td>
<td>11.42</td>
<td>11.45</td>
<td>11.49</td>
<td>11.53</td>
<td>11.56</td>
</tr>
<tr>
<td>Open Circuit Voltage-Voc (V)</td>
<td>50.5</td>
<td>50.7</td>
<td>50.9</td>
<td>51.1</td>
<td>51.3</td>
<td>51.5</td>
<td>51.7</td>
</tr>
<tr>
<td>Short Circuit Current-Isc (A)</td>
<td>11.93</td>
<td>11.97</td>
<td>12.01</td>
<td>12.05</td>
<td>12.09</td>
<td>12.13</td>
<td>12.17</td>
</tr>
<tr>
<td>Module Efficiency nᵣ (%)</td>
<td>19.7</td>
<td>19.9</td>
<td>20.1</td>
<td>20.3</td>
<td>20.5</td>
<td>20.7</td>
<td>21.0</td>
</tr>
</tbody>
</table>

*Measuring tolerance: ±1%.

### ELECTRICAL DATA (STC)

- Irradiance ratio (rear/front)
- Peak Power Watts-PMAX (Wp)*
- Maximum Power Voltage-VMPP (V)
- Maximum Power Current-IMPP (A)
- Open Circuit Voltage-VOC (V)
- Short Circuit Current-ISC (A)

### Electrical Data (NMOT)

<table>
<thead>
<tr>
<th>Maximum Power-Wmax (Wp)</th>
<th>360</th>
<th>363</th>
<th>367</th>
<th>371</th>
<th>374</th>
<th>378</th>
<th>382</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Power Voltage-Vmp (V)</td>
<td>39.5</td>
<td>39.8</td>
<td>40.0</td>
<td>40.2</td>
<td>40.5</td>
<td>40.8</td>
<td>41.0</td>
</tr>
<tr>
<td>Open Circuit Voltage-Voc (V)</td>
<td>47.7</td>
<td>47.9</td>
<td>48.1</td>
<td>48.3</td>
<td>48.5</td>
<td>48.7</td>
<td>48.8</td>
</tr>
<tr>
<td>Short Circuit Current-Isc (A)</td>
<td>9.61</td>
<td>9.64</td>
<td>9.67</td>
<td>9.70</td>
<td>9.73</td>
<td>9.77</td>
<td>9.80</td>
</tr>
</tbody>
</table>

| Irradiance ratio (rear/front) | 10% |

### TEMPERATURE RATINGS

| NMOT (Nominal Module Operating Temperature) | 41°C (±3K) |
| Temperature Coefficient of PMAX | -0.35%/K |
| Temperature Coefficient of Voc | -0.25%/K |
| Temperature Coefficient of Isc | 0.04%/K |

*Do not connect Fuse in Combiner Box with two or more strings in parallel connection.

### Maximum Ratings

- Operational Temperature: -40 to +85°C
- Maximum System Voltage: 1500V DC (IEC)
- Max Series Fuse Rating: 20A

### ELECTRICAL DATA

- **I-V CURVES OF PV MODULE (490 W)**
- **P-V CURVES OF PV MODULE (490W)**

### Solar Cells
- Monocrystalline
- No. of cells: 150 cells

### Module Dimensions
- Portrait: 280/280 mm
- Landscape: 2000/2000 mm

### Weight
- 30.1 kg

### Front Glass
- 2.0 mm High Transmission, AR Coated Heat Strengthened Glass

### Encapsulant material
- POE/EVA

### Back Glass
- 2.0 mm Heat Strengthened Glass (White Grid Glass)

### Frame
- 35mm Anodized Aluminium Alloy

### Connector
- IP 68 rated

### Cables
- Photovoltaic Technology Cable 4.0mm²
- Portrait: 280/280 mm
- Landscape: 2000/2000 mm

### Connector
- T54

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| Temperature Coefficient of Isc | 0.04%/K |

* Versions: TSM_EN_2020_A

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Trina solar cell module dimensions and specifications.