**N-type i-TOPCon bifacial dual glass**

Monocrystalline module

**PRODUCT:** TSM-NEG19RC.20

**POWER RANGE:** 590-620W

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**Vertex N**

620W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

23.0%

MAXIMUM EFFICIENCY

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**High customer value**

- Lower LCOE, reduced BOS cost, better ROI
- Lowest guaranteed first year and annual degradation
- Optimized compatibility with existing mainstream system components

**High power up to 620W**

- Up to 23.0% module efficiency
- High density interconnection provides improved power density
- MBB technology improves light trapping effect and current collection, while lowering series resistance

**High reliability**

- Minimized micro-cracks with innovative non-destructive cutting technology minimizes micro-cracking
- Ensured PID resistance through improved cell process and module material control
- Resistant to harsh environments
- Mechanical performance up to +5400/-2400 Pa

**High energy yield**

- Excellent IAM 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%/°C) and operating temperature
- Up to 30% additional power gain from back side

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

![Graph showing performance warranty over years]

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**Comprehensive Products and System Certificates**

- IEC61215/IEC61730/IEC61701/IEC62716/UL61730
- ISO 9001: Quality Management System
- ISO 14001: Environmental Management System
- ISO14064: Greenhouse Gases Emissions Verification
- ISO45001: Occupational Health and Safety Management System

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Trina Solar
**DIMENSIONS OF PV MODULE (mm)**

**MECHANICAL DATA**
- Solar Cells: N-type i-TOPCon Monocrystalline
- No. of cells: 132 cells
- Module Dimensions: 2382×1134×30 mm (93.78×44.65×1.18 inches)
- Front Glass: 2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
- Back Glass: 2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
- Encapsulant material: POE/EVA
- Weight: 33.7kg (74.3 lb)
- No. of cells: 132 cells
- Solar Cells: N-type i-TOPCon bifacial dual glass Monocrystalline module

**ELECTRICAL DATA (STC & NOCT)**
- Module Efficiency: 30%
- Peak Power Watts-P MAX (W): 605 W
- Maximum Power Voltage-VMPP (V): 590 V
- Maximum Power Current-IMPP (A): 30.0 A
- Open Circuit Voltage-VOC (V): 641 V
- Short Circuit Current-ISC (A): 16.65 A

**Electrical characteristics with different power bin (reference to 5% & 10% backside power gain)**

<table>
<thead>
<tr>
<th>Power Tolerance-P MAX (%)</th>
<th>0%</th>
<th>5%</th>
<th>10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Power Voltage-Voc (V)</td>
<td>39.7</td>
<td>37.4</td>
<td>40.0</td>
</tr>
<tr>
<td>Maximum Power Current-Isc (A)</td>
<td>15.72</td>
<td>12.67</td>
<td>15.76</td>
</tr>
<tr>
<td>Short Circuit Current-Isc (A)</td>
<td>15.72</td>
<td>12.67</td>
<td>15.76</td>
</tr>
<tr>
<td>Module Efficiency, m (%)</td>
<td>21.8</td>
<td>22.0</td>
<td>22.2</td>
</tr>
</tbody>
</table>

**Temperature Coefficients**
- Temperature Coefficient of V OC: -0.29%/°C
- Temperature Coefficient of I SC: -0.24%/°C

**STC Test Conditions**
- Irradiance at 1000W/m², Cell Temperature 25°C, Air Mass AM1.5G.

**WARRANTY**
- 12 year Product Workmanship Warranty
- 30 year Power Warranty
- 1% first year degradation
- 0.40% Annual Power Attenuation (Please refer to product warranty for details)

**Max Series Fuse Rating**
- 30A

**Max System Voltage**
- 1500V DC (UL)

**Max Temperature Rating**
- 43°C (±2°C)

**MC4 Connector**
- IP68 rated

**Landscape: 1400/1400 mm (55.1/55.1 in) **

**Portrait: 350/280 mm (13.78/11.02 in)**

**IP 68 rated**

**30mm(1.18 inches) Anodized Aluminium Alloy**

**PACKAGING CONFIGURATION**
- Modules per box: 36 pieces
- Modules per 40' container: 540 pieces
- pallets per 40' container: 15 pieces

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Version number: TSM_NA_EN_2024_A

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