**Vertex**

**BACKSHEET MONOCRYSTALLINE MODULE**

**PRODUCT:** TSM-DE20  
**PRODUCT RANGE:** 585-605W

<table>
<thead>
<tr>
<th>MAXIMUM POWER OUTPUT</th>
<th>605W+</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSITIVE POWER TOLERANCE</td>
<td>0~+5W</td>
</tr>
<tr>
<td>MAXIMUM EFFICIENCY</td>
<td>21.4%</td>
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</tbody>
</table>

**Mono Multi Solutions**

**Trina standard**

- Guaranteed Power 98.0%
- Years 5 10 15 20 25
- 84.8%

**Trina Solar’s Backsheet Performance Warranty**

**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 605W**
- Up to 21.4% 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 (-0.34%) and operating temperature

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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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**EU-28 WEEE**

- COMPLIANT
- RECYCLABLE

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**PRODUCT:** TSM-DE20

**PRODUCT RANGE:** 585-605W

- High power up to 605W
- High reliability
- High energy yield
- High customer value
**DIMENSIONS OF PV MODULE (mm)**

**MECHANICAL DATA**

- **Packaging Configuration**: Warranty
- **Warranty**: 12 year Product Workmanship Warranty
- **Power Warranty**: 25 year
- **Annual Power Attenuation**: 0.55%
- **First Year Degradation**: 2%
- **Max Series Fuse Rating**: 30 A

**Temperature Ratings**

- **NOC (Nominal Operating Cell Temperature)**: 40°C ± 2°C
- **Temperature Coefficient of Pmax**: -0.34% /°C
- **Temperature Coefficient of Voc**: -0.25% /°C
- **Temperature Coefficient of Isc**: 0.04% /°C

**Electrical Data (STC)**

- **Peak Power (Wp)**: 585, 590, 595, 600, 605
- **Power Tolerance (W)**: ± 15 W
- **Maximum Power Voltage (Vmp)**: 33.8, 34.0, 34.2, 34.4, 34.6
- **Maximum Power Current (Imp)**: 17.31, 17.35, 17.40, 17.44, 17.49
- **Open Circuit Voltage (Voc)**: 40.9, 41.1, 41.3, 41.5, 41.7
- **Short Circuit Current (Isc)**: 18.37, 18.42, 18.47, 18.52, 18.57
- **Module Efficiency (ηm)**: 20.7, 20.8, 21.0, 21.2, 21.4

**Electrical Data (NOCT)**

- **Maximum Power Voltage (Vmp)**: 443, 447, 451, 454, 458
- **Maximum Power Current (Imp)**: 14.05, 14.09, 14.13, 14.18, 14.22
- **Open Circuit Voltage (Voc)**: 38.5, 38.7, 38.9, 39.1, 39.3
- **Short Circuit Current (Isc)**: 14.81, 14.85, 14.88, 14.92, 14.96

**Electrical Data**

- **Maximum Power Voltage (Vmp)**: 1000 W/m²
- **Maximum Power Current (Imp)**: 800 W/m²
- **Open Circuit Voltage (Voc)**: 600 W/m²
- **Short Circuit Current (Isc)**: 400 W/m²
- **Module Efficiency (η)**: 18.42 Wp

**Packaging Configuration**

- **Modules per box**: 43
- **Modules per 40' container**: 512

**Specifications**

- **Maximum System Voltage**: 1500 V DC (UL)
- **Temperature Coefficient of Pmax**: -0.34% /°C
- **Temperature Coefficient of Voc**: -0.25% /°C
- **Temperature Coefficient of Isc**: 0.04% /°C

**Warranty**

- **12 year Product Workmanship Warranty**
- **25 year Power Warranty**
- **2% first year degradation**
- **0.55% Annual Power Attenuation**

**Electrical Connection**

- **Connector**: MC4 EVO2 / TS4*

**Photovoltaic Technology**

- **Cable**: 4.0 mm² (0.006 inches²), MC4 EVO2 / TS4*

**Encapsulant**

- **Material**: EVA

**Backsheet**

- **Material**: 3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass

**Frame**

- **Material**: 35 mm (1.38 inches) Anodized Aluminum Alloy

**Warranty**

- **20 year Product Workmanship Warranty**
- **25 year Power Warranty**
- **0.55% Annual Power Attenuation**

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*Please refer to regional datasheet for specified connector.

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CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.
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Version number: TSM_EN_2020_PA2
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