THE

**DUOMAX twin**

BIFACIAL DUAL GLASS 144 LAYOUT MODULE

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**144 LAYOUT MONOCRYSTALLINE MODULE**

**395-420W**

POWER OUTPUT RANGE

**20.7%**

MAXIMUM EFFICIENCY

**0~+5W**

POSITIVE POWER TOLERANCE

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**Products**

<table>
<thead>
<tr>
<th>TSM-DEG15MC.20(II)</th>
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**Power Range**

<table>
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<tr>
<th>395-420W</th>
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**High power**

- Up to 420W front power and 20.7% module efficiency with half-cut and MBB (Multi Busbar) technology bringing more BOS savings
- Lower resistance of half-cut and good reflection effect of MBB ensure high power

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**High reliability**

- Ensured PID resistance through cell process and module material control
- Resistant to salt, acid and ammonia
- Proven to be reliable in high temperature and humidity areas
- Minimizes micro-crack and snail trails
- Mechanical performance: Up to 5400 Pa positive load and 2400 Pa negative load

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**High energy generation**

- Up to 25% additional power gain from back side depending on the albedo
- Excellent IAM and low light performance validated by 3rd party with cell process and module material optimization
- Better anti-shading performance and lower operating temperature

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**Easy to install**

- Frame design makes module compatible with all racking and installation methods
- Easy to handle and install as normal framed module during transportation

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**Trina Solar’s DUOMAX Performance Warranty**

From the 2nd year to the 30th year, the average annual power decline will be no more than 0.5%.
**ELECTRICAL DATA (STC)**

<table>
<thead>
<tr>
<th>Peak Power Watts-Pmax (Wp)*</th>
<th>395</th>
<th>400</th>
<th>405</th>
<th>410</th>
<th>415</th>
<th>420</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Tolerance-Pmax (W)</td>
<td>0 ~ +5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Power Voltage-Vmp (V)</td>
<td>40.5</td>
<td>40.8</td>
<td>41.1</td>
<td>41.4</td>
<td>41.5</td>
<td>41.6</td>
</tr>
<tr>
<td>Maximum Power Current-Imp (A)</td>
<td>9.76</td>
<td>9.81</td>
<td>9.86</td>
<td>9.91</td>
<td>10.02</td>
<td>10.10</td>
</tr>
<tr>
<td>Open Circuit Voltage-Voc (V)</td>
<td>48.7</td>
<td>48.9</td>
<td>49.1</td>
<td>49.3</td>
<td>49.4</td>
<td>49.5</td>
</tr>
<tr>
<td>Short Circuit Current-Isc (A)</td>
<td>10.29</td>
<td>10.33</td>
<td>10.37</td>
<td>10.41</td>
<td>10.52</td>
<td>10.60</td>
</tr>
<tr>
<td>Module Efficiency η (%)</td>
<td>19.5</td>
<td>19.7</td>
<td>20.0</td>
<td>20.2</td>
<td>20.5</td>
<td>20.7</td>
</tr>
</tbody>
</table>

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

**Electrical characteristics with different rear side power gain (reference to 405 Wp front)**

| Maximum Power-Pmax (Wp) | 425 | 446 | 466 | 486 | 506 |
| Maximum Power Voltage-Vmp (V) | 41.1 | 41.1 | 41.1 | 41.1 | 41.1 |
| Maximum Power Current-Imp (A) | 10.35 | 10.85 | 11.34 | 11.83 | 12.33 |
| Open Circuit Voltage-Voc (V) | 49.2 | 49.5 | 49.8 | 50.1 | 50.4 |
| Short Circuit Current-Isc (A) | 10.89 | 11.41 | 11.93 | 12.44 | 12.96 |
| Pmax gain                | 5%  | 10% | 15% | 20% | 25% |

**MECHANICAL DATA**

- **Solar Cells**: Monocrystalline
- **Cell Orientation**: 144 cells (6 × 24)
- **Module Dimensions**: 2024 × 1002 × 30 mm (79.69 × 39.45 × 1.18 inches)
- **Weight**: 26.0 kg (57.3 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**: 30mm(1.18 inches) Anodized Aluminium Alloy
- **J-Box**: IP 68 rated
- **Cables**: Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: 280/280 mm(11.02/11.02 inches), Landscape: 1900/1900 mm(74.80/74.80 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 Pmax**: -0.34%/°C
- **Temperature Coefficient of Voc**: -0.25%/°C
- **Temperature Coefficient of Isc**: 0.04%/°C

*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**

*(Please refer to product warranty for details)*

**PACKAGE CONFIGURATION**

- **Modules per box**: 33 pieces
- **Modules per 40' container**: 594 pieces

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

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