### Vertex S+ Warranty

**1%**
1st year max. degradation

**0.4%**
Max. annual degradation from year 2 to 30

**25 Years**
Product Workmanship Warranty

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**Small in size, bigger on power**
- Generates up to 425 W, 21.9 % module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping, lower series resistance, improved current collection and enhanced reliability
- Reduces installation cost with higher power bin and efficiency

**Dual-glass Design, High Reliability**
- Excellent fire rating and resistance to harsh environmental conditions
- 5,400 Pa snow load and 4,000 Pa wind load (test loads)

**Maximize Energy Harvest**
- Up to 25 years product warranty and 30 years power warranty
- 1% first-year degradation and 0.4% annual degradation enabled by N-type technology

**Universal solution for residential and C&I rooftops**
- Designed for compatibility with existing mainstream inverters, optimizers and mounting systems
- Perfect size and low weight for easy handling. Optimized transportation cost
- Flexible installation solutions for system deployment

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**Comprehensive Products and System Certificates**
- ISO 9001: Quality Management System
- ISO 14001: Environmental Management System
- ISO14064: Greenhouse Gases Emissions Verification
- ISO45001: Occupational Health and Safety Management System
DIMENSIONS OF PV MODULE (mm)

ELECTRICAL DATA (STC)

<table>
<thead>
<tr>
<th>Module Type</th>
<th>TSM-400</th>
<th>TSM-405</th>
<th>TSM-410</th>
<th>TSM-415</th>
<th>TSM-420</th>
<th>TSM-425</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Power (Wp)</td>
<td>400</td>
<td>405</td>
<td>410</td>
<td>415</td>
<td>420</td>
<td>425</td>
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<tr>
<td>Power Tolerance (Wp)</td>
<td>0/+5</td>
<td>0/+5</td>
<td>0/+5</td>
<td>0/+5</td>
<td>0/+5</td>
<td>0/+5</td>
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<tr>
<td>Maximum Voltage (V)</td>
<td>35.1</td>
<td>35.4</td>
<td>35.7</td>
<td>36.0</td>
<td>36.3</td>
<td>36.6</td>
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<tr>
<td>Maximum Current (A)</td>
<td>11.41</td>
<td>11.44</td>
<td>11.48</td>
<td>11.52</td>
<td>11.57</td>
<td>11.61</td>
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<tr>
<td>Open Circuit Voltage (V)</td>
<td>41.9</td>
<td>42.2</td>
<td>42.4</td>
<td>42.7</td>
<td>43.1</td>
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<tr>
<td>Short Circuit Current (A)</td>
<td>12.16</td>
<td>12.20</td>
<td>12.23</td>
<td>12.27</td>
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<tr>
<td>Module Efficiency (%)</td>
<td>20.6</td>
<td>20.9</td>
<td>21.1</td>
<td>21.4</td>
<td>21.7</td>
<td>21.9</td>
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ELECTRICAL DATA (NOCT)

<table>
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<tr>
<th>Module Type</th>
<th>TSM-400</th>
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<th>TSM-410</th>
<th>TSM-415</th>
<th>TSM-420</th>
<th>TSM-425</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Power (Wp)</td>
<td>305</td>
<td>308</td>
<td>312</td>
<td>316</td>
<td>320</td>
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<td>Maximum Voltage (V)</td>
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<tr>
<td>Open Circuit Voltage (V)</td>
<td>39.7</td>
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<tr>
<td>Short Circuit Current (A)</td>
<td>9.80</td>
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<td>9.86</td>
<td>9.89</td>
<td>9.94</td>
<td>9.97</td>
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</table>

MECHANICAL DATA

- Solar Cells: Monocrystalline
- No. of cells: 120 cells
- Module Dimensions: 1770 x 1096 x 30 mm
- Weight: 21.5 kg
- Front Glass: 1.6 mm, High Transmission, AR Coated Heat Strengthened Glass
- Encapsulant material: EVA/POE
- Back Glass: 1.6 mm, Heat Strengthened Glass
- Frame: 30 mm Anodized Aluminium Alloy, Black
- J-Box: IP 68 rated
- Cables: Photovoltaic Technology Cable 4.0 mm²
- Landscape: 1100/1100 mm
- Portrait: 280/350 mm
- Connector: TS4 / MC4 EVO2*

TSM-400 NEG/2B TSM-405 NEG/2B TSM-410 NEG/2B TSM-415 NEG/2B TSM-420 NEG/2B TSM-425 NEG/2B

TEMPERATURE RATINGS

- NOCT (Nominal Operating Cell Temperature): 43 °C (+2 K)
- Temperature Coefficient of Power: -0.30 %/K
- Temperature Coefficient of Voc: -0.25 %/K
- Temperature Coefficient of Isc: 0.04 %/K

WARRANTY

- 25 year Product Workmanship Warranty
- 30 year Power Warranty
- 1% first year degradation
- 0.4% Annual Power Attenuation

PACKAGING CONFIGURATION

- Modules per box: 36 pieces
- Modules per 40' container: 936 pieces

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