**Maximum Power**
The Tesla module is one of the most powerful residential photovoltaic modules available. Our system requires up to 20 percent fewer modules to achieve the same power as a standard system. The module boasts a high conversion efficiency and a half-cell architecture that improves shade tolerance.

**Beautiful Solar**
Featuring our proprietary Zep Groove design, the all-black module connects easily with Tesla ZS components to keep panels close to your roof and close to each other for a blended aesthetic with simple drop-in and precision quarter-turn connections.

**Reliability**
Tesla modules are subject to automotive-grade engineering scrutiny and quality assurance, far exceeding industry standards. Modules are certified to IEC / UL 61730 - 1, IEC / UL 61730 - 2 and IEC / UL 61215.

**Limited Warranty**
- Materials and Processing: 25 years
- Extra Linear Power Output: 25 years

The maximum Pmax degradation is 2% in the 1st year and 0.54% annually from the 2nd to 25th year.

**Linear Power Warranty**
# Module Specifications

## Electrical Characteristics

<table>
<thead>
<tr>
<th>Power Class</th>
<th>T420S</th>
<th>T425S</th>
<th>T430S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Method</td>
<td>STC</td>
<td>NOCT</td>
<td>STC</td>
</tr>
<tr>
<td>Max Power, P&lt;sub&gt;MAX&lt;/sub&gt; (W)</td>
<td>420</td>
<td>313.7</td>
<td>425</td>
</tr>
<tr>
<td>Open Circuit Voltage, V&lt;sub&gt;OC&lt;/sub&gt; (V)</td>
<td>48.5</td>
<td>45.47</td>
<td>48.65</td>
</tr>
<tr>
<td>Short Circuit Current, I&lt;sub&gt;SC&lt;/sub&gt; (A)</td>
<td>11.16</td>
<td>9.02</td>
<td>11.24</td>
</tr>
<tr>
<td>Max Power Voltage, V&lt;sub&gt;MP&lt;/sub&gt; (V)</td>
<td>40.90</td>
<td>38.08</td>
<td>41.05</td>
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<tr>
<td>Max Power Current, I&lt;sub&gt;MP&lt;/sub&gt; (A)</td>
<td>10.27</td>
<td>8.24</td>
<td>10.36</td>
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<tr>
<td>Module Efficiency (%)</td>
<td>19.3</td>
<td>19.6</td>
<td>19.8</td>
</tr>
<tr>
<td>STC</td>
<td>1000 W/m², 25°C, AM1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOCT</td>
<td>800 W/m², 20°C, AM1.5, wind speed 1 m/s</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Temperature Rating (STC)

- Temperature Coefficient of I<sub>SC</sub> = 0.040% / °C
- Temperature Coefficient of V<sub>OC</sub> = -0.260% / °C
- Temperature Coefficient of P<sub>MAX</sub> = -0.331% / °C

## Mechanical Parameters

- Cell Orientation: 144 (6 x 24)
- Junction Box: IP68, 3 diodes
- Cable: 4 mm² | 12 AWG, 1400 mm | 55.1 in. Length
- Connector: Staubli MC4 or EVO2
- Glass: 3.2 mm ARC Glass
- Frame: Black Anodized Aluminum Alloy
- Weight: 25.3 kg | 55.8 lb
- Dimension: 2094 mm x 1038 mm x 40 mm 82.4 in x 40.9 in x 1.57 in

## Operation Parameters

- Operational Temperature: -40°C ~ +85°C
- Power Output Tolerance: -0/+5 W
- V<sub>OC</sub> & I<sub>SC</sub> Tolerance: +/- 3%
- Max System Voltage: DC 1000 V (IEC/UL)
- Max Series Fuse Rating: 20 A
- NOCT: 45.7 +/- 2°C
- Safety Class: Class II
- Fire Rating: UL Type 1 or 2

## Mechanical Loading

- Front Side Design Load: 3600 Pa | 75 lb/ft²
- Rear Side Design Load: 1600 Pa | 33 lb/ft²
- Hailstone Test: 25 mm Hailstone at 23 m/s

![Module Diagram]