High Performance CIGS Solar Modules

STO-140 / STO-145 / STO-150 Solar Modules

Superior Energy Density
- More kWh/m² than crystalline silicon in most climates
- Excellent warm temperature performance
- Proprietary cell and circuit design minimizes impact of shade and debris
- CEC listed, PTC/STC ratio of 92.9%

Reliable
- Potential Induced Degradation (PID) resistant and free of Light Induced Degradation (LID) effects
- Stion reliability testing extends well beyond industry standard certification testing

Durable
- Dual Glass module with edge seal inhibits moisture ingress
- Back glass replaces moisture-permeable back sheet used in crystalline silicon modules
- Stion modules have passed the most severe salt spray test per IEC 61701 (severity 6)

Versatile
- Dual rated 1000 volt UL and IEC
- Black anodized aluminum frame is compatible with most major BOS components and system designs

Simple & Safe
- Convenient form factor enables easy installation and handling by one installer
- Restriction of Hazardous Substances (RoHS) compliant

Made in the USA
- All of Stion’s modules are designed and manufactured in the United States at an ISO 9001:2008 certified facility

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### Electrical Data*

<table>
<thead>
<tr>
<th>Nominal Power, PMAX (W)</th>
<th>Module Efficiency (%)</th>
<th>Vmpp (V)</th>
<th>Impp (A)</th>
<th>Voc (V)</th>
<th>Isc (A)</th>
<th>Series Fuse Rating (A)</th>
<th>Maximum System Voltage (V-dc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>13.1%</td>
<td>59.8</td>
<td>2.34</td>
<td>78.8</td>
<td>2.65</td>
<td>7</td>
<td>1000 (UL &amp; IEC)</td>
</tr>
<tr>
<td>145</td>
<td>13.5%</td>
<td>61.0</td>
<td>2.38</td>
<td>79.6</td>
<td>2.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>14.0%</td>
<td>62.7</td>
<td>2.39</td>
<td>80.8</td>
<td>2.72</td>
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<td></td>
</tr>
</tbody>
</table>

*Measured at Standard Testing Conditions (STC): 25°C, 1000 W/m², AM 1.5 after factory light soaking. All ratings are ± 10% unless noted otherwise.

### Normal Operating Cell Temperature Conditions

<table>
<thead>
<tr>
<th>Nominal Power, PMAX (W)</th>
<th>106</th>
<th>110</th>
<th>114</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vmpp (V)</td>
<td>55.3</td>
<td>56.4</td>
<td>58.0</td>
</tr>
<tr>
<td>Impp (A)</td>
<td>1.92</td>
<td>1.95</td>
<td>1.96</td>
</tr>
<tr>
<td>Voc (V)</td>
<td>71.5</td>
<td>72.3</td>
<td>73.3</td>
</tr>
<tr>
<td>Isc (A)</td>
<td>2.19</td>
<td>2.22</td>
<td>2.25</td>
</tr>
</tbody>
</table>

Relative efficiency reduction of maximum power from an irradiance of 1,000 W/m² to 200 W/m² at 25°C is approximately 7% with a standard deviation of 3%.

### Mechanical Data

- **Width**: 25.8 in (656mm)
- **Length**: 65.2 in (1656mm)
- **Depth**: 1.4 in (35mm)
- **Weight**: 37.0 lbs (16.8kg)
- **Total Area**: 11.68 ft² (1.09m²)
- **Frame**: Black Anodized Aluminum
- **Cable**: PV Wire, 14 AWG Cable 39 3/8 in (1m)
- **Connectors**: MC-4 type
- **J-Box**: IP 67 rated
- **Cover Type**: 3.2mm high transmission tempered front glass laminated to 2 mm float glass

### Dimensions Inches [mm]

### I-V Curves

### Warranty and Qualifications

- **Limited Power**: 90% at 10 years, 80% at 25 years
- **Workmanship**: 10 years
- **Standard Certification**: IEC 61646, IEC 61703-1&2, ANSI/UL 1703
- **Fire Resistance**: Class C (Class A Flame Spread)
- **Safety**: Class II (IEC 61140)
- **Mechanical / Wind Load**: 2400 Pa (50 psf)
- **Salt Spray Test**: IEC 61701 (Severity 6)
- **Quality Certification**: ISO 9001:2008
- **EHS Compliance**: RoHS, Lead Free, PV Cycle

### Packing Configuration

- **STO Modules Per Box**: 25
- **Modules Per 40’ Container**: 975

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Caution! Read Safety & Installation Manual before handling, installing or operating Stion products. Specification included in this datasheet are subject to change without notice.