

High Performance CIGS Thin-Film Solar Modules

STO-135 / 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



Reliable

- Free of Potential Induced Degradation (PID) and 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



Versatile

- Dual rated 1000 volt UL and IEC
- Black anodized aluminum frame is compatible with most major BOS components and system designs
- Low current allows field paralleling enabling reduced balance of system and labor cost



Simple & Safe

- Convenient form factor enables easy installation and handling by one installer
- Fewer production steps and less raw materials lead to faster energy payback than crystalline silicon modules
- Restriction of Hazardous Substances (RoHS) compliant



Made in the USA

- All of Stion's modules are designed and manufactured in the United States under the highest quality standards



Elevation Series solar modules are specifically designed for use in most solar applications including residential, commercial, government, utility, and off-grid projects.



Electrical Data*

| | | | | |
|---------------------------------------|-----------------|-------|-------|-------|
| Nominal Power, P _{MAX} (W) | 135 | 140 | 145 | 150 |
| Module Efficiency (%) | 12.4% | 12.9% | 13.3% | 13.8% |
| V _{mpp} (V) | 58.2 | 59.8 | 61.0 | 62.7 |
| I _{mpp} (A) | 2.32 | 2.34 | 2.38 | 2.39 |
| V _{oc} (V) | 77.4 | 78.8 | 79.6 | 80.8 |
| I _{sc} (A) | 2.62 | 2.65 | 2.68 | 2.72 |
| Series Fuse Rating (A) | 8 | | | |
| Maximum System Voltage (V-dc) | 1000 (UL & IEC) | | | |
| Temp. Coefficient (P ^{mpp}) | -0.26%/°C | | | |
| Temp Coefficient (V ^{oc}) | -0.24%/°C | | | |
| Temp Coefficient (I ^{sc}) | 0.004%/°C | | | |
| Factory Binning (W) | + / - 2.5 | | | |
| NOCT** | 45.6°C | | | |

* 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 Temperatures (NOCT): 800 W/m², 20°C, 1m/s wind speed

Normal Operating Cell Temperature Conditions

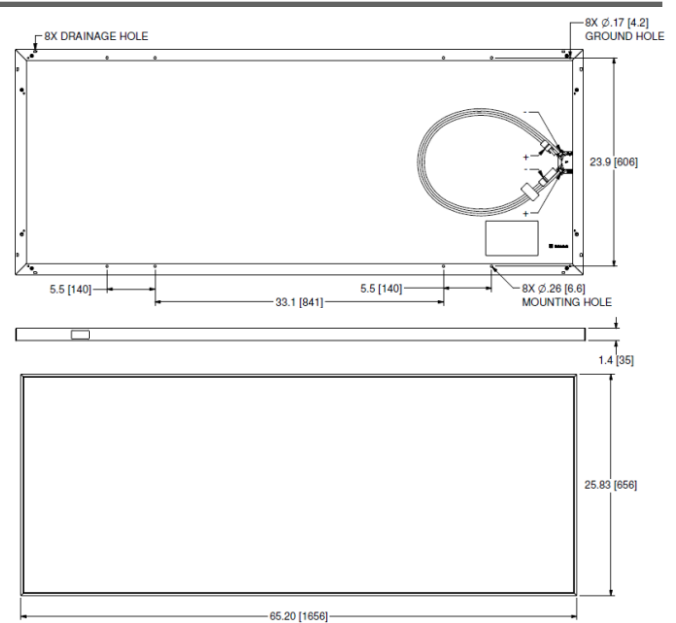
| | | | | |
|-------------------------------------|------|------|------|------|
| Nominal Power, P _{MAX} (W) | 102 | 106 | 110 | 114 |
| V _{mpp} (V) | 53.8 | 55.3 | 56.4 | 58.0 |
| I _{mpp} (A) | 1.91 | 1.92 | 1.95 | 1.96 |
| V _{oc} (V) | 70.3 | 71.5 | 72.3 | 73.3 |
| I _{sc} (A) | 2.17 | 2.19 | 2.22 | 2.25 |

Relative efficiency reduction of maximum power from an irradiance of 1,000 W/m² to 200 W/m² at 25°C is less than 5%.

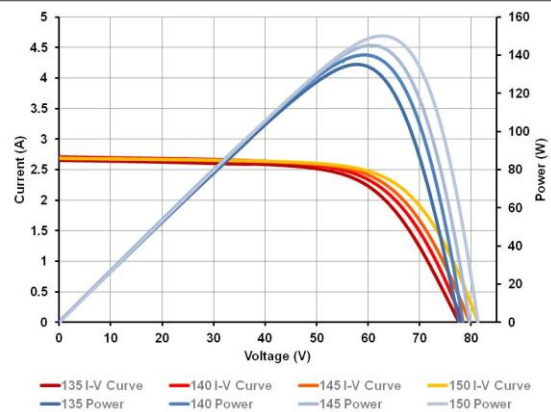
Mechanical Data

| | |
|------------|--|
| 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 ft ² (1.09m ²) |
| Frame | Black Anodized Aluminum |
| Cable | 14 AWG Cable 19.7 in (0.5m) |
| 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 |
| Fire Resistance | Class C (Class A Flame Spread) |
| Safety | Class II (IEC 61140) |
| Mechanical / Wind Load | 2400 Pa (50 psf) |



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