

- High Temperature and Low Light Performance
- 20 Year Warranty on Power Output at 80%
- Quick-Connect Terminals\*
- Bypass Diodes for Shadow Tolerance
- UL Listed to 600 VDC (UL)
- Meets IEC 61646 Requirements



### PERFORMANCE CHARACTERISTICS

Rated Power (Pmax): 68W  
Production Tolerance: ± 5%

### CONSTRUCTION CHARACTERISTICS

**Dimensions:** Length: 2849mm (112.1"), Width: 394mm (15.5"), Depth: 4mm (0.2"), 16mm (0.6") including potted terminal housing assembly.

**Weight:** 3.9 kg (8.7 lbs.).

**Output Cables:** ~2.5mm<sup>2</sup> cable with weatherproof DC rated quick-connect terminals\* 560mm (22") length.

**By-pass Diodes:** Connected across every solar cell.

**Laminate Encapsulation:** Durable ETFE (e.g. Tefzel®) high light-transmissive polymer.

**Adhesive:** Ethylene propylene copolymer adhesive-sealant with microbial inhibitor.

**Cell Type:** 11 triple junction amorphous silicon solar cells 356 x 239mm (14" x 9.4") connected in series.



FLEXIBLE



LIGHTWEIGHT



NO-GLASS



DURABLE



SHADOW TOLERANT



HIGH TEMP PERFORMANCE

### QUALIFICATIONS AND SAFETY

- (UL) Listed by Underwriter's Laboratories for electrical and fire safety (Class A Max. Slope 2/12, Class B Max. Slope 3/12, and Class C Unlimited Slope fire ratings) for use in systems up to 600 VDC.

### LAMINATE STANDARD CONFIGURATION

Photovoltaic laminate with potted terminal housing assembly with output cables and quick-connect terminals.\*

### OPTIONAL CONFIGURATION

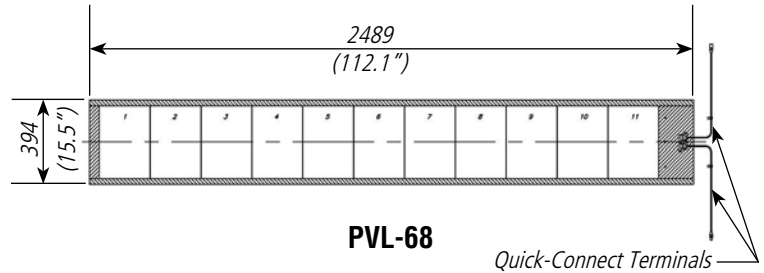
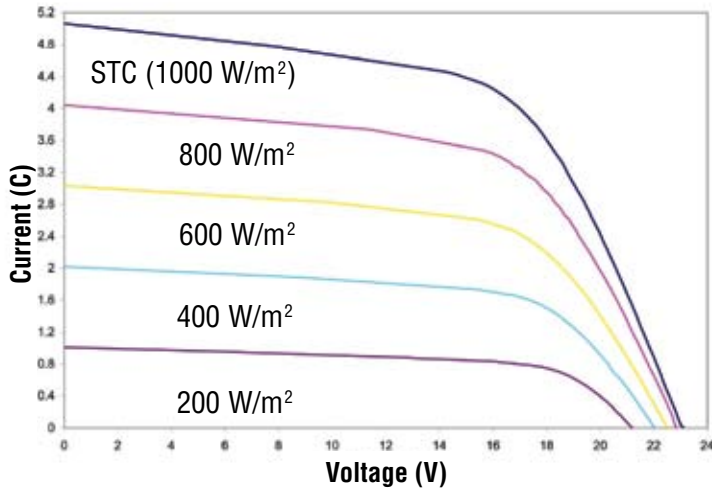
Photovoltaic laminate with junction box.

\*e.g., Multi-Contact (MC®) connectors.

### APPLICATION CRITERION

- New or qualified new roof installations
- 16" minimum steel pan width
- PVDF Coated (Galvalume® or Zincolume®) steel metal pan
- Steel pans with flat surface (without pencil beads or decorative stippling)
- Installation by certified installers only
- Installation temperature between 10°C - 40°C (50°F - 100°F)
- Maximum roof temperature 85°C (185°F)
- Minimum slope 1:12 (5°)
- Maximum slope 21:12 (60°)
- Refer to manufacturers installation guide for approved substrates & installation methods

### IV Curves at various levels of irradiance at Air Mass 1.5 and 25° C Cell Temperature



**All measurements in mm.  
Inches in parentheses.  
Tolerances Length:  $\pm 5\text{mm}$  (1/4")  
Width:  $\pm 3\text{mm}$  (1/8")**

#### ELECTRICAL SPECIFICATIONS: STC

(1000 W/m<sup>2</sup>, AM 1.5, 25° C Cell Temperature)

Maximum Power (P<sub>max</sub>): 68 W

Voltage at P<sub>max</sub> (V<sub>mp</sub>): 16.5 V

Current at P<sub>max</sub> (I<sub>mp</sub>): 4.1 A

Short-circuit Current (I<sub>sc</sub>): 5.1 A

Open-circuit Voltage (V<sub>oc</sub>): 23.1 V

Maximum Series Fuse Rating: 8 A

#### NOCT

(800 W/m<sup>2</sup>, AM 1.5, 1 m/sec. wind)

Maximum Power (P<sub>max</sub>): 53 W

Voltage at P<sub>max</sub> (V<sub>mp</sub>): 15.4 V

Current at P<sub>max</sub> (I<sub>mp</sub>): 3.42 A

Short-circuit Current (I<sub>sc</sub>): 4.1 A

Open-circuit Voltage (V<sub>oc</sub>): 21.1 V

NOCT: 46° C

#### TEMPERATURE COEFFICIENTS

(at AM 1.5, 1000 W/m<sup>2</sup> irradiance)

Temperature Coefficient of I<sub>sc</sub>: 5.1mA/K (0.10%/°C)

Temperature Coefficient of I<sub>mp</sub>: 4.1mA/K (0.10%/°C)

Temperature Coefficient of V<sub>oc</sub>: -88mV/K (-0.38%/°C)

Temperature Coefficient of V<sub>mp</sub>: -51mV/K (-0.31%/°C)

Temperature Coefficient of P<sub>max</sub>: -143mW/K (-0.21%/°C)

#### NOTES:

- During the first 8-10 weeks of operation, electrical output exceeds specified ratings. Power output may be higher by 15%, operating voltage may be higher by 11% and operating current may be higher by 4%.
- Electrical specifications are based on measurements performed at standard test conditions of 1000 W/m<sup>2</sup> irradiance, Air Mass 1.5, and Cell Temperature of 25°C after stabilization.
- Actual performance may vary up to 10% from rated power due to low temperature operation, spectral and other related effects. Maximum system open-circuit voltage not to exceed 600 VDC per UL.
- Specifications subject to change without notice.

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