Solar Laminate PVL-Series
Model: PVL-124

- High Temperature and Low Light Performance
- 20 Year Warranty on Power Output at 80%
- Quick-Connect Terminals* and Adhesive Backing
- Bypass Diodes for Shadow Tolerance
- UL 1703 Listed to 600 VDC
- IEC 61646 v1 certified
- IEC 61646 v2 and 61730, TUV certification pending

Performance Characteristics
Rated Power ($P_{\text{max}}$): 124 Wp
Production $P_{\text{max}}$ Tolerance: ± 5%

Construction Characteristics
Dimensions:
- Length: 5007 mm (197.1"), Width: 394 mm (15.5"), Depth: 4 mm (0.2"),
- 16 mm (0.6") including potted terminal housing assembly
Weight: 7.0 kg (15.5 lbs)
Output Cables:
- 4 mm² (12 AWG) cable with weatherproof DC rated quick-connect terminals*
- 560mm (22") length.
By-pass Diodes:
- Connected across every solar cell
Encapsulation:
- Durable ETFE high light-transmissive polymer
Adhesive:
- Ethylene propylene copolymer adhesive-sealant with microbial inhibitor
Cell Type:
- 20 triple junction amorphous silicon solar cells 356 mm x 239 mm
  (14" x 9.4") connected in series

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, 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*

Application Criterion
- New or qualified new roof installations
- 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: 5/8:12 (3°)
- Maximum slope 21:12 (60°)
- Membrane: Select EPDM and TPO substrates from approved manufacturers only
- Metal: PVDF Coated (Galvalume® or Zincalume®) steel metal roofing pan with flat surface (without pencil beads or decorative stippling) and 406 mm (16") minimum width

Refer to manufacturers installation guide for approved substrates and installation methods

*e.g., Multi-Contact (MC®) Connectors
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**IV Curves at various Levels of Irradiance at Air Mass 1.5 and 25 °C Cell Temperature**

![IV Curves Graph]

**Electrical Specifications**

**STC**

(Standard Test Conditions)

(1000 W/m², AM 1.5, 25 °C Cell Temperature)

- Maximum Power ($P_{max}$): 124 W
- Voltage at Pmax ($V_{mp}$): 30.0 V
- Current at Pmax ($I_{mp}$): 4.13 A
- Short-circuit Current ($I_{sc}$): 5.1 A
- Open-circuit Voltage ($V_{oc}$): 42.0 V
- Maximum Series Fuse Rating: 8 A

**NOCT**

(Nominal Operating Cell Temperature)

(800 W/m², AM 1.5, 1 m/sec. wind)

- Maximum Power ($P_{max}$): 96 W
- Voltage at Pmax ($V_{mp}$): 28 V
- Current at Pmax ($I_{mp}$): 3.42 A
- Short-circuit Current ($I_{sc}$): 4.1 A
- Open-circuit Voltage ($V_{oc}$): 38.4 V
- NOCT: 46 °C

**Temperature Coefficients**

(at AM 1.5, 1000 W/m² irradiance)

- Temperature Coefficient (TC) of $I_{sc}$: 0.001%/°K (0.10%/°C)
- Temperature Coefficient (TC) of $V_{oc}$: -0.0038%/°K (-0.38%/°C)
- Temperature Coefficient (TC) of $P_{max}$: 0.0021%/°K (-0.21%/°C)
- Temperature Coefficient (TC) of $I_{mp}$: 0.001%/°K (0.10%/°C)
- Temperature Coefficient (TC) of $V_{mp}$: -0.0031%/°K (-0.31%/°C)

$$ y = y_{reference} \times (1 + TC \times (T - Reference)) $$

**Notes:**

1. 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 %.
2. Electrical specifications are based on measurements performed at standard test conditions of 1000 W/m² irradiance, Air Mass 1.5, and cell temperature of 25 °C after stabilization.
3. 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.
4. Specifications subject to change without notice.

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#AA5-3605-03