



## Field Applied Roofing Laminate

## Specification Sheet

**Models: PVL- 64  
PVL-128**

- **64 and 128 Watt Roofing Laminates**
- **Triple Junction Solar Cells**
- **Roll-to-Roll Production Process**
- **Lightweight, Flexible Product Construction**
- **Roll Shippable**
- **Easy Peel and Stick Installation**
- **Bypass Diodes for Shadow Tolerance**
- **Field Applied Junction Boxes for Top Termination**
- **20 Year Warranty (Installation Certification required)**
- **UL Listed**

### **Product Description and Application**

Each *UNI-SOLAR*® PVL (photovoltaic laminate) utilizes the proprietary Triple Junction solar cells manufactured by United Solar Systems Corp. for Bekaert ECD Solar Systems LLC. These cells are made in a roll-to-roll deposition process on a continuous roll of stainless steel sheet metal. The result is a unique, flexible, lightweight cell.

The *UNI-SOLAR*® PVL Roofing Laminates are made exceptionally

durable by encapsulation in UV stabilized polymers. The polymer encapsulation includes EVA and the DuPont fluropolymer film, Tefzel®.

Bypass diodes are connected across each cell, allowing the modules to produce power even when partially shaded.

These special roofing laminates are designed to be bonded on 16-inch wide, flat Galvalume® pans. They come with the bonding adhesive factory-installed on the back of the laminate. Included is a rugged, weatherproof junction box that is field applied on the top of the finished product. These laminates are appropriate for a wide variety of applications, from single-module solar home systems (SHS) to large village hybrids or grid-connected installations.

### **Triple Junction Technology**

The foundation of the new *UNI-SOLAR*® PVL is the Triple Junction silicon solar cell unique to United Solar. Each cell is composed of three semi-conductor junctions stacked on top of each other. The bottom cell absorbs the red light, the middle cell absorbs the green light and the top cell absorbs the blue light.

This spectrum splitting capability is the key to higher efficiency.

### **Bekaert ECD Solar Systems LLC**

Bekaert ECD Solar Systems LLC is a joint venture of United Solar Systems Corp., a world leader in photovoltaics, and N. V. Bekaert S. A., the worldwide leading manufacturer of steel wire, steel wire products and steel cords.

# For Metal Roofing Applications

## Dimensions and Specifications

Physical:

	Laminate Length	Laminate Width	Laminate Thickness	Weight	Customer-Supplied Substrate	Minimum Slope
PVL-64	9 ft. 4.13 in.	15.5 in.	0.12 in.	9 lb.	Galvalume®	1:12
PVL-128	18 ft.	15.5 in.	0.12 in.	17 lb.	Galvalume®	1:12

Electrical:

Specifications and Performance	PVL- 64	PVL- 128
Rated Power (Watts)	64	128
Nominal Operating Voltage	12	24
Operating Voltage (Volts)	16.5	33.0
Operating Current (Amps)	3.88	3.88
Open-Circuit Voltage (Volts)	23.8	47.6
Open-Circuit Voltage (Volts) at -10°C and 1250 W/m <sup>2</sup>	27.1	54.2
Short-Circuit Current (Amps)	4.8	4.8
Short-Circuit Current (Amps) At 75°C and 1250 W/m <sup>2</sup>	6.3	6.3
Series Fuse Rating (Amps)*	8	8
Min. Blocking Diode (Amps)	8	8

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 ( $\pm 10\%$ ) 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 long-term 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.

Specifications subject to change without notice.

\* Refer to section 690-8 of the National Electric Code for an additional factor of 125%, which may be applicable.

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***UNI-SOLAR***®



**Triple Junction  
Technology**