

## Uni-Solar PVL Installation Approval & Warranty

Uni-Solar PVL laminates carry a 25-year performance and adhesion warranty when applied to approved standing seam steel roofing, or approved membrane-type roofing with strict adherence to installation procedures outlined in the current version of Uni-Solar's "Field Applied PV Laminates Installation Guide for Steel Roof Systems", or the current version of Uni-Solar's "Installation Manual for PVL on Membrane" manuals.

The attached installation check list and final report should be filled out and filed with Uni-Solar to insure full warranty coverage.

Dealers and installers who have not received formal installation training should review the appropriate installation manual carefully, and watch the Uni-Solar Installation DVD before attempting their first installation. We will mail a free copy of the DVD to any requesting dealer, and can provide installation manuals via email or our website. Please feel free to call our experienced technical staff with any installation questions.

Whenever possible PVL metal roof installations should take place at ground level on a sturdy sawhorse surface before the metal goes up on the roof. (Goes about 3 times faster!)

A copy of the current Uni-Solar product warranty is attached for your continuing edification and delight.

## SECTION #5

### 5.1. PVL Installation Check List and Final Report

The purpose of this Report is to certify that the undersigned installer has completed installation of *UNI-SOLAR* PVL Laminate described below in accordance with the manufacturer’s installation guidelines and has fully complied with the PVL bonding instructions.

To ensure that the PVL laminate was properly installed, it will be required that all Certified PVL Installers copy the Installation Checklist and Final Report from this manual, fill in the Checklist and Report after installation of the product at any given site. The Check List and Report is then signed, dated and returned to:

United Solar Ovonic LLC  
 BIPV Applications Engineering Department  
 3800 Lapeer Road  
 Auburn Hills, MI 48326

**Installation Location:**

Customer / Project Name:.....

Site Address:.....

Customer Telephone / Email: .....

**Pre-Installation:**

QUESTION	YES	NO
1. Are the pans flat (no decorative stucco finish or pencil beads)?		
2. Are the pans a part of a UL Listed roofing system?		
3. Are the pans made of Galvalume (steel pans with the AZ-55 or AZ-50 treatment)?		
4. Are the pans painted with a Kynar 500 type PVDF topcoat?		
5. What is the width of the pans (Minimum width = 16")		
6. Did the roofer install the metal roofing system properly?		

**Note to End User:**

If the PVL Solar Electric Laminates will not be bonded to Galvalume pans and/or any of the Pre-Installation questions were answered negatively, the end user must sign below indicating that he/she will accept a ONE YEAR LIMITED WARRANTY on the adhesion and electrical/physical integrity of the module.

Signature (End User): \_\_\_\_\_

**Application of the PVL Product:**

QUESTION	YES	NO
1. If the PVL application will take place on an existing roof, were the pans washed with a pressure sprayer and cleaning solution (ex. TSP, Detergent and Water) to remove collected dirt, pollen, grime etc.?		
2. Were the pans washed with Isopropyl Alcohol (90% alcohol to 10% water) before application of the laminates?		
3. Was the pan temperature at least 50° F during the bonding process?		
4. Were all laminates aligned properly on the pans?		
5. Did all the laminates adhere to pan completely?		
6. Was every square inch of the laminate pushed down to the metal pan surface with the laminate roller to ensure a complete bond to the metal pan?		
7. Was the Junction Box or Quick Connect Terminals aligned properly?		
8. Did the laminates come with Quick Connect Terminals, a standard J-Box or a J-Box w/ Quick Connects?		
9. How long did it take (on average) to bond the laminate and J-Box to the pan?		Minutes

**Post-Installation:**

QUESTION	YES	NO
1. Did the roofer install the pans properly?		
2. Was there any damage to the solar module (laminate) during installation?		
3. Are any ripples or other defects in the PVL application seen from the ground?		
4. Is the J-Box or Quick Connect wiring adequately protected from UV by metal roofing trim (or an approved wire cover)?		

**System Information:**

QUESTION	
1. What is the operating voltage of the PV array?	
2. Which laminates were installed at this site (PVL-29, PVL-58, PVL-64, PVL-87, PVL-116, or PVL-128)?	
3. How many PVL laminates were installed on the UL Listed Roofing System at this site?	
4. What type of inverter was installed at this site?	
5. What type (if any) of battery was installed at this site? What is the total amp-hour capacity of the battery?	

**Note to Installer:**

The quality and acceptance of PVL installations are the prime responsibility of the installer. United Solar Ovonic LLC reserves the right to inspect any and all installations to verify the accuracy of this report. Providing inaccurate or misleading information will cause immediate cancellation of the installer's certification.

**Installer:**

Signature:.....Date:...../...../.....

Name:.....

Address.....

**Telephone:** .....

**Email:** .....

## UNI-SOLAR® Photovoltaic Laminates Limited Product and Power Output Warranty

### Limited Product Warranty

United Solar Ovonix LLC (“USO”) warrants that its photovoltaic laminates (“PV Product”) will be free from defects in materials and workmanship under normal application, use, installation, operation and service for a period of five (5) years from the date of sale to the end user customer (“Customer”) that purchases PV Product from an authorized channel partner, installer or original equipment manufacturer. If the PV Product does not conform to the foregoing warranty, USO will, at its option, either repair or replace the PV Product, or refund a prorated portion of the purchase price paid by the Customer. If replaced or repaired, the replacement or repaired PV Product will be covered by this Limited Product Warranty for the remainder of the returned PV Product’s warranty period. This Limited Product Warranty does not warrant a specific power output, which is exclusively covered under the Limited Power Output Warranty set forth below.

### Limited Power Output Warranty

USO additionally warrants that the PV Product shall (i) during the first ten (10) years from the date of sale, produce at least 92% of the minimum power output rating, (ii) during the first twenty (20) years from the date of sale, produce at least 84% of the minimum power output rating, and (iii) during twenty-five (25) years from the date of sale, produce at least 80% of the minimum power output rating, where the minimum power output rating is the rated power minus the applicable tolerance, as specified in the PV Product technical datasheet. Power output shall be determined by USO and measured under Standard Test Conditions (STC) using a method, measurement equipment, and laboratory acceptable to USO. This warranty applies only to PV Product installed, operated, and serviced according to USO documentation and only if the lost power is due to a defect in material or workmanship. If the PV Product does not conform to the foregoing warranty, USO will, at its option, (i) repair or replace the PV Product, (ii) provide supplemental PV Product to meet the minimum power output, or (iii) refund a prorated portion of the purchase price commensurate with the lost power, as reasonably determined by USO.

### Limitation of Remedies

THE REMEDIES SET FORTH ABOVE ARE THE EXCLUSIVE REMEDIES FOR ANY BREACH OF WARRANTY BY USO. The sole purpose of these exclusive remedies is to provide for the repair, replacement, or supplementation of PV Product, or refund of a portion of the applicable purchase price, in the event of a breach of warranty at USO’s option. This exclusive remedy shall not be deemed to have failed its essential purpose so long as USO is willing and able to replace or repair the nonconforming PV Product, provide supplemental PV Product, or provide a refund for such PV Product as described under the terms of the foregoing limited warranties. This warranty is in lieu of all other warranties. USO’s failure to enforce any of the terms or conditions of warranty in this document will be not construed as a waiver of that provision or any other terms and conditions of these warranties.

### Effectivity, Registration, Transfer

The warranties in this document are only effective if the PV Products were purchased from an authorized channel partner, installer or original equipment manufacturer, are installed in an approved application in accordance with USO documentation, and the installation has been registered at [www.uni-solar.com](http://www.uni-solar.com). The warranties in this document are transferable to an assignee only when the PV Product remains installed in the original location. Transferred warranties shall remain in effect for the time period remaining in the term of the respective original limited warranties.

### Warranty Exclusions

The warranties do not apply to any damage, malfunctions, or failures of PV Product which, in the judgment of USO, has been subject to:

- a. misuse, abuse, neglect, alteration, accident, vandalism, and excessive wear and tear;
- b. improper or inadequate installation, application, maintenance or cleaning, or failure to otherwise use reasonable care in maintaining the PV Product;
- c. negligence in use, storage, transportation or handling;
- d. installations not in conformance with USO specifications, installation manuals, operation manuals, and maintenance instructions;
- e. application to substrates or materials that have not been approved by USO;
- f. damage or corrosion caused by substrates, roofing materials, or their properties, such as corrosion resistance, thermal expansion and contraction, and water sealing properties;
- g. lack of compliance with applicable codes;
- h. repair by anyone other than USO or a USO-approved repair technician;
- i. power failure surges, lightning, fire, falling objects, flood, insect or animal damage, or other events or accidents outside USO’s reasonable control;
- j. altered, removed, or illegible PV Product serial number(s);
- k. damage due to water pooling on the PV Product surface or any evidence thereof;
- l. damage or corrosion due to environmental pollution, such as soot, chemical vapors, acid rain or salt water.

The warranties do not cover any transportation costs for return of PV Product or for reshipment of any repaired PV Product, costs associated with installation, removal or reinstallation of PV Product, or costs associated with any other system components or parts other than the PV Product.

### Warranty Limitations

EXCEPT AS EXPRESSLY SET FORTH IN THIS DOCUMENT, USO MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. TO THE FULLEST EXTENT PERMITTED AT LAW, UNDER NO CIRCUMSTANCES WILL USO BE LIABLE FOR ANY SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF REVENUES ARISING DIRECTLY OR INDIRECTLY FROM THE SALE OR USE OF ANY PRODUCTS (INCLUDING PV PRODUCT), WHETHER SUCH CLAIM IS BASED ON WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE. UNDER NO CIRCUMSTANCES SHALL THE LIABILITY OF USO FOR NONCONFORMING PRODUCTS EXCEED THE PURCHASE PRICE PAID TO USO FOR THE PARTICULAR PV PRODUCT INVOLVED. THE RIGHTS AND LIMITATIONS IN THIS DOCUMENT MAY NOT AFFECT LEGAL RIGHTS EXISTING UNDER MANDATORY APPLICABLE LAWS.

### Return Policy, Contact Information

A Customer seeking to make a claim covered by this Limited Warranty document must immediately notify the party who sold the PV Product, or an authorized USO representative, or USO directly at [www.uni-solar.com](http://www.uni-solar.com). Warranty claims must be submitted to USO with a description of the claimed defect, the PV Product serial number, and evidence indicating the purchase date. USO will not accept the return of any PV Product unless it has given prior written authorization in the form of a validly issued return material authorization. In the event that a claimed defect is denied and PV Product has been shipped to USO for evaluation of the claimed defect, USO is not responsible for the packaging and transportation costs, if any, to return PV Product.