

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION

Effective October 1, 2011

RV-64

The following product has been evaluated for compliance with the wind loads specified in **International Residential Code (IRC)** and the **International Building Code (IBC)**. This product shall be subject to reevaluation **September 2015**.

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

Model 10 Watt, 20 Watt, 30 Watt, and 40 Watt Roof Mounted Solar Powered Attic Fans, manufactured by

Natural Light Energy Systems LLC
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Phoenix, Arizona 85029
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will be acceptable for use in designated catastrophe zones along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions, the approved design drawings specified in this product evaluation, and this product evaluation.

PRODUCT DESCRIPTION

The roof mounted attic fan is a solar powered attic fan used to provide exhaust ventilation of the attic or interior space of a structure. Presented below are the dimensions of the solar panels for each model:

Models	10 Watt	20 Watt	30 Watt	40 Watt
Photovoltaic Panel Size (W x L)	10.375" x 16.625"	14" x 22.625"	19.75" x 23.125"	20.875" x 26.5"

Assembly: The solar attic fan is comprised of a shroud, fan motor and fan, flashing, and assorted brackets and hardware, all corrosion resistant. The shroud and the flashing are formed of 1100 series aluminum with a 0.08" thickness. The overall height of the assembly is 9.1" and the diameter is 27.25". The flashing is conical formed with a bottom diameter opening of 21" and a top diameter of 13.375" with a height of 5.75". The top of the shroud is circular in form with conical sides formed at a height of 4.75". The stainless steel fan grill is attached to four brackets and the four brackets join the flashing to the shroud using eight (8) stainless steel screws.

Fan and Solar Panel Assembly: The height of the stainless grill (1/4" mesh) and four (4) aluminum brackets is 4 inches and join the shroud to the flashing using stainless steel screws. The fan motor mounting brackets and fan blade assembly are attached to the shroud with sheet metal screws. The solar panel is attached to the top of the shroud by brackets and hardware and it has an adjustable tilt to optimize the solar angles to maximize power to the motor. In anticipation of high wind events, the solar panel should be secured in the horizontal position.

The electric requirements of the fan motor are low voltage DC output for the panel to a 36 v DC rated motor.

Deck Flashing Construction: The deck flashing is formed of an 1100 series aluminum sheet, 0.090" thick, for all sizes and mounting options. The flashing can be unpainted or powder coated black. The flashing is available in two configurations: flat or curb mounted. The flashing is sealed with silicone 2300 exterior grade sealant to the roof deck and secured with 1.5" stainless steel screws. The hole at the top of the flashing is 13.375".

LIMITATIONS

Design Wind Pressure: +115 psf / -120 psf

Roof Deck: The roof sheathing shall be minimum nominal $\frac{7}{16}$ " OSB. Solid board decking (minimum nominal 1 inch thick Douglas Fir-Larch lumber) is also acceptable.

Roof Slope: There is no minimum slope. The maximum roof slope is 12:12.

Impact Resistance: N/A.

INSTALLATION INSTRUCTIONS

General Installation Requirements:

The attic fan shall be installed in accordance with the manufacturer's installation instructions, applicable sections of the IBC and the IRC, and this evaluation report. Detailed installation instructions are available from the product manufacturer.

Design Drawings: The attic fans shall be installed in accordance with Natural Light Energy Systems Roof Mounted Solar Attic Fan Installation Anchorage Details, Drawing No. NLS0005, Sheets 1–5 of 5, dated August 31, 2011, with each sheet signed, sealed, and dated by Robert J. Amoruso, P.E. on August 31, 2011. The stated drawings will be referred to as approved drawings in this report. A copy of the approved drawings shall be available at the job site.

Installation:

The rood deck material shall be as described in this evaluation report. The solar attic fan should be strategically located to optimize ventilation. The unit shall be installed on the roof by cutting a 19" diameter hole in the roof. Roof rafters are generally 16" or 24" on center. If the rafters are spaced 16" on center, the installer can either cut a 14" hole between the raters or cut a 19" hole with the roof rafter running through the cut. Do not cut through the roof framing. Cut the hole to the proper diameter. Remove all existing roofing nails between the 9 o'clock and the 3 o'clock position within 4 inches of the cut hole. Caulk the underside of the flashing with two (2) 3/8" continuous concentric rings of 2300 tripolymer sealant that is provided. Slide the flashing under the underlayment and the shingles until the shingles come in contact with the raised portion of the flashing. Secure the flashing in accordance with the approved drawing specified in this evaluation report. Seal all of the seams and screws sealant.

Note: The manufacturer's installation instructions and the approved drawings specified in this evaluation report shall be on the job site during the installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC); the International Building Code (IBC); and the Texas Revisions.