

Product Evaluation

RV111 | 0319

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

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.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

Evaluation ID: RV-111

Effective Date: March 1, 2019

Re-evaluation Date: March 2023

Product Name: Cardinal Ventilation® SFA Model Series Fans,
Cardinal Ventilation® ULP Model Series Fans with Adjustable Solar Panel,
Cardinal Ventilation® ULP Model Series Fans with Embedded Solar Panel

Manufacturer: Attic Breeze, LLC
1370 FM 116
Gatesville, TX 76528
(254) 865-9999

General Description:

The ventilators specified in this product evaluation are self-flashing roof mounted solar attic fans designed for composition (asphalt) shingle roofs or similar low-profile roofing materials. The products come standard in a powder coated finish and feature a solar panel directly attached to the top of the fan housing. The solar panel may be either fixed (embedded) or adjustable depending on the specific model series.

Product Type	Solar Powered Ventilation System				
Cardinal Ventilation®	SIZE			Solar Panel	Design Pressure
	Base Dia.	Dome Dia.	Height		
Models SFA	679 mm (26-3/4")	591 mm (23-1/4)	260 mm (10-1/4)	Adjustable	±126.6 psf
Models ULP	648 mm (25-1/2")	575 mm (22-5/8")	187 mm (7-3/8")	Adjustable	±126.6 psf
Models ULP	648 mm (25-1/2")	575 mm (22-5/8")	203 mm (8.0")	Embedded	±126.6 psf

SFA Model Series Fans:

The CV-2000 fans include a 20W adjustable solar panel. The CV-3000 fans include a 30W adjustable solar panel. The base flashing is manufactured from 0.024" G90 galvanized sheet metal and the hood is constructed of 0.080" 3003-O spun aluminum on all models. The fan hood is attached to the base with four (4) 1" x 6-1/4" x 1" 16-gauge G90 steel brackets. The brackets attach to the base with four (4) 1/4" Tog-L-Lok connections and to hood with one (1) 1/4-20 x 3/4" bolt with neoprene bonded washer, lock washer, and wing nut. A top view, bottom view, side view, and front view with dimensions are included in this evaluation report.

ULP Model Series Fans with Adjustable Solar Panel:

The CV-2000-ULP fans include a 20W adjustable solar panel. The CV-2500-ULP fans include a 25W adjustable solar panel. The CV-3000-ULP fans include a 30W adjustable solar panel. Both the base flashing and hood on all models are constructed from 0.080" 3003-O spun aluminum. The fan hood is attached to the base with four (4) 1" x 4-3/4" x 1" 16-gauge G90 steel brackets. The brackets attach to the base with three (3) 1/4" Tog-L-Lok connections and to hood with one (1) 1/4-20 x 3/4" bolt with neoprene bonded washer, lock washer, and wing nut. A top view, bottom view, side view, and front view with dimensions are included in this evaluation report. This product model series is also sold under the Cardinal Ventilation® "Cardinal Ultra™" or "HH365™" brand names.

ULP Model Series Fans with Embedded Solar Panel:

The CV-2100-EM fans include a 21W fixed (embedded) solar panel. Both the base flashing and hood on this model are constructed from 0.080" 3003-O spun aluminum. The fan hood is attached to the base with four (4) 1" x 4-3/4" x 1" 16-gauge G90 steel brackets. The brackets attach to the base with three (3) 1/4" Tog-L-Lok connections and to the hood with one (1) 1/4-20 x 3/4" bolt with neoprene bonded washer, lock washer, and wing nut. The solar panel is cushioned from the base with 1/4" backer rod set in sealant and secured to hood with a 0.063" spun aluminum retainer ring, attached with four (4) No. 6 x 3/4" self-tapping washer head screws. A top view, bottom view, side view, and front view with dimensions are included in this evaluation report. This product model series is also sold under the Cardinal Ventilation® "Cardinal Ultra™" or "HH365™" brand names.

Model SFA and ULP Adjustable Solar Panel Brackets:

Product models featuring an adjustable solar panel are secured to the fan hood with 16-gauge G90 steel brackets. Two (2) hood brackets spaced on solar panel foot print are attached to the hood with two (2) 1/4-20 x 3/4" bolts with lock washer and nut per bracket. Two (2) panel brackets are attached to the solar panel's long dimension and secured to panel with two (2) 1/4-20 x 3/4" bolts with lock washers and nuts per bracket. Each panel bracket is attached to the hinge end of the hood bracket and to a leg bracket at the pivot end with one (1) 1/4-20 x 1/2" bolt with flat washers and lock nut per connection. The leg bracket is attached to the hood bracket and the panel bracket

Limitations:

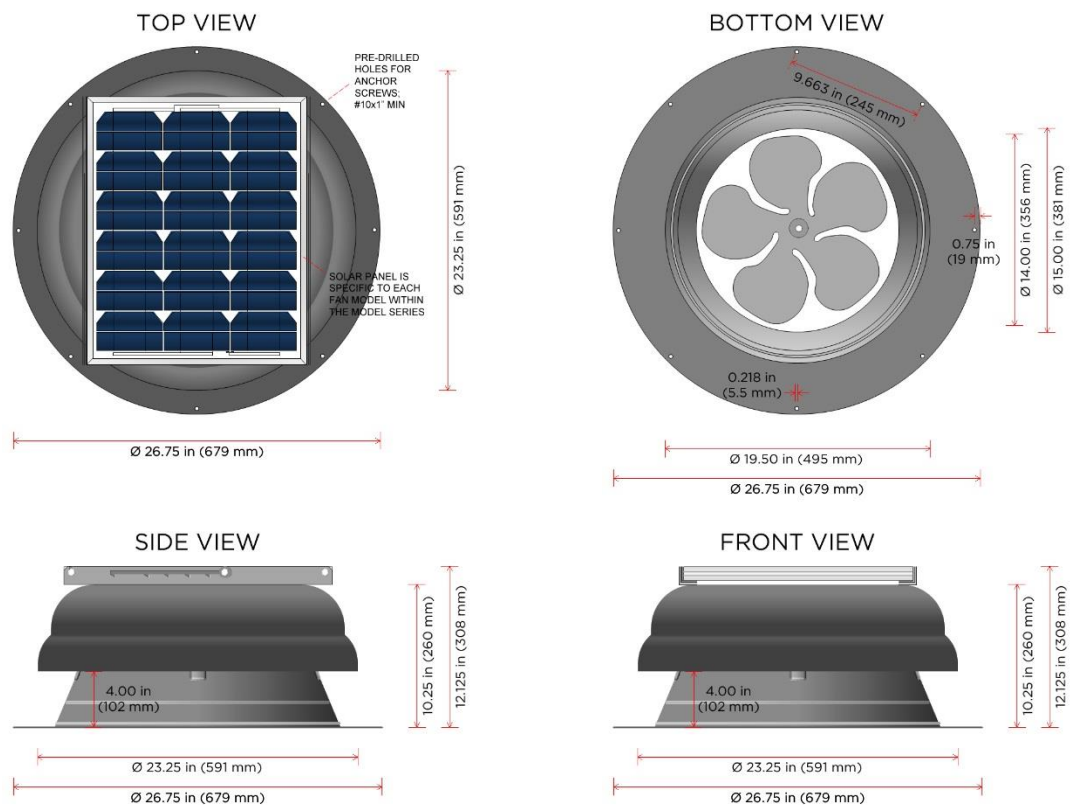
- **Roof Slope:** Do not install the product on roof slopes less 3:12 or greater than 12:12.
- **Roof Deck:** Minimum 7/16" thick plywood.
- **Design Pressure:** The maximum design pressure for all product models is 126.6 psf.

Installation:**General:**

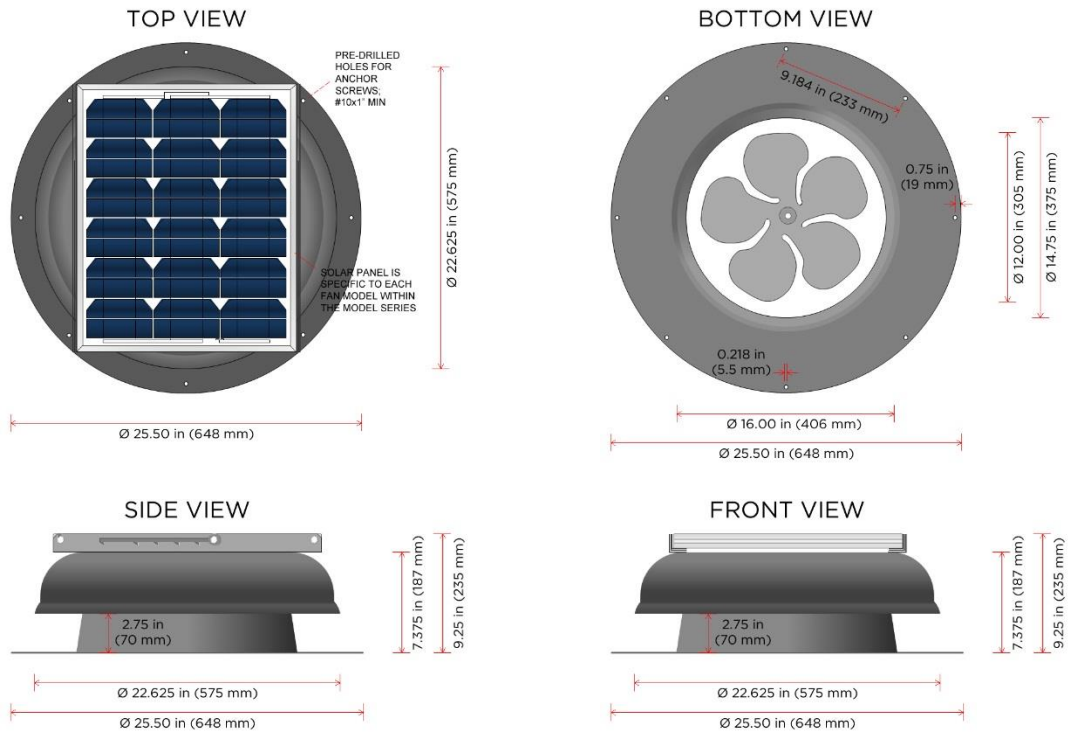
Follow the manufacturer's installation instructions for the specified product model. Do not cut through any roof framing members (rafters or trusses) when cutting the vent hole for the fan. Lift the shingles located directly around the cut vent hole and slide the attic fan base flange underneath the shingles and underlayment. Position the attic fan so that it is centered with the vent hole and adjust the orientation of the fan as needed. Secure the fan to the roof decking as described below and apply weatherproofing as specified by the product manufacturer.

Attachment:

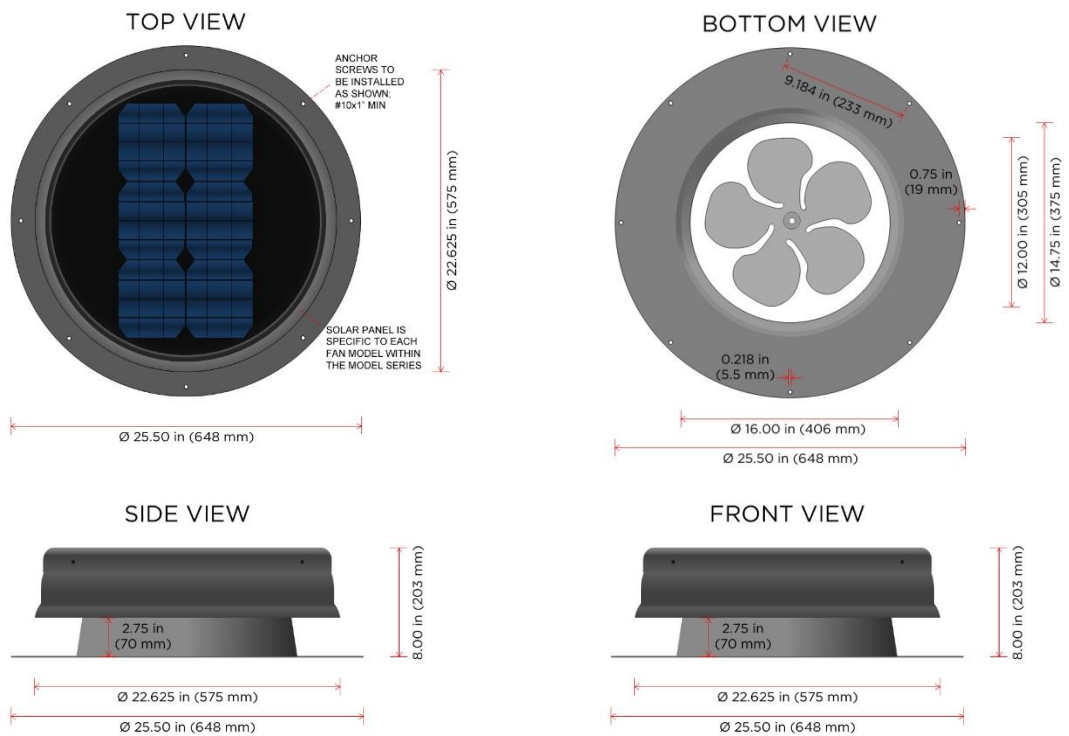
The fan base must be anchored to the roof decking with a minimum of eight (8) No. 10 x 1-1/2" wood screws. Fasteners must include neoprene washers. The anchor screws must fully penetrate the plywood decking through pre-drilled holes in the fan base or as specified in design drawings.

Design Drawings:Cardinal Ventilation® SFA model series fans

Cardinal Ventilation® ULP model series fans with adjustable solar panel



Cardinal Ventilation® ULP model series fans with embedded solar panel



Note: Keep the manufacturer's installation instructions available on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC, the IBC, and the Texas Revisions.