

VELUX America Inc.
SPECIFICATION FOR MODEL QPF
SELF-FLASHED FIXED SKYLIGHT
SECTION 08620 – UNIT SKYLIGHTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance and product component information for VELUX® QPF self-flashed fixed skylight.
- B. Unit skylight mounted directly to roof decking.
- C. Skylight and flashing provided as one complete assembly.

1.02 REFERENCE STANDARDS

- A. *ASTM E 283 – Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specific Pressure Differences Across the Specimen.*
- B. *ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors Skylights and Curtain Walls by Uniform Static Air Pressure Difference.*
- C. *ASTM E 331 – Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.*
- D. *ASTM E 1886 – Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.*
- E. *ASTM E 1996 – Standard Specifications for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.*
- F. *National Fenestration Rating Council, NFRC 100, Procedure for Determining Fenestration Product U-factors.*
- G. *National Fenestration Rating Council, NFRC 200, Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.*
- H. *National Fenestration Rating Council, NFRC 300, Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems.*

- I. Occupational Safety & Health Administration, OSHA Standards – 29 CFR 1910.23, *Guarding Floor Openings and Holes.*

1.03 SYSTEM DESCRIPTION

- A. Skylight: Fixed self-flashed skylight consisting of the following main integrated components - an interior condensation drainage gasket, an insulating glass unit, exterior structural sealant, roll-formed aluminum frame counter flashing, ASA corner keys, welded aluminum base flashing, and wood frame.
- B. Configuration: Fixed unit, deck mounted
- C. Condensation Control: Integral internal condensation collection system and drainage slots.
- D. Accessories available but sold separately:
 - a. Manual blackout blinds, manual venetian blinds, and manual roller blinds.
 - b. Solar powered blackout blinds, solar powered roller blinds.
- E. Manual controls are available but sold separately.
 - a. Six – ten feet manual telescopic rod.
 - b. Six – ten feet motorized telescopic rod.

1.04 PERFORMANCE REQUIREMENTS

- A. The QPF self flashed fixed skylight is independently tested in accordance with listed standards for compliance with the unit skylight provisions of the 2003, 2006 and 2009 IBC, IECC, and IRC as follows:
 - a. AAMA/WDMA/CSA 101/I.S.2/A440-05 NAFS-05 and AAMA/WDMA/CSA 101/I.S.2/A440-08 NAFS-08.

Performance Grades must be greater than or equal to:

- i. Downward design pressure = 210 psf
- ii. Uplift design pressure = 55 psf

b. AAMA/WDMA/CSA 101/I.S.2/A440-02 (NAFS – 02)

Rated pressures must be greater than or equal to:

- i. Downward design pressure = 150 psf
- ii. Uplift Design Pressure = 70 psf

- B. Air leakage: Maximum of 0.9 l/s/m² (0.17 CFM/ft²) of total unit area, measured at a differential pressure of 75 Pa (1.57 psf) in accordance with ASTM E 283, per the NAFS standards in (A).
- C. Water infiltration: No water penetration noted as measured in accordance with ASTM E 331 with a test pressure differential of 720 Pa (15.0 psf). Exceeds requirements of NAFS standards in (A).
- D. Thermal Performance: U-factor = 0.44 Btu/hr*ft²*F° or less, SHGC = 0.24 or less and [VT = 0.52 or greater (clear)] [or VT = 0.39 (white)]. Tested and certified in accordance with NFRC 100 and 200 procedures. 2010 ENERGY STAR® qualified all U.S. zones.
- E. QPF skylights with impact glazing (06): Tested and certified in accordance with ASTM E 1886 and ASTM E 1996, Cycle Pressure +50/-50, Missile Level C, Wind Zone 3.
- F. Limit member deflection to flexure limit of glass with full recovery of glazing materials.
- G. System accommodates, without damage to components or deterioration of seals, movement between flashing and frame.

1.05 SUBMITTALS

- A. Product Data: Manufacturer's installation details and product data sheets include:
- a. Preparation details and installation instructions
 - b. Product Data sheets with storage and handling information
 - c. Architectural roof sectional drawings can be found at www.VELUXusa.com.
 - d. Code compliance information can be found within these specifications, or by contacting VELUX at 800-888-3589, or by visiting www.VELUXusa.com.

B. Architectural/Cross Sectional Drawings

- a. Mounting details
- b. Frame sizes
- c. Flashing details

C. Shop Drawings

- a. Indicate material types, gauge, finishes, and installation details

D. Maintenance Data: For unit skylights (sunscreening accessories) to be included in maintenance manuals.

E. Warranty: Sample of warranty or special warranty

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications:

- a. Skylight manufacturer shall have a minimum of ten years experience in design and fabrication of deck mount glass skylights.
- b. Skylights shall be manufactured to the highest standards of quality and craftsmanship in ISO 9001 and ISO 14001-certified facilities.

B. Source Limitations: Obtain unit skylights and accessories from a single source and from a single manufacturer.

- a. Electrical Components, Devices, and Accessories: Listed and labeled by a qualified testing agency as defined in NFPA 70, and marked for intended location and application.
- b. Unit Skylight Standard: Comply with AAMA/WDMA 101/I.S.2./NAFS, *North American Fenestration Standard Voluntary Performance specifications for Windows, Skylights and Glass Doors*, and all later editions, for minimum standards of performance, materials, components, accessories, and fabrication. Comply with more stringent requirements if indicated.
- c. Provide third-party certified unit skylights with attached labels.
- d. Thermal Performance – rated per applicable NFRC procedures.
 - i. Provide NFRC-certified unit skylight ratings on an attached label.
 - ii. Qualify under ENERGY STAR criteria in all 50 states carry a verifying label.

- e. Manufactured to the highest standards of quality and craftsmanship in accordance with VELUX Manufacturing Standards.

1.07 COORDINATION

- A. Coordinate unit skylight installation requirements with roofing system.
- B. Pre-installation conference: conduct conference at (project site).

1.08 WARRANTY

- A. Standard VELUX product warranty, as specified in VELUX Warranty, publication XUS 20194.

1.09 DELIVERY, HANDLING, STORAGE

- A. Deliver products in manufacturer's original containers dry and undamaged, with seals and labels intact.
- B. Store and protect products in accordance with manufacturer's recommendations.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Acceptable Manufacturer: VELUX America Inc., P.O. Box 5001, Greenwood, SC 29648; Toll Free Tel: 800-888-3589; Fax: 800-388-1329; Web: www.VELUXusa.com
- B. Substitutions: Not permitted

2.02 MATERIALS

- A. Maintenance-free Exterior Aluminum Frame and Covers: Roll-formed 15 gauge, 1.5-mm (0.06") thick, prefinished neutral gray, production engineered and fabricated to fit.
- B. Field Fasteners: (flashing to roof decking) 2" and 1-1/4" ring shank nails coated with double hot-dipped zinc provided with skylight.

C. Dual sealed Glazing

- a. Dual sealed thermal pane with warm edge technology, 95% argon gas fill, and with three layers of LoE³ silver that increases visible light over standard low-e coatings while lowering the solar heat gain. The following glazing options are available:
 - i. 04 – Tempered LoE³ pane over a laminated heat strengthened interior pane with 0.030” interlayer.
 - ii. 05 – Tempered LoE³ pane over tempered interior pane.
 - iii. 06 – Tempered LoE³ pane over a laminated heat strengthened interior pane with 0.090” interlayer.

D. Manual Operator Accessories

- a. Manual control rods and extension poles available for manual operated sunscreening accessories.

E. Weather stripping: Factory applied neoprene and thermoplastic elastomeric weather stripping around entire frame, profiled to effect weather seal.

2.03 Flashing options

- A. Base flashing and skylight assembled as one complete unit.

2.04 FABRICATION

- A. Provide internal drainage of glazing spaces with exterior through gasketing to remove condensation.
- B. All units are factory glazed with structural silicone-based primary seal.

2.05 FINISHES

- A. Maintenance-free roll-formed aluminum outer frame cover with neutral gray Kynar 500 polyvinylidene fluoride resin finish.
- B. Maintenance-free flashing: Extruded aluminum with welded corners, neutral gray, baked on polyester polyamide primer and finish coats.
- C. Factory applied white pre-finish interior wood frame.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify rough opening dimensions, squareness, roof pitch, and proper orientation of skylight.

3.02 INSTALLATION

- A. Install skylight in accordance with manufacturer's installation instructions and local code requirements.
- B. Align skylight so it is free of warp or twist, maintaining dimensional tolerances.
- C. Anchor skylight to decking with ring shank nails furnished by manufacturer.
- D. Provide thermal isolation when components penetrate or disrupt building insulation. Pack fibrous insulation in rough opening to maintain continuity of thermal barriers.
- E. Coordinate attachment and seal of perimeter air and vapor barrier material.
- F. Install sunscreening products and electrical or manual controls.

3.03 Cleaning

- A. Clean exposed skylight according to manufacturer's written instructions. Touch up damage to coatings and finishes.
- B. Remove excess sealants, dirt, and other substances.
- C. During the construction process, protect the skylight surfaces from contact with contaminants.

3.04 Field Quality Control

- A. Install skylight and accessories in accordance with manufacturer's installation instructions.