

VELUX America Inc.
SPECIFICATION FOR MODEL FCM
FIXED CURB MOUNT SKYLIGHT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Production fabricated, fixed, structurally glazed, curb mount skylight with maintenance free, roll-formed aluminum exterior frame, as indicated on window schedule.

1.02 REFERENCE STANDARDS

A. ANSI/ASTM E 283 - Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.

B. ANSI/ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

C. ANSI/ASTM E 331 - Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Static Air Pressure Difference.

D. AAMA/WDMA/ 1600/IS7 - Voluntary Specifications for Skylights.

E. ANSI/ASTM E 1886 – Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials. (impact glazing only)

F. ANSI/ASTM E 1996-02 – Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Storm Shutters Impacted by Windborne Debris in Hurricanes. (impact glazing only)

G. ICBO Evaluation Services Acceptance Criteria AC 17 – Acceptance Criteria for Sloped Glass Glazing in Solariums, Patio Covers, and Prefabricated Skylights.

H. National Fenestration Rating Council, NFRC –100, Procedure for Determining Fenestration Product U-factors.

I. National Fenestration Rating Council, NFRC – 200, Procedure for Determining Fenestration Product Solar Heat Gain Coefficients at Normal Incidence.

J. Occupational Safety & Health Administration, OSHA (Standards – 29 CFR 1910.23, Guarding Floor and Wall Openings and Holes.

1.03 QUALITY ASSURANCE

A. Curb mount skylight with maintenance free exterior roll-formed aluminum frame and components required for complete and weatherproof installation shall be manufactured to the highest standards of quality and craftsmanship in accordance with VELUX Manufacturing Standards.

B. Warranty by the manufacturer for 20 years on the insulated glass unit performance as described in the manufacturers published literature, 10 year warranty on all factory glazed unit components as described in manufacturers published literature.

1.04 SYSTEM DESCRIPTION

A. Skylight: Structurally glazed, roll-formed aluminum frame, maintenance free, production fabricated glazing and anchorage.

B. Configuration: Fixed, curb mount.

1.05 PERFORMANCE REQUIREMENTS

A. Nation Evaluation Report NER –550 : Model FCM fixed curb mount skylight to withstand dead and live loads caused by pressure and uplift of wind acting normal to plane of roof as tested in accordance with ICBO Evaluation Service Criteria AC-17 to a download pressure of 1.92 KPa – 5.79 KPa (40 - 121 psf) and an uplift pressure of 2.15 KPa – 5.27 KPa (45 - 110 psf) as measured in accordance with ANSI/ASTM E 330.

B. Limit member deflection to flexure limit of glass with full recovery of glazing materials.

C. System to accommodate, without damage to components or deterioration of seals, movement between I.G. unit and perimeter sealant.

D. Air leakage through assembly limited to 1.02 L/s/m² (0.2 cfm/ft²), measured at a reference differential pressure across assembly of 75 Pa (1.57 psf) as measured in accordance with AAMA/WDMA/1600/IS7 and ANSI/ASTM E 283.

E. Water infiltration: No water penetration noted when measured in accordance with AAMA/WDMA/1600/IS7 and ANSI/ASTM E 331 with a test pressure differential of 140 Pa (2.92 psf).

F. Weep drainage system designed to channel water entering joints, condensation occurring in glazing channel, or migrating moisture occurring within

system to exterior by means of sanoprene gasket with integrated condensation gutter.

G. Thermal Performance: Tested, certified and labeled in accordance with NFRC 100 and 200 procedures, Model FCM has u-factor values of 0.40 and SHGC ratings of 0.34.

H. Model FCM with impact glazing (0099 69): Tested and certified in accordance with ANSI/ASTM E 1886 and ANSI/ASTM E 1996-02.

I. Fall Protection: Model FCM with laminated glass (0074) tested to meet or exceed the intent of OSHA 29 CFR 1910.23(e)(8) for fall protection. Model FCM tested to 1400 ft/lbs with no glass breakage.

1.06 SUBMITTALS

A. Manufacturer's unit dimensions, rough opening, finished framing dimensions, affected related work, and installation requirements are shown in manufacturer's installation instructions.

B. Product Data: For Model FCM fixed curb mount skylight, sizes and glazing options are indicated in manufacturer's printed material.

1.07 DELIVERY, HANDLING, STORAGE

A. Deliver products in manufacturer's original containers dry, undamaged, seals and labels intact.

B. Store and protect products in accordance with manufacturer's recommendations.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. VELUX America Inc. product Model FCM fixed curb mount skylight as specified in this section and as manufactured by VELUX America Inc.

2.02 MATERIALS

A. Maintenance-free Exterior Aluminum Frame: Roll-formed 15 gauge, 1.5-mm (0.06") thick, prefinished umber gray, production engineered and fabricated to fit.

B. Fasteners: (Sanoprene Gasket) #6-20.783, Torx, AB Thrd., Stainless Steel

2.03 COMPONENTS

- A. Gasketing: Factory applied sanoprene gasket to effect drainage.
- B. Fasteners: (Skylight lens to curb) #8 x 1½" wood screw, #2 phillips, pan head, stainless steel (# per skylight as indicated in manufacturer's installation instructions).
- C. Flashing Accessories: Type ECL Flashings is a prefabricated step flashing system designed for use with roofing materials ¾" thick and for slopes of 3:12 (15 degrees) to 60 degrees.

2.04 GLASS AND GLAZING MATERIALS

- A. Standard structurally glazed, dual sealed insulating glass unit with 11.1 mm (0.44") air space, stainless steel spacer with desiccant, argon gas, primary seal polyisobutylene, secondary seal silicone.

- B. Description of glazing options:

Type 75 Low-E Gas Filled: Two lites 3 mm (1/8") clear tempered with 11.1 mm (0.44") airspace filled with argon gas. Low-E² coating is applied to surface #2.

Type 74 Laminated Low-E Gas Filled: Exterior lite 3 mm (1/8") clear tempered with Low-E² coating on surface #2, 11.1 mm (0.44") air space filled with argon gas, interior lite two plies of 2.3 mm (0.090") heat-strengthened laminated with 0.76 mm (0.030") vinyl interlayer.

Type 0099 10 (Snowload Glazing) Laminated Low-E Gas Filled: Exterior lite 3 mm (1/8") clear tempered with Low-E² coating on surface #2, 11.1 mm (0.44") air space filled with argon gas, interior lite two plies of 3 mm (1/8") tempered laminated with 0.76 mm (0.030") vinyl interlayer.

Type 0099 23 (White Laminated) Laminated Low-E Gas Filled: Exterior lite 3 mm (1/8") clear tempered with Low-E² coating on surface #2, 11.1 mm (0.44") air space filled with argon gas, interior lite two plies of 2.3 mm (0.090") heat-strengthened laminated with 0.76 mm (0.030") white vinyl interlayer.

Type 0099 69 (Impact Glazing) Laminated Low-E Gas Filled: Exterior lite 3 mm (1/8") clear tempered with Low-E² coating on surface #2, 11.1 mm (0.44") air space filled with argon gas, interior lite two plies of 2.3 mm (0.090") heat-strengthened laminated with 2.3 mm (0.090") vinyl interlayer.

2.05 FABRICATION

- A. Fabricate roll-formed aluminum frame with mitered corners, molded ASA UV resistant corner keys, silconed for weather tight fit.
- B. Fabricate frame components within minimum tolerances enabling installation and movement of frame and dynamic movement of perimeter sealant.
- C. Permit external drainage channels for migration of moisture to exterior. Provide internal drainage of glazing spaces to exterior through sanoprene gasket with integrated condensation gutter.
- D. All units are factory glazed with silicone sealant.

2.08 FINISHES

Exterior surfaces: Maintenance free roll-formed aluminum exterior frame with umber gray Kynar 500 polyvinylidene fluoride resin finish.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify rough opening dimensions and proper orientation of skylight.

3.02 INSTALLATION

- A. Install skylight in accordance with manufacturer's installation instructions.
- B. Align skylight level, free of warp or twist, maintain dimensional tolerances.
- C. Attach skylight to field-constructed curb with screws furnished by manufacturer to accommodate construction tolerances and other irregularities.
- 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 manufacturer's engineered perimeter flashing in accordance with manufacturer's installation instructions to achieve weather tight installation.