

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Prefabricated Fixed Skylights.

1.2 RELATED SECTIONS

- A. Section 07500 - Membrane Roofing.

1.3 REFERENCES

- A. Aluminum Association (AA):
 - 1. Specifications for Aluminum Structures.
- B. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).
 - 1. ASHRAE 90.1 - Energy Standard for Buildings Except Low-Rise Residential Buildings.
- C. ASTM International (ASTM):
 - 1. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- D. Factory Mutual System (FM Global):
 - 1. FM - Approval Guide, Chapter 18 - Building Materials.
 - 2. FM Standard 4430 - Test Criteria for Heat and Smoke Vents.
- E. National Fenestration Rating Council (NFRC):
 - 1. NFRC 100 - Procedure for Determining Fenestration Product U-Factors.
 - 2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance of Normal Incidence.
- F. North American Fenestration Standard (NAFS):
 - 1. AAMAWDMACSA101I.S.2A440 - The Voluntary Performance Specification for Windows, Skylights, and Glass Doors.

1.4 SYSTEM DESCRIPTION

- A. A fixed, XX inch by XX inch, unit skylight double glazed. Outer glazing: GE Lexan clear polycarbonate with UV protective caps on both sides. Inner glazing: GE Lexan white translucent polycarbonate and an architectural grade 6063-T5 aluminum frame and frame cap with an AAMA compliant "poured and debridged thermal break.

Skylight must be tested to: NFRC and AAMA/WDMA/CSA 101/I.S.2/A440-08 and AAMA/WDMA/CSA 101/I.S.2/A440-05.

- B. All performance criterions must be supported by test reports from an accredited, third party test laboratory. Fixed, double polycarbonate glazed, aluminum frame, curb mounted skylight.

1.5 PERFORMANCE REQUIREMENTS

- A. Skylights must conform with all federal, state and local code bodies having jurisdiction, and be designed to withstand all forces of nature deemed necessary by those code bodies for the specified project location.

- B. Plastic unit skylights shall conform to recommendations of the AA Specifications for Aluminum Structures.
- C. Skylights must be designed to carry a minimum 30 psf tributary roof load or greater per site as specified in the current International Building Code or prevailing model code.
- D. Skylights must be tested in accordance to AAMAWDMACSA1011.S.2A440 as required by Section 2405.5 of the 2003 International Building Code.
- E. Optical performance: Must have a minimum of 60% VLT (Visible Light Transmission) with 100% Haze/Diffusion.
- F. Thermal performances: Must have a maximum 0.54 SHGC (Solar Heat Gain Coefficient) and a maximum 0.55 U Factor and 1.82 R Value.
- G. Mechanical performance: Must be USA – OSHA CFRs compliant.

1.6 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Submit plan, section, elevation, and perspective drawings as necessary to depict each specified skylight. Include all flashing, connection, and termination details necessary for a proper and complete installation.
- D. Selection Samples: For each finish product specified, two samples representing manufacturer's full range of available colors and finishes.
- E. Verification Samples: For each finish product specified, provide a full size sample representing actual product, color, and finish. Upon acceptance, the sample unit(s) may be used on the project provided no damage has occurred.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten (10) years' experience.
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within

limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.10 WARRANTY

- A. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

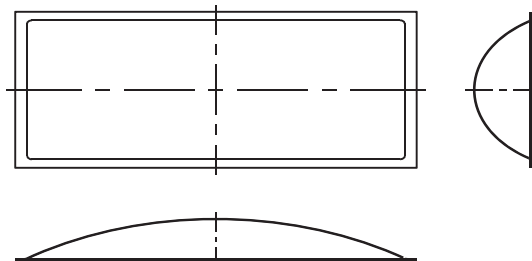
PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Bristolite Daylighting Systems, 401 E Goetz, Ave, Santa Ana, CA 92707, tele: 714.540.8950, fax: 714.540.5415, www.bristolite.com
Applicable Model: XXXX-ALT-CM-2-CPC-WPC-XX
- B. Substitutions: Not permitted.

2.2 UNIT SKYLIGHT

- A. Construction:
1. Glazing/Frame/Sealing:
 - a. Outer Glazing: The outer dome must have a radial bubble shape (as shown in Illustration 1.0 below) for maximum dawn to dusk light harvesting and must be formed from GE Lexan SGC100 Solar Grade coextruded clear polycarbonate with ultra violet light UV resistance caps on both sides, a minimum thickness of 0.118 inches and a visible light transmission (VLT) of 87.
 - b. Inner Glazing: The inner dome must be made from the same material and thickness, without UV caps and in high-white coloration to create 100% diffused light to the interior building space.
 - c. The polycarbonate specified in the specification has 30 times the impact strength of acrylic and 10 times the impact strength of impact modified (IM) acrylic. Glazings EXPLICITLY may NOT have a rib shaped design with tight radii that creates shadowing and results in restriction of light to the interior of the building. There must be a minimum 3.5 inch air space between the outer dome and inner dome to produce the low solar heat gain and excellent insulating values in the preceding performance section of this specification. To achieve maximum light transmission to the interior of the building per roof penetration the actual inside curb dimension (ICD) of the skylight may not be less than the dimensions presented in the skylight model number. For example, a 6072 model may not have less than a true 60" x 72" ICD.
 - d. Illustration 1.0 Radial Bubble Shape both Outer and Inner Domes.



- e. The dome material must be tested for and PASS: A) UBC-26-7 and ASTM D635-06 Rate-of-Burn achieving a minimum **CC1** rating. B) ASTM D-2843-99 Smoke Density Test C) ASTM D1929-96 Ignition Temperature Test (*Self Ignition*).
- f. Frame: The frame must be manufactured with 6063-T6 architectural grade aluminum. The frame dimensions must be a minimum of 0.075 inch thick, 2.25 inches in depth on the horizontal leg and 2.0 inches in depth on the vertical leg. The Frame must have an AAMA compliant thermal break whereas the aluminum on the outside of the frame is completely separated from the aluminum on the inside of the frame. The bridge between the exterior and the interior of the frame must be a long life, polyurethane thermal barrier. Styrofoam and PVC insulation is not an acceptable substitute for an AAMA compliant thermal break. The frame must be squared (90 degree corners) and flat (on one plane) by the insertion of corner stabilizers prior to full heli-arc welding. The frame must have a full perimeter condensation trough measuring a minimum of .0625 inches wide and 0.375 inches deep with a minimum of six non-clog weep holes routed to the outside of the frame.
- g. Frame cap: The frame cap must be manufactured with 6063-T6 architectural grade aluminum. Frame cap dimensions must be a minimum of 0.050 inch thick, 1.75 inches in depth on the horizontal leg and 2.0 inches in depth on the vertical leg. The frame cap must be squared and flat prior to full heli-arc welded.
- h. Sealing Gasket: The skylight must be sealed with custom formed, Monsanto UL Listed, 25 year, Santoprene Engineered Thermoplastic.

2.3 FABRICATION

- A. Skylights must be factory assembled and glazed ready for installation.
- B. Fabricate skylights weather tight and free of visual distortions and defects.
- C. Protect exterior drip / counter flashing and drainage ports from weather and air-borne debris.
- D. Miter and full penetration weld all corners of curb and retaining frames.
- E. Retaining frames that secure the glazing panels along each side under spring tension need not be welded and must be sealed with a silicone sealant along the full perimeter of the retaining frame. Skylight frames must be pre-drilled for anchorage to roof curbs.
- F. Seal glazing panels to base frame allowing for sufficient expansion and contraction. Provide exterior weep hole arrangement.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of

unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION