SECTION 08 62 23

TUBULAR SKYLIGHTS

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\*\* NOTE TO SPECIFIER \*\* Elite Solar Systems; products.  
.  
This section is based on the products of Elite Solar Systems, which is located at:  
 310 E. Comstock Dr.  
Chandler, AZ 85225   
Toll Free Tel: 866-772-5418  
Tel: 480-635-9748  
Fax: 480-635- 9767  
Email: [request info (info@elitesolarsystems.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Elite+Solar+Systems&coid=45363&rep=&fax=480-635-)  
Web: [www.elitesolarsystems.com](http://www.elitesolarsystems.com) | [www.southwestmetalspinning.com/home](http://www.southwestmetalspinning.com/home)   
 [ [Click Here](http://www.arcat.com/arcatcos/cos45/arc45363.html) ] for additional information.  
Since March 2001, in association with Southwest Metal Spinning, Elite Solar Lighting & Fans has been constant in designing and manufacturing Tubular Skylights and Solar Powered Fans with distinct features for reinforced performance. Owned and managed by a family of metal fabricators, here at Elite we use our time and energy in making these products for you to enjoy free and natural sunlight from sunrise to sunset. For more quality service and superior product, we have joint our experience to make it possible to build our own tooling, manufacture all-aluminum flashing's, trim and decorative ring's, and vacuum form our high impact dome's and diffuser's in-house.  
We manufacture our Tubular Skylights and Solar Powered Fans by maintaining quality as a priority. We believe that quality overcomes quantity. Our production is similar to a custom run, adding our personal touch to each component. Our in-house tooling and engineering allows us create truly custom applications for all products we manufacture and therefore, please both our small and large clients. We want the quality of our products to show for itself and to even better represent the company we have built.  
Our Tubular Skylights can transform any dark room or living space into a brilliant bright vivid area. Our Elite Tubular Skylights are easy to install, there is no need to make any structural changes, and are maintenance-free. No matter how big your room is we have different sizes to fit your needs.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Tubular Skylights.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 07 31 13 - Asphalt Shingles.
    2. Section 07 32 26 - Plastic Roof Tiles.
    3. Section 07 50 00 - Membrane Roofing.
    4. Section 07 51 16 - Built-Up Coal Tar Roofing.
    5. Section 07 53 29 - Polyisobutylene Roofing.
    6. Section 07 52 00 - Modified Bituminous Membrane Roofing.
    7. Section 07 60 00 - Flashing and Sheet Metal.
    8. Section 08 62 19 - Vaulted Unit Skylights.
    9. Section 08 63 19 - Vaulted Metal-Framed Skylights.
    10. Section 23 31 16.16 - Thermoset Fiberglass-Reinforced Plastic Ducts.
    11. Section 26 05 00 - Common Work Results for Electrical.
    12. Section 26 50 00 - Lighting.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
    2. ASTM D 256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
    3. ASTM D 635 - Test Method for Rate of Burning and/or Extent of Time of Burning of Self-Supporting Plastics in a Horizontal Position; 2006.
    4. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics
    5. ASTM D 696 - Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics
    6. ASTM D 785 - Test Method for Determining Rockwell Hardness of Plastic and Electrical Insulating Materials
    7. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
    8. ASTM D-1929 - Test Method for Ignition Properties of Plastics; 1996 (2001).
    9. ASTM D - 2843 - Standard Test Method for Densiy of Smoke from the Burning or Decomposition of Plastics.
    10. ICC AC-16 - Acceptance Criteria for Plastic Skylights; 2008.
    11. ICC-ES ERS-2590 - Duraplex High Impact Acrylic Sheet.
    12. Florida Building Code TAS 100 - Test Procedure for Wind and Wind Driven Rain Resistance and/or Increased Windspeed Resistance of Soffit Ventilation Strip and Continuous or Intermittent Ventilation System Installed at the Ridge Area.
    13. UL 2108 - Low Voltage Lighting Systems
    14. CSA C22.2 No. 250.0 - Luminaires.
    15. Florida Building Code TAS 201 - Impact Test Procedures.
    16. Florida Building Code TAS 202 - Criteria for Testing Impact and Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure Loading.
    17. Florida Building Code TAS 203 - Criteria for Testing Products Subject to Cyclic Wind Pressure Loading
  1. DESIGN / PERFORMANCE REQUIREMENTS
     1. Tubular Skylights:
        1. Dome: Acrylic plastic Duraplex Optix SG10 (100 percent) with UV Stabilization manufactured by Plaskolite, Inc. Material has a CC2 classification recognized in evaluation report ESR-2590
           1. Reports of tests in accordance with UBC Standard 26-5 (ASTM D 2843), UBC Standard 26-6 (ASTM D 1929) and UBC Standard 26-7 (ASTM D 635).
           2. Weathering data in accordance with the ICC-ES Acceptance Criteria for Plastic Skylights (AC16), dated February 2008.
           3. Physical Properties:

Tensile Strength: ASTM D 638; 5.600 psi

Tensile Modulus of Elasticity: ASTM D 638; 250,000 psi

Flextural Strength: ASTM D 790; 8,300 psi

Izod Impact Strength: ASTM D 256; 1.1 ft-lb/in Notch

Rockwell Hardness: ASTM D 785; M-46

Coefficent of Thermal Expansion minus 30 to 30 degrees C: ASTM D 696; 5 in/(In-degrees F) x 10-5

Flammability Rate: ASTM D 635; 1.97 In-Min.

Smoke Density Rating: ASTM D 2843; 16.5 percent.

Self Ignition Temperature: ASTM D 1929; 850 degrees F.

* + - 1. Light Tube: Aluminum PRIME SILVER, 98 percent reflectivity, resistant to moisture, corrosion and extreme temperatures.
         1. Completed tubular skylight assemblies shall be capable of meeting the following ratings:
      2. Air Infiltration: 1.5 L/s/m2 (0.3 cfm/ft2) per AAMA/WDMA/CSA 101/I.S.2/A440
      3. Water Resistance: 580 Pa (12.11 psf) per AAMA/WDMA/CSA 101/I.S.2/A440.
      4. Design pressure rating: plus or minus 9576 Pa (plus or minus 200.0psf) per AAMA/WDMA/CSA 101/I.S.2/A440.
      5. Impact Resistance: Large and Small Missile Impact rating with Missile Level D and up to Wind Zone 4 per ASTM E 1886 and ASTM E 1886 with a design pressure rating of plus or minus 9576 Pa (plus or minus 200.0 psf).
      6. High Velocity Hurricane Zone (HVHZ) qualification:
         1. Air Infiltration: 1.5 L/s/m2 (0.3 cfm/ft2) per TAS 202-94.
         2. Water Resistance: 580 Pa (12.11 psf) per TAS 202-94.
         3. Large and Small Missile Impact rating with Missile Level D and up to Wind Zone 4 per TAS 201-94 and TAS 203-94 with a design pressure rating of plus or minus 9576 Pa (plus or minus 200.0 psf)
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. 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.
     3. Shop Drawings. Submit shop drawings showing layout, profiles and product components, including anchorage, flashings and accessories.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraphs if LED device is not applicable.

* + 1. Electrical wiring diagrams for connection of LED fixtures.
    2. Verification Samples: As requested by Architect.
    3. Test Reports: Independent testing agency or evaluation service reports verifying compliance with specified performance requirements.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraphs if LEED is not applicable. Several opportunities exist for LEED credits when using daylighting systems specified. Contact Solatube International, Inc. for additional information.

* + 1. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
       1. List of Daylight Credits available for the products specified.
       2. Data on Energy Optimization Performance Credits for the products specified.
       3. Data on Perimeter and Non-Perimeter Controllability of Systems for use of Daylight Dimmer option with the products specified.
       4. Data on potential Innovation in Design Credits which may be available for the innovative use of the products specified.
    2. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
    3. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment of cable tension and periodic cleaning and maintenance of all railing and infill components.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Engaged in manufacture of tubular daylighting devices for minimum 5 years.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
       1. Finish areas designated by Architect.
       2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
       3. Refinish mock-up area as required to produce acceptable work.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Store products in manufacturer's unopened packaging until ready for installation.
     2. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
  2. SEQUENCING
     1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
     2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
  3. PROJECT CONDITIONS
     1. 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.
  4. WARRANTY
     1. Daylighting Device: Manufacturer's standard warranty for 25 years daylighting device and 3 electrical equipment.

\*\* NOTE TO SPECIFIER \*\* Delete if optional electric components are not required.

* + 1. Electrical Parts: Manufacturer's standard warranty for \_\_ years, unless otherwise indicated.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Elite Solar Systems, which is located at: 310 E. Comstock Dr.; Chandler, AZ 85225 ; Toll Free Tel: 866-772-5418; Tel: 480-635-9748; Fax: 480-635- 9767; Email: [request info (info@elitesolarsystems.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Elite+Solar+Systems&coid=45363&rep=&fax=480-635-); Web: [www.elitesolarsystems.com](http://www.elitesolarsystems.com) | [www.southwestmetalspinning.com/home](http://www.southwestmetalspinning.com/home)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Edit the following General paragraphs as required and applicable to project requirements. Delete the paragraphs that are not applicable.

* 1. TUBULAR SKYLIGHTS
     1. Model 10ETS Specifications Suspended/Hard Ceiling Application
        1. Nominal Diameter: 10 inches.
        2. Approximate Coverage Area: 150 square ft. Equivalent to 3750 Lumens
        3. Dome Assembly: Vacuum-formed, .220 inch (5.588 mm) thick, 100 percent Duraplex High-Impact Clear Acrylic Dome with UV Stabilization.
        4. Light Scatter: .125 inch (3.175 mm) thick, 100 percent High-Impact Acrylic Prismatic Disk with UV Stabilization inserts into Dome Assembly to minimize heat transfer.
        5. Dust Seal: Used between Dome Ring and Flashing, Flashing and Light Tube, and Light Tube and Trim Ring. Seal is polypropylene weatherstrip pile with adhesive backing to prevent bug, dirt and air-infiltration.
        6. Roof Flashing: One-piece, seamless, .080 inch (2.032 mm) thick Aluminum Flashing.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete those not required.

* + - * 1. Flat 4 inch (101.6 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        2. Flat 6 inch (152.4 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        3. Flat 8 inch (203.2 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        4. Pitched for 3/12 pitched roofs; can be used on higher pitch roofs with elbows.
        5. Curb inside dimensions are 17 inch (431.8 mm) by 17 inch (431.8 mm).
      1. Light Tube: Aluminum PRIME SILVER, .020 inch (0.508 mm) thickness, 98 percent reflectivity, resistant to moisture, corrosion and extreme temperatures.
         1. Tube Sections: 24 inch (609.6 mm) lengths cut to achieve desired lengths.
         2. Elbows: 45 degree Elbows, two 12 inch (304.8 mm) lengths.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two trim ring paragraphs as required for open ceiling or suspended/hard ceiling conditions and delete the one not required.

* + - 1. Diffuser/Trim Ring Open Ceiling: .063 inch (1.600 mm) thick ASTM B 209 Aluminum Ring. Ceiling mount to accommodate open ceiling applications. Provided with Industrial Trim Ring to hold Diffuser in place. Provide with diffuser as follows:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two diffuser type paragraphs as required for the project and delete the ones not required

* + - * 1. Type Double Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

* + - * 1. Type Double Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

One piece 0.60 (1.524 mm) clear formed polycarbonate diffuser

* + - 1. Diffuser/Trim Ring Suspended or Hard Ceiling: .050 inch (1.270 mm) thick Aluminum Ring. Ceiling mount to accommodate suspended or hard ceiling. Inter-locks with White Decorative Ring to hold Diffuser in place. Provide with diffuser as follows:
         1. Type Triple Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

One piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: White Diffuser, produces a softened light effect reducing glare.

One piece .100 (2.540 mm) white acrylic diffuser

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. transmitting plastic material, non-yellowing. Meets ESR-2728.
      1. Diffuser Moisture Guard: Gold Series Polyethylene Foam with 3M adhesive backing binds double glaze diffuser layers together. High resistance to mold, mildew and fungus, in addition to superior sealing and compression set resistance.
      2. Decorative Ring: .050 inch (1.27 mm) thick aluminum ring, powder coated white, pems inter-lock with trim ring to hold diffuser in place.
      3. Optional Light Kit: Elite Light Kit fits inside tubular skylight, UL and CSA Listed

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs if required for the project and delete the one not required.

* + - * 1. Single Light with daylight bulb.
        2. Double Light with daylight bulb.
        3. Electrical Requirements: 110 V, 15 amp GFCI circuit for damp and wet conditions.
    1. Model 13ETS Specifications Suspended/Hard Ceiling Application
       1. Nominal Diameter: 13 inches.
       2. Approximate Coverage Area: 250 square ft. Equivalent to 6500 Lumens
       3. Dome Assembly: Vacuum-formed, .220 inch (5.588 mm) thick, 100 percent Duraplex High-Impact Clear Acrylic Dome with UV Stabilization.
       4. Light Scatter: .125 inch (3.175 mm) thick, 100 percent High-Impact Acrylic Prismatic Disk with UV Stabilization inserts into Dome Assembly to minimize heat transfer.
       5. Dust Seal: Used between Dome Ring and Flashing, Flashing and Light Tube, and Light Tube and Trim Ring. Seal is polypropylene weatherstrip pile with adhesive backing to prevent bug, dirt and air-infiltration.
       6. Roof Flashing: One-piece, seamless, .080 inch (2.032 mm) thick Aluminum Flashing.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete those not required.

* + - * 1. Flat 4 inch (101.6 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        2. Flat 6 inch (152.4 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        3. Flat 8 inch (203.2 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        4. Pitched for 3/12 pitched roofs; can be used on higher pitch roofs with elbows.
        5. Curb inside dimensions are 20 inch (508 mm) by 20 inch (508 mm).
      1. Light Tube: Aluminum PRIME SILVER, .020 inch (0.508 mm) thickness, 98 percent reflectivity, resistant to moisture, corrosion and extreme temperatures.
         1. Tube Sections: 24 inch (609.6 mm) lengths cut to achieve desired lengths.
         2. Elbows: 45 degree Elbows, two 12 inch (304.8 mm) lengths.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two trim ring paragraphs as required for open ceiling or suspended/hard ceiling conditions and delete the one not required.

* + - 1. Diffuser/Trim Ring Open Ceiling: .063 inch (1.600 mm) thick ASTM B 209 Aluminum Ring. Ceiling mount to accommodate open ceiling applications. Provided with Industrial Trim Ring to hold Diffuser in place. Provide with diffuser as follows:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two diffuser type paragraphs as required for the project and delete the ones not required

* + - * 1. Type Double Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

* + - * 1. Type Double Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

One piece 0.60 (1.524 mm) clear formed polycarbonate diffuser

* + - 1. Diffuser/Trim Ring Suspended or Hard Ceiling: .050 inch (1.270 mm) thick Aluminum Ring. Ceiling mount to accommodate suspended or hard ceiling. Inter-locks with White Decorative Ring to hold Diffuser in place. Provide with diffuser as follows:
         1. Type Triple Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

One piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: White Diffuser, produces a softened light effect reducing glare.

One piece .100 (2.540 mm) white acrylic diffuser

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - 1. Diffuser Moisture Guard: Gold Series Polyethylene Foam with 3M adhesive backing binds double glaze diffuser layers together. High resistance to mold, mildew and fungus, in addition to superior sealing and compression set resistance.
      2. Decorative Ring: .050 inch (1.27 mm) thick aluminum ring, powder coated white, pems inter-lock with trim ring to hold diffuser in place.
      3. Optional Light Kit: Elite Light Kit fits inside tubular skylight, UL and CSA Listed

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs if required for the project and delete the one not required.

* + - * 1. Single Light with daylight bulb.
        2. Double Light with daylight bulb.
        3. Electrical Requirements: 110 V, 15 amp GFCI circuit for damp and wet conditions.
    1. Model 18ETS Specifications Suspended/Hard Ceiling Application
       1. Nominal Diameter: 18 inches.
       2. Approximate Coverage Area: 500 square ft. Equivalent to 111000 Lumens
       3. Dome Assembly: Vacuum-formed, .220 inch (5.588 mm) thick, 100 percent Duraplex High-Impact Clear Acrylic Dome with UV Stabilization.
       4. Light Scatter: .125 inch (3.175 mm) thick, 100 percent High-Impact Acrylic Prismatic Disk with UV Stabilization inserts into Dome Assembly to minimize heat transfer.
       5. Dust Seal: Used between Dome Ring and Flashing, Flashing and Light Tube, and Light Tube and Trim Ring. Seal is polypropylene weatherstrip pile with adhesive backing to prevent bug, dirt and air-infiltration.
       6. Roof Flashing: One-piece, seamless, .080 inch (2.032 mm) thick Aluminum Flashing.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete those not required.

* + - * 1. Flat 4 inch (101.6 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        2. Flat 6 inch (152.4 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        3. Flat 8 inch (203.2 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        4. Pitched for 3/12 pitched roofs; can be used on higher pitch roofs with elbows.
        5. Curb inside dimensions are 24-1/2 inch (622.3 mm) by 24-1/2 inch (622.3 mm).
      1. Light Tube: Aluminum PRIME SILVER, .020 inch (0.508 mm) thickness, 98 percent reflectivity, resistant to moisture, corrosion and extreme temperatures.
         1. Tube Sections: 24 inch (609.6 mm) lengths cut to achieve desired lengths.
         2. Elbows: 30 degree Elbows, two 12 inch (304.8 mm) lengths.
         3. OPTION Elbows: 45 degree Elbows, two 12 inch (304.8 mm) lengths.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two trim ring paragraphs as required for open ceiling or suspended/hard ceiling conditions and delete the one not required.

* + - 1. Diffuser/Trim Ring Open Ceiling: .063 inch (1.600 mm) thick ASTM B 209 Aluminum Ring. Ceiling mount to accommodate open ceiling applications. Provided with Industrial Trim Ring to hold Diffuser in place. Provide with diffuser as follows:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two diffuser type paragraphs as required for the project and delete the ones not required

* + - * 1. Type Double Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

* + - * 1. Type Double Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

One piece 0.60 (1.524 mm) clear formed polycarbonate diffuser

* + - 1. Diffuser/Trim Ring Suspended or Hard Ceiling: .063 inch (1.60 mm) thick Aluminum Ring. Ceiling mount to accommodate suspended or hard ceiling. Inter-locks with White Decorative Ring to hold Diffuser in place. Provide with diffuser as follows:
         1. Type Triple Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

One piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: White Diffuser, produces a softened light effect reducing glare.

One piece .100 (2.540 mm) white acrylic diffuser

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - 1. Diffuser Moisture Guard: Gold Series Polyethylene Foam with 3M adhesive backing binds double glaze diffuser layers together. High resistance to mold, mildew and fungus, in addition to superior sealing and compression set resistance.
      2. Decorative Ring: .063 inch (1.60 mm) thick aluminum ring, powder coated white, pems inter-lock with trim ring to hold diffuser in place.
      3. Optional Light Kit: Elite Light Kit fits inside tubular skylight, UL and CSA Listed

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs if required for the project and delete the one not required.

* + - * 1. Single Light with daylight bulb.
        2. Double Light with daylight bulb.
        3. Electrical Requirements: 110 V, 15 amp GFCI circuit for damp and wet conditions.
    1. Model 21ETS Specifications Suspended/Hard Ceiling Application
       1. Nominal Diameter: 21 inches.
       2. Approximate Coverage Area: 500 square ft. Equivalent to 13900 Lumens
       3. Dome Assembly: Vacuum-formed, .220 inch (5.588 mm) thick, 100 percent Duraplex High-Impact Clear Acrylic Dome with UV Stabilization.
       4. Light Scatter: .125 inch (3.175 mm) thick, 100 percent High-Impact Acrylic Prismatic Disk with UV Stabilization inserts into Dome Assembly to minimize heat transfer.
       5. Dust Seal: Used between Dome Ring and Flashing, Flashing and Light Tube, and Light Tube and Trim Ring. Seal is polypropylene weatherstrip pile with adhesive backing to prevent bug, dirt and air-infiltration.
       6. Roof Flashing: One-piece, seamless, .080 inch (2.032 mm) thick Aluminum Flashing.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete those not required.

* + - * 1. Flat 6 inch (152.4 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        2. Flat 8 inch (203.2 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        3. Flat 9 inch (228.6 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        4. Pitched for 3/12 pitched roofs; can be used on higher pitch roofs with elbows.
        5. Curb inside dimensions are 27-3/8 inch (695.3 mm) by 27-3/8 inch (695.3 mm).
      1. Light Tube: Aluminum PRIME SILVER, .020 inch (0.508 mm) thickness, 98 percent reflectivity, resistant to moisture, corrosion and extreme temperatures.
         1. Tube Sections: 24 inch (609.6 mm) lengths cut to achieve desired lengths.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two elbow paragraphs and delete the one not required

* + - * 1. Elbows: 30 degree Elbows, two 12 inch (304.8 mm) lengths.
        2. Elbows: 45 degree Elbows, two 12 inch (304.8 mm) lengths.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two trim ring paragraphs as required for open ceiling or suspended/hard ceiling conditions and delete the one not required.

* + - 1. Diffuser/Trim Ring Open Ceiling: .063 inch (1.600 mm) thick ASTM B 209 Aluminum Ring. Ceiling mount to accommodate open ceiling applications. Provided with Industrial Trim Ring to hold Diffuser in place. Provide with diffuser as follows:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two diffuser type paragraphs as required for the project and delete the ones not required

* + - * 1. Type Double Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

* + - * 1. Type Double Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

One piece 0.60 (1.524 mm) clear formed polycarbonate diffuser

* + - 1. Diffuser/Trim Ring Suspended or Hard Ceiling: .080 inch (2.03 mm) thick Aluminum Ring. Ceiling mount to accommodate suspended or hard ceiling. Inter-locks with White Decorative Ring to hold Diffuser in place. Provide with diffuser as follows:
         1. Type Triple Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

One piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: White Diffuser, produces a softened light effect reducing glare.

One piece .100 (2.540 mm) white acrylic diffuser

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - 1. Decorative Ring: .080 inch (2.032 mm) thick aluminum ring, powder coated white, pems inter-lock with trim ring to hold diffuser in place.

\*\* NOTE TO SPECIFIER \*\* Select the following optional Office Kit for hard ceilings and applicable on suspended/drop ceilings. Available in 21 inch units only. Delete if not required.

* + - 1. Luminaria Square Ceiling Kit: Dual Diffuser 2 foot by 2 foot office kit for suspended/drop ceilings.

\*\* NOTE TO SPECIFIER \*\* Select one of the following diffuser material paragraphs and delete those not required

* + - * 1. Prismatic Diffuser:

One piece .118 (2.997 mm) prismatic formed clear skylight polycarbonate diffuser.

Two piece .060 (1.524 mm) prismatic clear formed polycarbonate diffuser.

* + - * 1. MaxLum Diffuser:

One piece .118 (2.997 mm) MaxLum acrylic diffuser (Impact modified acrylic)

Two piece .060 (1.524 mm) MaxLum clear formed polycarbonate diffuser

* + - 1. Diffuser Moisture Guard: Gold Series Polyethylene Foam with 3M adhesive backing binds double glaze diffuser layers together. High resistance to mold, mildew and fungus, in addition to superior sealing and compression set resistance.
      2. Optional Light Kit: Elite Light Kit fits inside tubular skylight, UL and CSA Listed

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs if required for the project and delete the one not required.

* + - * 1. Single Light with daylight bulb.
        2. Double Light with daylight bulb.
        3. Electrical Requirements: 110 V, 15 amp GFCI circuit for damp and wet conditions.
    1. Model 24ETS Specifications Suspended/Hard Ceiling Application
       1. Nominal Diameter: 24 inches.
       2. Approximate Coverage Area: 600 square ft. Equivalent to 16500 Lumens
       3. Dome Assembly: Vacuum-formed, .220 inch (5.588 mm) thick, 100 percent Duraplex High-Impact Clear Acrylic Dome with UV Stabilization, CC2 light-transmitting plastic material, non-yellowing. Mounted and sealed to .080 inch (2.032 mm) thick Aluminum Dome Ring. Dome Assembly engineered to eliminate heat and moisture. Meets ESR-2590.
       4. Light Scatter: .125 inch (3.175 mm) thick, 100 percent High-Impact Acrylic Prismatic Disk with UV Stabilization inserts into Dome Assembly to minimize heat transfer.
       5. Dust Seal: Used between Dome Ring and Flashing, Flashing and Light Tube, and Light Tube and Trim Ring. Seal is polypropylene weatherstrip pile with adhesive backing to prevent bug, dirt and air-infiltration.
       6. Roof Flashing: One-piece, seamless, .080 inch (2.032 mm) thick Aluminum Flashing.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete those not required.

* + - * 1. Flat 8 inch (203.2 mm) height with 4 inch (101.6 mm) wide base to seal securely onto roof.
        2. Curb inside dimensions are 30-3/8 inch (771.5 mm) by 30-3/8 inch (771.5 mm).
      1. Light Tube: Aluminum PRIME SILVER, .020 inch (0.508 mm) thickness, 98 percent reflectivity, resistant to moisture, corrosion and extreme temperatures.
         1. Tube Sections: 24 inch (609.6 mm) lengths cut to achieve desired lengths.
         2. Elbows: 30 degree Elbows, two 12 inch (304.8 mm) lengths.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two trim ring paragraphs as required for open ceiling or suspended/hard ceiling conditions and delete the one not required.

* + - 1. Diffuser/Trim Ring Open Ceiling: .063 inch (1.600 mm) thick ASTM B 209 Aluminum Ring. Ceiling mount to accommodate open ceiling applications. Provided with Industrial Trim Ring to hold Diffuser in place. Provide with diffuser as follows:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two diffuser type paragraphs as required for the project and delete the ones not required

* + - * 1. Type Double Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

* + - * 1. Type Double Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

One piece 0.60 (1.524 mm) clear formed polycarbonate diffuser

* + - 1. Diffuser/Trim Ring Suspended or Hard Ceiling: .050 inch (1.270 mm) thick Aluminum Ring. Ceiling mount to accommodate suspended or hard ceiling. Inter-locks with White Decorative Ring to hold Diffuser in place. Provide with diffuser as follows:
         1. Type Triple Glazed: Prismatic Polycarbonate Diffuser distributes light evenly throughout the desired location.

One piece .118 inch (2.997 mm) prismatic Formed clear skylight diffuser

One piece.060 inch (1.524 mm) clear flat diffuser

One piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: MaxLum Diffuser provides an intense lighting effect, more suitable for ceiling heights taller than 12 feet.

One piece .100 (2.540 mm) MaxLum acrylic diffuser (Impact modified acrylic)

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - * 1. Type Triple Glazed: White Diffuser, produces a softened light effect reducing glare.

One piece .100 (2.540 mm) white acrylic diffuser

Two piece.060 inch (1.524 mm) clear formed diffuser

* + - 1. Diffuser Moisture Guard: Gold Series Polyethylene Foam with 3M adhesive backing binds double glaze diffuser layers together. High resistance to mold, mildew and fungus, in addition to superior sealing and compression set resistance.
      2. Decorative Ring: .080 inch (2.032 mm) thick aluminum ring, powder coated white, pems inter-lock with trim ring to hold diffuser in place.
      3. Optional Light Kit: Elite Light Kit fits inside tubular skylight, UL and CSA Listed

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs if required for the project and delete the one not required.

* + - * 1. Single Light with daylight bulb.
        2. Double Light with daylight bulb.
        3. Electrical Requirements: 110 V, 15 amp GFCI circuit for damp and wet conditions.
  1. ACCESSORlES
     1. Fasteners: Same material as metals being fastened, non-magnetic steel, non-corrosive metal of type recommended by manufacturer, or injection molded nylon.
     2. Foil Tape: Shurtape AF973 Aluminum Foil Tape,
     3. Suspension Wire: Steel, annealed, galvanized finish, size and type for application and ceiling system requirement.
     4. Sealant: Sil-Flex 7500 silicone elastomeric sealant as provided or recommended by manufacturer.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
      3. Coordinate requirements for power supply, conduit and wiring.
   3. INSTALLATION
      1. Install in accordance with manufacturer's printed instructions.
      2. Installation must be in accordance with the manufacturer's published installation instructions, this specification, and Sections 2405 and 2610.3 of the IBC, Section 308.6 of the IRC, or Sections 2409 and 2603.7.1 of the UBC, as applicable.
      3. After installation of first unit, field test to determine adequacy of installation. Conduct water test in presence of Owner, Architect, or Contractor, or their designated representative. Correct if needed before proceeding with installation of subsequent units.
      4. Inspect installation to verify secure and proper mounting. Test each fixture to verify operation, control functions, and performance. Correct deficiencies.
   4. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION