



## SECTION 08625

### TUBULAR DAYLIGHT DEVICE

#### 254mm LED LIGHT KIT SPECIFICATION

TO BE USED IN CONJUNCTION WITH NATURAL LIGHT ENERGY SYSTEMS TUBULAR DAYLIGHTING DEVICE SPECIFICATION

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Natural Light Energy Systems Light Kit, 254mm to 330.2mm expander, LED light bulb, wiring.

##### 1.2 RELATED SECTIONS

- A. Section 16150 - Equipment Wiring: Electrical connections.
- B. Section 16500 – Lighting Equipment and Controls: Light bulbs and lamps.

##### 1.3 REFERENCES

- A. UL 60730 - Automatic Electrical Controls for Household and Similar Use
- B. ASTM E 308 - Standard Practice for Computing the Colors of Objects by Using the CIE System; 2006.
- C. UL 2108 - Low Voltage Lighting Systems.
- D. CSA C22.2 No. 250.0 – Luminaires.

##### 1.4 PERFORMANCE REQUIREMENTS

Natural Light Energy Systems LED Light Kit, shall meet the following performance requirements:

- A. Light Kit: Shall be UL Listed and manufactured of a hollow corrosive resistant zinc tube, shall be 9.53mm in diameter and 254mm long. At one end of the zinc tube shall be a medium sized E26 style light bulb fitting. A wire shall run the length of the zinc tube with enough overrun to be able to make a safe connection. The light kit shall be mechanically mounted to the light pipe by being placed through a hole in the light pipe, until the light bulb fitting is in the desired location within the light pipe, and then secured with locking bolts and a faceplate that will clamp to the light pipe.

- B. 254mm – 330.2mm Expander: Shall be made of highly reflective light pipe material. The expander will be narrowest at the top where it will have a diameter of 254mm. 152.4mm from the top, the expander will begin to taper to its widest point, where the diameter will be 330.2mm. The expander shall terminate 50.8mm from the bottom of the taper.
- C. LED Light Bulb: Shall operate on 220 volts, require 6 watts of energy, and produce equivalent light output to that of a 40W traditional light bulb. The fitting type shall be E26. The bulb shall be rated to last a minimum of 20,000 hours. The color temperature of the light bulb shall be 2700K (soft white).

## 1.5 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.
- B. Shop Drawings. Submit shop drawings showing layout, profiles and product components, including anchorage, flashings and accessories.
- C. Electrical wiring diagrams for connection of Light Kit.
- D. Verification Samples: As requested by Architect.
- E. Test Reports: Independent testing agency or evaluation service reports verifying compliance with specified performance requirements.
- F. 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.

## 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Engaged in manufacture of tubular daylighting devices for minimum 15 years.

## 1.7 DELIVERY, STORAGE, AND HANDLING

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

## 1.8 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.

## 1.9 WARRANTY

- A. Daylighting Device: Manufacturer's standard warranty for 25 years.
- B. Electrical Parts: Manufacturer's standard warranty for 5 years, unless otherwise indicated.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable manufacturer: Natural Light Energy Systems, 10821 N. 23<sup>rd</sup> Avenue, Phoenix, Arizona, 85304.
- B. Substitutions: Not permitted.

### 2.2 ACCESSORIES

- A. Fasteners: To be supplied by the manufacturer. Same material as the metal being fastened, or non-corrosive metal.
- B. Sealant: To be supplied by the manufacturer.

## 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.
- C. Coordinate requirements for power supply, conduit and wiring.

### 3.3 INSTALLATION

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

- C. Inspect installation to verify secure and proper mounting. Test each fixture to verify operation, control functions, and performance. Correct deficiencies.