



SECTION 08625

TUBULAR DAYLIGHT DEVICE

254mm DIMMER 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 Daylight Dimming System, damper, 304.8mm Section of Light Pipe, 90-240V motor, wiring.

1.2 RELATED SECTIONS

- A. Section 16150 – Equipment Wiring: Electrical connections.

1.3 REFERENCES

- A. UL 60730 - Automatic Electrical Controls for Household and Similar Use
- B. CSA C22.2 No. 24 - 93

1.4 PERFORMANCE REQUIREMENTS

Natural Light Energy Systems Daylight Dimming System, shall meet the following performance requirements:

- A. Dimmer Housing: shall be manufactured of one piece of highly reflective aluminum light pipe material. The light pipe will be rolled into a hollow cylinder, 10” in diameter and 12” tall. There shall be 2 holes of 12.7mm in the cylinder, at the mid-point vertically and at 180 degrees from one another.
- B. Dimmer Damper: The dimmer damper shall be made of two circular pieces of highly reflective light pipe material of 247.65mm diameter placed back to back and riveted together. Sandwiched between the two circular pieces of light pipe shall be plastic disc and a horsehair gasket light block with a pile height of 9.525mm. The dimmer damper shall be riveted to and rotate about a aluminum spandrel of 9.53mm diameter, which will be mounted through 9.53mm plastic bearings in both holes in the dimmer housing and be operated by the dimmer motor. The dimmer damper shall allow no more than 0.2% light to pass through the tubular daylighting device when it is in the fully closed position.

- C. Dimmer Motor: A two directional UL approved motor shall allow the dimmer damper to rotate from its fully open position at 0 degrees, to its fully closed position at 90 degrees and back to 0 degrees. By use of a three position (on-off-on) wall switch the damper may be stopped at any point along its 0-90 degree path. The motor has operating voltage range between 110-240 Volt AC, with a voltage drop tolerance of +/- 20%. The 90 degree run time is approximately 35 seconds. Up to 15 dimmers can be connected in parallel from one wall switch utilizing minimum 18 gauge copper wire.

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.
- A. Shop Drawings. Submit shop drawings showing layout, profiles and product components, including anchorage, flashings and accessories.
- B. Electrical wiring diagrams for connection of motor.
- C. Verification Samples: As requested by Architect.
- D. Test Reports: Independent testing agency or evaluation service reports verifying compliance with specified performance requirements.
- G. 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. Quality Assurance certificates are updated annually by authorized independent agency.

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 Dimming Device: Manufacturer's warranty for 10 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, 10821N. 23rd 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.