

Section 16510

LIGHTING FIXTURES

PART 1 GENERAL

1.03 SECTION INCLUDES

- A. Specification for:
 - 1. High intensity discharge (HID) lighting fixtures
 - 2. Photo cells

1.04 REFERENCES

- A. American National Standards Institute/National Fire Protection Association (ANSI/NFPA)
 - 1. No. 70 - National Electrical Code (NEC)
 - a. Article 410 - Lighting Fixtures, Lampholders, Lamps and Receptacles
 - b. Article 500 - Hazardous (classified) locations
 - c. Article 700 - Emergency Systems
 - 2. No. 101 - Life Safety Code
- B. American National Standards Institute (ANSI)
 - 1. C78.379 - Electric Lamps - Incandescent and High Intensity discharge Reflector Lamps - Classification of Beam Patterns.
 - 2. C82.1 - Ballasts for Fluorescent Lamps - Specifications.
 - 3. C82.4 - Ballasts for High-Intensity-Discharge and Low-Pressure Sodium Lamps (Multiple-Supply Type).
- C. American National Standards Institute/Illuminating Engineering Society (ANSI/IES): The IES Handbook shall be used as a basis for design and construction of lighting systems.
- D. American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc./Illuminating Engineering Society (ASHRAE/IES): ASHRAE/IES 90.1 - 1989 - Energy Efficient Design of new Buildings Except Low-Rise Residential Buildings.

- E. American National Standards Institute/Underwriters Laboratories (ANSI/UL).
 - 1. UL1570 - Fluorescent Lighting Fixtures.
 - 2. UL1571 - Incandescent Lighting Fixtures.
 - 3. UL1572 - High Intensity Discharge Lighting Fixtures.
 - 4. UL844 - Fixtures for Hazardous Areas.

1.05 SUBMITTALS

- A. Submit the following under the provisions of Section 01300 – Submittal Procedures:
 - 1. Outline dimensions, support points and unit weight.
 - 2. Operation and maintenance data.
 - 3. Complete test report with photometric curves.
 - 4. Storage, handling, and installation recommendation.
 - 5. Connection diagrams.
 - 6. Catalog data.

1.06 QUALITY ASSURANCE

- A. Tests. Run manufacturer's tests on lighting fixtures in accordance with applicable Underwriters Laboratories (U.L.) Standards 1570, 1571 and 1572.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Have lighting fixtures individually packed to permit ease of handling and to provide protection from damage during shipping, handling and storage.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Benjamin Div., Thomas Industries
- B. Crouse-Hinds, Div. of Cooper Industries
- C. G.E. Lighting System

- D. Guth Lighting
- E. Holophane Company, Inc.
- F. Hubbell Lighting, Inc.
- G. Killark Electric Mfg. Company
- H. Lithonia Lighting
- I. Pauluhn Electric
- J. Wide-Lite Corporation
- K. Dual-Lite Company

2.02 REQUIREMENTS

- A. Provide lighting fixtures in accordance with the lighting plan Drawings, Lighting Fixture Schedules and this specification. Such fixtures shall be shielded to assure that there is no direct horizontal distribution of lighting from the fixture.
- B. High-Intensity Discharge (HID) Fixtures
 - 1. Provide fixtures that are High Pressure Sodium (HPS) type.
 - 2. Select fixtures which are enclosed and gasketed with mogul base porcelain lamp socket.
 - 3. Use ballast high power factor type with taps for 120V, 208V and 277V input voltage, conforming to ANSI Standard C82.4.
 - 4. Refer to Drawings or fixture schedules specific types, sizes and mounting hardware.
- C. Photo Cells
 - 1. Provide a photo cell to control outdoor fixtures unless otherwise indicated on the lighting plans.
 - 2. Use a photo cell that is either the plug-in twist-locking type or the wire-in swivel-top type, both with similar features and operating characteristics.
 - 3. Provide a photo cell that is enclosed in a UV-resistant rain-tight polypropylene housing with the cell being a 0.75 square inch cadmium sulfide surface passivated and a single pole, single throw normally closed bi-metallic switch.

PART 3 EXECUTION

3.01 PREPARATION

- A. Check the types and quantity of fixtures to be mounted in the area to be illuminated and verify that materials are on hand.
- B. Pick out the correct bulbs for the fixtures along with the necessary accessories and mounting hardware.

3.02 INSTALLATION

- A. Install fixtures in accordance with manufacturer's instructions, NEC Articles 410, 500 and 700 as applicable, and the Drawings.
- B. Wire up fixtures in accordance with the Drawings and ensure proper switching, circuiting and balanced loads.
- C. Make sure proper grounding and bonding are provided for fixtures and raceways.
- D. Install specified lamps in each fixture.
- E. When applicable, aim and adjust fixtures in accordance with directions as indicated on the Drawings.
- F. Energize and test fixtures for proper operation.
- G. Check the illumination level with a light meter and ensure that sufficient light is reaching areas where tasks are performed and that egress paths are properly illuminated during emergency situations.

END OF SECTION