

SECTION 263000

LIGHTING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. All work in this Section shall comply with the provisions of Section 260100.
- B. Provide all lighting fixtures and lamps as specified herein and as shown.
- C. All lamps shall be operating at the time of the final inspection and for a period of six (6) months after the final acceptance of the project by the Owner.
- D. Confirm exact locations of all lighting fixtures by coordination with the Architects Reflected Ceiling Plans and mechanical equipment above or on the ceiling.
- E. Confirm all ceiling types before ordering lighting fixtures.
- F. Each lighting fixture shall have been tested and certified for proper operation by the fixture manufacturer for the type mounting and ceiling on/in, which it is installed.

PART 2 - PRODUCTS

2.1 LIGHTING FIXTURES

- A. Each lighting fixture shall be as specified in the Lighting Fixture Schedule corresponding with its fixture type indication (letter).
- B. Most lighting outlets are lettered or groups of outlets are indicated by a letter.
- C. Each lighting fixture shall have a manufacturer's label affixed and shall comply with the requirements of all authorities having jurisdiction.
- D. The lighting fixtures that are indicated by the letters shall be as indicated on the Lighting Fixture Schedule.
- E. Emergency fixtures shall have a permanent solid red circle affixed to the frame.

2.2 LAMPS

- A. All LED fixtures shall be equipped with LEDs integral to fixture.

2.3 LED LIGHTING FIXTURES

- A. LED lamps for interior use shall be 3500K, CRI 80 (min.), unless noted otherwise by lighting designer. Color temperature chromaticity over the lifetime of the product shall be within 0.007 on the CIE 1976 (u',v') diagram.
- B. System shall be rated at a minimum for 50,000 hours (min.) at 70% lumen maintenance (L80).
- C. System shall comply with the following:
 - 1. ENERGY STAR® SSL Requirements for Luminaires
 - 2. IESNA LM-16

3. IESNA LM-58-94
4. IESNA LM-79
5. IESNA LM-80
6. ANSI C82.2-2002
7. ANSI C82.77-2002
8. ANSI C78.377-2008
9. CIE 13.3-1995
10. CIE 15-2002
11. ANSI/UL 153
12. UL 1598

- D. LED boards and drivers shall be provided with plug-in connections for tool-less replacement of components.
- E. Compatibility of dimming switches for control of dimmable LED drivers shall be confirmed with LED fixture manufacturer.

2.4 LED DRIVERS

- A. Drivers shall be replaceable with removal of the fixture, and shall be rated for 50,000 hours minimum.
- B. Drivers shall have a minimum power factor of 0.90.
- C. Drivers shall have less than 20% Total Harmonic Distortion.
- D. Drivers shall have Class "A" sound rating.
- E. Drivers shall come standard with 0-10V dimming.

2.5 LIGHT FIXTURE TRIM

- A. Each recessed lighting fixture shall have a trim to match the type of ceiling (plaster, exposed grid, concealed spline, exposed panel, etc.) in which it is being installed, regardless of catalog number given. Coordinate with the Architect's reflected ceiling plan to provide the right trim for the type of ceiling the fixture is to be installed in.
- B. Each lighting fixture recessed in a plastered ceiling of any type shall have a plaster frame.

PART 3 - EXECUTION

3.1 SUPPORT OF LIGHTING FIXTURES

- A. All lighting shall be supported from the building structure. The fixtures shall be supported in a manner that will insure the fixture weight being equally distributed from each support and the fixture remaining in a level position.
- B. Light fixtures installed recessed in a suspended ceiling system shall be supported from the building structure with two (2) 12 gauge wires on diagonal corners of the fixture. In addition, the fixture shall be clipped to members of the ceiling suspension system.
- C. Light fixtures installed in or on any ceiling other than a suspended ceiling system specifically mentioned above shall be supported with concealed steel rods. Rods shall be 1/4" diameter minimum and shall be located where recommended by the fixture manufacturer. Provide a minimum of two (2) supports for each 4' or 8' fixture chassis. Supports shall be maximum of 48" centers.

- D. Pendant mounted fixtures shall be stem supported by a fixture stud mounted in the outlet box. Suspended fixtures shall have mounting stems located as per the manufacturer's recommendations, but in no case shall have less than two (2) stems per chassis.

3.2 AIMING OF ADJUSTABLE LIGHT FIXTURES

- A. All fixtures with lamp position, tilt, shutters, rotation, or other types of adjustments during the final inspection. Fixtures serving areas where day lighting is predominant will be adjusted after sunset.

3.3 LIGHTING FIXTURES IN MILLWORK

- A. Special attention shall be given to lighting fixtures indicated to be mounted within, under, on or otherwise incorporated into millwork or cabinetry.
- B. Refer to the Architectural drawings and details for specific dimensions. This coordination shall occur prior to ordering fixtures to assure fixtures will fit the space limitations of the millwork.
- C. This requirement is intended to preclude incurring additions to the Contract due to fixtures being too small or too large for the space.

3.4 FINAL PREPARATION

- A. All plastic covers shall be removed from all fixtures.
- B. Clean all lens and reflectors from debris, fingerprints, dust, etc.

END OF SECTION 263000

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