

SECTION 265100- LUMINAIRES

PART 1 - GENERAL

1.1 WORK INCLUDES

- A. Contractor provide:
 - 1. Luminaires.
 - 2. Exit signs.
 - 3. Emergency lighting units.
 - 4. Lamps.
 - 5. LED drivers.
 - 6. Luminaire accessories.

1.2 RELATED SECTIONS

- A. Division 1 – Submittal Procedures.
- B. Section 260519 – Building Wire and Cable.
- C. Section 260534 – Boxes.
- D. Section 262726 – Wiring Devices; wall dimmers.
- E. Section 260529 – Supporting Devices.

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code, 2008 edition.
- B. ANSI/NFPA 101 - Life Safety Code.
- C. NEMA WD 6 - Wiring Devices-Dimensional Requirements.
- D. IBC 2009 - National Building Code: seismic hazard and performance.
- E. IES LM79 and LM80

1.4 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Shop Drawings: Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- C. Product Data: Provide dimensions, ratings, and performance data. Provide submittals on lamp

types to be installed.

- D. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.
- E. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation, and installation of product. Include a summary of lamp replacements for each fixture type, including wattage, quantity, and color temperature.

1.5 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of each luminaire.
- B. Include luminaire and lamp cutsheets for each luminaire type in O&M documents.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Conform to requirements of NFPA 101- Life Safety Code.
- C. Furnish products listed and classified by UL as suitable for purpose specified and shown.

1.8 WARRANTY

- A. Provide 5 year warranty for Electronic Fluorescent Ballasts.

PART 2 - PRODUCTS

2.1 LUMINAIRES

- A. Furnish products as specified on Drawings.
- B. Substitutions shall not be accepted unless submitted to the Architect/Engineer minimum two weeks prior to the bid date.
- C. Install ballasts, lamps, and specified accessories at factory.

2.2 EXIT SIGNS

- A. Furnish LED type exit lights as specified on Drawings.
- B. Substitutions shall not be accepted unless submitted to the Architect/Engineer minimum two weeks prior to the bid date.
- C. Install all specified accessories at factory.

2.3 EMERGENCY LIGHTING UNITS

- A. Conform to UL 924, "Emergency Lighting and Power Equipment" requirements for "Unit Equipment." Provide self-contained units with the following features and additional characteristics as indicated.
- B. Battery: Sealed, maintenance-free, lead-acid type with 10 year nominal life minimum and special project warranty.
- C. Charger: Minimum two-rate, fully-automatic, solid-state type, with sealed transfer relay.
- D. Operation: Relay automatically turns lamp on when supply circuit voltage drops to 80-percent of nominal or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. Relay disconnects lamps and battery automatically recharges and floats on trickle charge when normal voltage is restored.
- E. Time-Delay Relay: Provide time-delay relay in emergency lighting unit control circuit arranged to hold unit "on" for fixed interval after restoration of power from an outage.
- F. Substitutions shall not be accepted unless submitted to the Architect/Engineer minimum two weeks prior to the bid date.

2.4 LAMPS

- A. LED lamps
 - 1. Color temperature (per fixture): Binning shall be +/- 50K from specified fixture color temperature. Provide color temperature as indicated in luminaire schedule.
 - 2. Minimum 80 CRI.
 - 3. Standard(s) LM79 and LM80 compliant.
 - 4. Alternate lumen outputs to those specified on the drawings will not be considered.

2.5 LED DRIVERS

- A. LED Driver
 - 1. UL listed.
 - 2. Minimum 0.9 power factor.
 - 3. Less than 20% THD.
 - 4. Minimum 9kV surge suppression protection.
 - 5. Voltage: match luminaire voltage.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrate and supporting structure for luminaires.
- B. Examine each luminaire to determine suitability for lamps specified.

3.2 INSTALLATION

- A. Install in accordance with manufacturers instructions.
- B. Install suspended luminaires using pendants supported from swivel hangers, unless noted otherwise on drawings. Provide pendant length required to suspend luminaire at indicated height.
- C. Support all luminaires independent of suspended ceiling framing.
- D. Exposed Grid Ceilings: Support surface mounted luminaires on grid ceiling independently from grid ceiling and directly from building structure.
- E. Locate recessed ceiling luminaires as indicated on reflected ceiling plan. Report any discrepancies between reflected ceiling plan and lighting plans to A/E prior to rough-in.
- F. Install surface mounted luminaires and exit signs plumb and adjust to align with building lines and with each other. Secure to prohibit movement.
- G. Install recessed luminaires to permit removal from below.
- H. Install recessed luminaires using accessories and fire stopping materials to meet regulatory requirements for fire rating.
- I. Install clips to secure recessed grid-supported luminaries in place. Provide an additional cable supported from the structure from opposite corners of each fixture.
- J. Install wall mounted luminaires and exit signs at height as indicated on Drawings or as directed by Architect/Engineer.
- K. Install accessories furnished with each luminaire.
- L. Connect exit signs to branch circuit outlets provided under Section 260534 using a 6 foot length (maximum) of flexible conduit.
- M. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within luminaire.
- N. Bond products and metal accessories to branch circuit equipment grounding conductor.
- O. Install specified lamps in each luminaire.

3.3 FIELD QUALITY CONTROL

- A. Operate each luminaire after installation and connection. Inspect for proper connection and operation.

3.4 ADJUSTING

- A. Aim and adjust luminaires as indicated on Drawings or as directed by Architect/Engineer.
- B. Adjust exit sign directional arrows as indicated. Turnover spare or extra face places to the Owner.
- C. Re-lamp luminaires that have failed lamps at Substantial Completion.

3.5 CLEANING

- A. Clean electrical parts to remove conductive and deleterious materials.
- B. Remove dirt and debris from enclosure.
- C. Clean photometric control surfaces as recommended by manufacturer.
- D. Clean finishes and touch up damage.

END OF SECTION 265100