

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 26 05 00 – Common Work Results - Electrical.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI C82.1, Electric Lamp Ballasts-Line Frequency Fluorescent Lamp Ballast.
 - .2 ANSI C82.4, Ballasts for High-Intensity-Discharge and Low-Pressure Sodium Lamps.
- .2 American National Standards Institute/Institute of Electrical and Electronics Engineers (ANSI/IEEE)
 - .1 ANSI/IEEE C62.41, Surge Voltages in Low-Voltage AC Power Circuits.
- .3 American Society for Testing and Materials (ASTM)
 - .1 ASTM F1137, Specification for Phosphate/Oil and Phosphate/Organic Corrosion Protective Coatings for Fasteners.
- .4 United States of America, Federal Communications Commission (FCC)
 - .1 FCC (CFR47) EM and RF Interference Suppression.

1.3 SUBMITTALS

- .1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations for each fixture.
- .2 Submit product literature for each type of lamp supplied, complete with the mercury content of each lamp.
- .3 Quality assurance submittals: provide the following:
 - .1 Manufacturer's instructions: provide manufacturer's written installation instructions and special handling criteria, installation sequence, cleaning procedures and relamping schedule.

1.4 STANDARD OF ACCEPTANCE

- .1 Luminaires described in the Lighting Fixture Schedule identify quality, performance criteria and other parameters, as indicated for this project. Named fixtures are acceptable with modifications and accessories, as indicated.
- .2 Fixtures from other manufacturers may be acceptable provided:
 - .1 Appearance and lighting performance are similar.
 - .2 Quality is equal or better.
 - .3 Lamp and ballast criteria remain the same.
 - .4 The fixture is provided with modifications and accessories to provide a complete product in keeping with the intent of the project.

- .5 Approval in writing is obtained from the Consultant to the supplier/manufacturer 5 days prior to tender closing date.

PART 2 - PRODUCTS

2.1 LAMPS

- .1 Fluorescent LED lamps: T8, medium bi-pin instant start (dimmable, direct lighting applications with instant start ballasts) to suit application, 4000 K, 40,000 hour lamp life, 2000 initial lumens, CRI 83; or as indicated.
- .2 Supply lamps that are mercury-free or have low mercury content.

2.2 BALLASTS

- .1 LED Drivers:
1. General Requirements:
 - .1 Designed for 10 year operational life while operating at maximum case temperature and 90 percent non-condensing relative humidity.
 - .2 Designed and tested to withstand electrostatic discharges without impairment of performance when tested according to IEC 61000-4-2.
 - .3 UL 8750 recognized or listed as applicable.
 - .4 Complies with IEC 61347-2-13 as applicable.
 - .5 Surge Tolerance: Designed and tested to withstand Category A surges of 4,000 V according to IEEE C62.41.2 without impairment of performance.
 - .6 Manufactured in a facility that employs ESD reduction practices in compliance with ANSI/ESD S20.20.
 - .7 Class A sound rating; inaudible in a 27 dBA ambient.
 - .8 No visible change in light output with a variation of plus or minus 10 percent line voltage input.
 - .9 Total Harmonic Distortion (THD): Less than 20 percent for loads greater than 25W; complies with ANSI C82.11.
 - .10 Drivers to track evenly across multiple lamp lengths and all light levels.
 - .11 Configuration tool available to optimize the following for LED fixtures:
 - .1 Light level.
 - .2 Efficacy.
 - .3 Thermal performance.
 2. 3-Wire Control:
 - .1 Provide integral fault protection to prevent driver failure in the event of a mis-wire.
 - .2 Operate from input voltage of 120 V through 347 V at 60 Hz.
 3. Digital Control:
 - .1 Lights automatically return to the setting prior to power interruption.
 - .2 Operate from input voltage of 120 V through 347 V at 60 Hz.
 4. Product(s):
 - .1 Digital Control, Five Percent Dimming:
 - .1 Dimming Range: 100 to five percent relative light output.

- .2 Maximum Inrush Current: Meets NEMA 410 inrush requirements.
- .3 Constant Current Drivers:
 - .1 Support from 220 mA to 1.4 A to ensure a compatible driver exists.
 - .2 Support LED arrays up to 60W.

2.3 FINISHES

- .1 Light fixture finish and construction to meet ULC listings and CSA certifications related to intended installation.

2.4 LUMINAIRES

- .1 As indicated in luminaire schedule on drawings. Provide 10% spare lamps of each type noted in luminaire schedule.

2.5 OPTICAL CONTROL DEVICES

- .1 As indicated in luminaire schedule on drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Locate and install luminaires as indicated. Install lamps in all fixtures.
 - .1 Provide adequate support to suit ceiling system.

3.2 WIRING

- .1 Connect luminaires to lighting circuits.
 - .1 Install flexible conduit for vertical power supply drop to luminaires as indicated. Horizontal wiring using flexible conduit is not permitted.

3.3 LUMINAIRE SUPPORTS

- .1 For suspended ceiling installations support luminaires from ceiling grid in accordance with local inspection requirements.

3.4 LUMINAIRE ALIGNMENT

- .1 Align luminaires mounted in continuous rows to form straight uninterrupted line.
- .2 Align luminaires mounted individually parallel or perpendicular to building grid lines.

3.5 FIELD QUALITY CONTROL

- .1 Perform tests in accordance with Section 26 05 00 – Common Work Requirements – Electrical.

END OF SECTION