
Part 1 General

1.1 RELATED SECTIONS

- .1 Section 26 05 00 - Common Work Results for Electrical.
- .2 Section 26 05 21 - Wires and Cables (0-1000 V).
- .3 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.

1.2 REFERENCES

- .1 CSA International.
 - .1 CSA C22.2 No.141-10, Emergency Lighting Equipment.
- .2 American National Standards Institute (ANSI).
 - .1 ANSI C78.377-2008, Specifications for the Chromacity of Solid State Lighting Products.
- .3 American National Standards Institute/Institute of Electrical and Electronics Engineers (ANSI/IEEE).
 - .1 ANSI/IEEE C62.41-1991, Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits.
- .4 National Electrical Manufacturers Association (NEMA).
 - .1 NEMA SSL 1-2010, Electronic Drivers for Led Devices, Arrays, or Systems.
 - .2 NEMA SSL 3-2011, High-Power White LED Binning for General Illumination.
- .5 Illuminating Engineering Society (IES).
 - .1 IES LM 79-2008, Approved Method: Electrical and Photometric Measurement of Solid State Lighting Products.
 - .2 IES LM 80-2008, Approved Method: Measuring Lumen Maintenance of LED Light Sources.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for emergency lighting and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for emergency lighting for incorporation into manual.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors, and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect emergency lighting from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse of packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.6 WARRANTY

- .1 For batteries in this Section 26 52 00 - Emergency Lighting, 12 months warranty period is extended to 120 months.
 - .1 Replacement to be done at no charge during the first 5 years, and with costs prorated for the remaining term of the subsequent five years.

1.7 VOLTAGE DROP

- .1 Supply wires shall be copper and properly sized so that the voltage drop does not exceed 5% of the nominal voltage, in accordance with manufacturer's recommendations.

1.8 ACCEPTABLE PRODUCTS AND MATERIALS

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products.

Part 2 Products

2.1 EQUIPMENT

- .1 Emergency Lighting Equipment: to CSA C22.2 No.141.
- .2 Supply Voltage: 120 VAC.
- .3 Output Voltage: 12 or 24 VDC.
- .4 Operating Time: 2 hours minimum.
- .5 Minimum capacity: 244 W.
- .6 Battery: sealed, maintenance free.
- .7 Charger: solid state, multi-rate, voltage/current regulated, inverse temperature compensated, short circuit protected with regulated output of ± 0.01 V for $\pm 10\%$ input variations.

- .8 Solid state transfer circuit.
- .9 Low voltage disconnect: solid state, modular, operates at 80% battery output voltage.
- .10 Signal Lights: solid state, for "AC Power ON" and "High Charge".
- .11 Lamp Heads: integral on unit or remote, 345° horizontal and 180° vertical adjustment.
Lamp type: LED, imbedded in a polycarbonate case.
- .12 LED Lighting:
 - .1 LED lighting components to ANSI C78-377, NEMA SSL 3, IES LM 79, and LM 80.
 - .2 Power: as indicated.
 - .3 Initial light output: as indicated.
 - .4 Color rendering index: 86.
 - .5 Color temperature: 4,000 K.
 - .6 Lifespan: 50,000 h.
 - .1 Light output after 50,000 hours: 70% of initial light output.
- .13 Cabinet: suitable for direct or shelf mounting to wall and c/w knockouts for conduit.
Removable or hinged front panel for easy access to batteries.
- .14 Finish: beige, steel gage 18.
- .15 Auxiliary Equipment:
 - .1 Ammeter.
 - .2 Voltmeter.
 - .3 Test switch.
 - .4 Time delay relay.
 - .5 Battery disconnect device.
 - .6 AC input and DC output terminal blocks inside cabinet.
 - .7 Shelf.
 - .8 Cord and single twist-lock plug connection for AC.
 - .9 RFI suppressors.
 - .10 Two fused circuits.

2.2 WIRING OF REMOTE HEADS

- .1 Conduit: type EMT, in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.
- .2 Conductors: RW90 type in accordance with Section 26 05 21 - Wires and Cables (0-1000 V), sized in accordance with manufacturer's recommendations.

2.3 ACCEPTABLE PRODUCTS

- .1 Model 24 LS of Emergi-Lite.
- .2 Model ESL of Lumacell.

- .3 Model AtLite of Cooper Lighting (Eaton).
- .4 Replacement materials or products: approved by addendum according to Instructions to bidders.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for emergency lighting installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 INSTALLATION

- .1 Install unit equipment and remote mounted fixtures.
- .2 Direct heads to maximize lighting distribution uniformity.
- .3 Connect exit lights to unit equipment.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by emergency lighting installation.

END OF SECTION