

## SECTION 16535

### EMERGENCY LIGHTING EQUIPMENT

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED

- A. Emergency lighting battery units.
- B. Exit signs.

##### 1.02 RELATED WORK

- A. Section 16010: Basic Electrical Requirements.

##### 1.03 REFERENCES

- A. NEMA Standards.
- B. NFPA 70 (N.E.C.) Latest Edition.
- C. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures.
- D. U.L. Standards.
- E. ANSI Standards.

##### 1.04 DESIGN REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.(N.E.C.)
- B. Conform to local building code and NFPA 101 for installation requirements.
- C. Furnish products listed and classified by Underwriters Laboratories, Inc. (U.L.) as suitable for purpose specified and shown.
- D. All components of the same manufacturer.

##### 1.05 SUBMITTALS

- A. Submit Shop Drawings, Owner's Manuals, and Operating Instructions in accordance with Section 01300 - Submittals.
- B. Include all components, electrical characteristics, recommended maintenance procedures and intervals, list of each battery unit and the total device count and load on each unit.
- C. Submit manufacturer's instructions.

##### 1.06 WARRANTY

- A. Fully guaranteed for a minimum of three (3) years. Except as noted, batteries shall be warranted for an additional seven (7) years minimum, on a prorated basis with a life expectancy of ten (10) years.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Dual-Lite (Model numbers listed)
- B. Lithonia.
- C. High-Lites, Inc.
- D. Sure-Lites.
- E. Chloride.
- F. Siltron.
- G. Prescolite.
- H. Dynaray.

### 2.02 EMERGENCY LIGHTING BATTERY UNITS

- A. 12 volt, D.C. complete with cabinet of minimum #18 gauge steel or high-impact "NORYL" thermoplastic, sealed maintenance free lead-calcium battery, automatic solid state or two-pole type transfer relay, fully automatic solid state charger, volt meter, lamp disconnect switch, test switch, plus SPECTRON self-testing electronics.
- B. Batteries: Sufficient capacity to supply and maintain at not less than 87-1/2 percent of system voltage the total lamp load indicated for a period of time as required by latest edition of NEC,(90 minutes minimum). Initially oversize to meet this criteria over battery's entire life.
- C. Minimum size equal to Dual-Lite LM110-12V series.
- D. Unit Voltage: 120 volts, AC.
- E. Unit Mounted And Remote Heads:
  - 1. Non-Parking areas: 12 volt, 12 watt sealed beam PAR36 Halogen type in high impact thermoplastic white housing, Dual-Lite REMP series.
  - 2. Parking areas: UL 924 listed for wet locations, 12 volt, 12 watt sealed beam PAR36 Halogen type in high impact thermoplastic white housing, Dual-Lite C1D2R & C1D2TR series, complete with weatherproof box and hubs.

### 2.03 EXIT SIGNS - NON-PARKING AREAS

- A. Universal LED, self contained with internal batteries and automatic solid state charger, complete with ceiling, side wall brackets and arrows and faces as indicated designed for 120 volts input.
- B. Die-cast aluminum construction White finish with White face and Green letters.
- C. High-intensity indirect LED panel for even illumination and no visible LED's.
- D. Approximately 4 watts with 20 year light source life.
- E. Dual-Lite LC-\*-E Series or equal.

2.04 EXIT SIGNS - PARKING AREAS

- A. Universal LED, self contained with internal batteries and automatic solid state charger, complete with ceiling, side wall brackets and arrows and faces as indicated designed for 120 volts input.
- B. Die-cast aluminum construction White finish with White face and Green letters.
- C. High-intensity indirect LED panel for even illumination and no visible LED's.
- D. Approximately 4 watts with 20 year light source life.
- E. Dual-Lite SC-\*E-XTR Series rated for -22 degrees F.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install units plumb and level.
- B. Aim directional lampheads to maximize light in egress paths and as directed.
- C. D.C. Wiring: No.10 AWG. minimum, or as noted, in rigid conduit or electrical metallic tubing or MC cable.
  - 1. Except as noted, use home run from each device to associated battery unit.
  - 2. Devices may share same home run to battery unit provided that each home run meets the following criteria or wire sizes are increased to assure maximum of 2-1/2% voltage drop.

Total Watts	Total Conductor Distance
70	25 ft.
50	35 ft.
36	45 ft.
19	95 ft.
- D. AC Wiring to Exit Lights: In separate conduit, or MC cable with ground wired to local un-switched lighting circuit.
- E. Exit Sign Mounting: Generally mount directly above and centered over the doorway opening, on the wall where possible, or mounted from the ceiling when wall mounting is not possible. End wall mounted where required, up 7'-6" AFF. The intent is to locate signs to allow for maximum visibility. Consult Architect before installation, if in question.

END OF SECTION