

Portland Press Herald
Boiler Replacement Project

SECTION 16535

EMERGENCY LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. Division-16 Basic Electrical Materials and Methods sections apply to work specified in this section.

1.2 DESCRIPTION OF WORK

- A. Extent of emergency lighting work is indicated by drawings and schedules. Install new devices where indicated on the drawings.
- B. Types of emergency lighting fixtures in this section include the following:
 - 1. Remote battery powered fixtures.
 - 2. Exit fixtures.
 - 3. Self-contained battery packs.

1.3 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of emergency lighting fixtures of types and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. Installer's Qualifications: Firm with at least 3 years of successful installation experience on projects with emergency lighting work similar to that required for project.
- C. Codes and Standards:
 - 1. NEC Compliance: Comply with NEC as applicable to installation and construction of emergency lighting.
 - 2. NEMA Compliance: Comply with applicable requirements of NEMA Std Pub No.'s 1B 4, 1B 5, and FA 1 pertaining to emergency lighting.
 - 3. UL Compliance: Provide emergency lighting fixtures which are UL-listed and labeled.
 - 4. NFPA Compliance: Comply with applicable requirements of NFPA 101, "Life Safety Code".

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1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical product data on emergency lighting fixtures.
- B. Shop Drawings: Submit fixture shop drawings in booklet form with separate sheet for each fixture, assembled in luminaire "type" alphabetical, or numerical order, with proposed fixture and accessories clearly indicated on each sheet.
- C. Maintenance Data: Submit maintenance data and parts list for eae-h emergency lighting fixture and accessory; including "trouble-shooting" maintenance guide. Include this data, product data, and shop drawings in maintenance manual; in accordance with requirements of Division 1.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Handle lighting fixtures carefully to prevent damage, breaking, and scoring. Do not install damaged fixtures or components; replace with new.
- B. Store lighting fixtures in clean dry place. Protect from weather, dirt, fumes, water, construction debris, and physical damage.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Dual-Lite Inc.
- B. Lithonia
- C. Surelite
- D. Litealarms

2.2 REMOTE EMERGENCY LIGHTING FIXTURES

- A. General: Provide lighting fixtures, of sizes, types and ratings indicated; complete with, but not limited to, housings, lamp holders, wiring.
- B. Wiring: Provide wiring within fixtures for connection to branch circuit wiring. Observe manufacturers recommended conductor sizing for installation of remote heads to minimize voltage drop. Minimize "chaining" of remote heads to minimize load and voltage drop on any one circuit.

2.3 SELF-CONTAINED BATTERY PACKS

- A. General: Fixtures must comply with minimum requirements as stated herein.

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- B. Emergency Units: Provide units with self-contained battery, solid-state fully automatic charger, and solid-state transfer/brownout circuit, with low-voltage battery disconnect and solid state circuitry to automatically exercise the batteries.
1. Battery: Provide hybrid recombination (10-15 year life) maintenance free sealed lead-calcium battery capable of supplying connected load for period of 1-1/2 hours to end voltage or 87-1/2 percent of nominal battery voltage.
 2. Charger: Provide automatic battery charger with full recharging capability in 12 hours, or less after full discharge.
 3. Accessories: Provide following accessories mounted on unit cabinet:
 - a. Unit test switch.
 - b. AC "ON" pilot light.
 - c. Heavy-duty wall mounting bracket.
 - d. Self-diagnostic system with indicator lamps for charging status, battery failure, and lamp failure. Unit shall automatically initiate a test cycle every 25-30 days utilizing an internal load (not system lamps).
 - e. Unit shall be housed in a commercial type steel cabinet with contemporary, white enamel finish.
 - f. Units shall be hardwired to branch circuits indicated.
 4. Fixtures: Provide 18 watt Incandescent heads in the quantity indicated. Dual-lite or equal. Fixtures shall be wall mounted with stems from both heads at an equal distance to the floor. Contractor should pay particular attention when mounting wall boxes to remote head stem position verses cover screw position on box.
 5. Units shall be Dual-Lite 12EDC series with Self-Diagnostics option (or equal). Size units for indicated load with reserve capacity for an additional 2 lamps.

2.4 EXIT FIXTURES

- A. Provide surface, wall, or ceiling mounted fixtures as required, with capability for adjusting exit arrows as required.
1. Plastic Panels: Provide stencil face, housing shall have a black, permanent finish, green letters, 6" high, 3/4" stroke. Provide with optical diffuser.
 2. Lamps: Lamps shall be LED type.
 3. Fixtures shall be 120 volt type, without battery backup. Provide with isolation transformer suitable for 120/277 operation.
 4. Self-Diagnostics shall comply with 2.03B of this specification.
 5. Enclosure: White or off-white plastic.

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PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine areas and conditions under which emergency lighting is to be installed, and substrate which will support lighting fixtures. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.2 INSTALLATION OF EMERGENCY LIGHTING FIXTURES

- A. Install emergency lighting fixtures at locations and heights as indicated, in accordance with fixture manufacturer's written instructions, applicable requirements of NEC, NECA's "Standard of Installation", NEMA standards, NFPA, and with recognized industry practices to ensure that lighting fixtures fulfill requirements.
- B. Coordinate with other electrical work as appropriate to properly interface installation of emergency lighting fixtures with other work.

3.3 ADJUSTING AND CLEANING

- A. Clean emergency lighting fixtures of dirt and debris upon completion of installation.
- B. Protect installed fixtures from damage during remainder of construction period.

3.4 GROUNDING

- A. Provide equipment grounding connections for emergency lighting fixtures as indicated. Tighten connections to comply with tightening torques specified in UL Std 486A to assure permanent and effective grounds.

3.5 FIELD QUALITY CONTROL

- A. Upon completion of installation of emergency lighting fixtures, and after building circuitry has been energized with normal power source, apply electrical energy to demonstrate capability and compliance with requirements. Test emergency lighting to demonstrate operation under emergency conditions. Where possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and proceed with retesting.

END OF SECTION