

# **S.C. ELECTRIC COOPERATIVE'S SPECIFICATIONS FOR 250, 400, AND 1,000-WATT FLOODLIGHT FIXTURE**

## **1.0 SCOPE**

- 1.1 This specification covers the electrical and mechanical characteristics of 250, 400 AND 1,000-Watt High Pressure Sodium (HPS) and Metal Halide (MH) floodlight fixtures.
- 1.2 All characteristics, definitions, and terminology, except as specifically covered in this specification shall be in accordance with the latest revision of the following ANSI and UL standards:
  - 1.2.1 ANSI C.82
  - 1.2.2 ANSI C.136.32
  - 1.2.3 ANSI B-117
  - 1.2.4 UL-1598
- 1.3 In addition to the above requirements, the floodlight shall also meet the requirements of the Rural Utility Service (RUS) and be listed as part of the Approved List of Materials.

## **2.0 CONSTRUCTION**

- 2.1 The applicable Fixture Wattage (250, 400, 1,000) and Type (HPS, MH) shall be specified in **ATTACHMENT "A"**.
- 2.2 The fixture shall be a heavy-duty utility grade, mechanically and electrically.
- 2.3 The fixture housing shall be manufactured of high quality die-cast aluminum.
- 2.4 The fixture shall be designed and manufactured for improved corrosion, water, dirt, insect, and animal protection.
- 2.5 All exterior surfaces shall be smooth and free of burs.
- 2.6 The fixture housing color shall have either a bronze or gray finish as specified in **ATTACHMENT "A"**.

- 2.7 Painted surfaces shall be free from voids, runs, and scratches.
- 2.8 Cable entry holes shall be equipped with a grommet and free from sharp edges.
- 2.9 All conductors inside the fixture shall be neatly trained and secured with tie-wraps on conductors as needed to prevent pinch points on conductors.
- 2.10 The fixture shall be enclosed and gasketed, securely bonded making a positive seal, to prevent contaminants from entering the luminaire.
- 2.11 The fixture shall have a minimum IP (Ingress Protection) rating of 54.
- 2.12 Housing door holder/hinges shall be designed for tool-less entry, maintain positive control of door and refractor holder to housing base so as not to allow the accidental disengagement of either.

### **3.0 REFRACTOR**

- 3.1 The refractor shall be of clear tempered thermal and shock resistant flat glass.
- 3.2 The refractor lens shall be cemented or secured with retainer latches to prevent accidental disengagement from the door.
- 3.3 The lens will be installed in manner that supports the fixture integrity requirements as specified in section 2.3 of this Specification.

### **4.0 REFLECTOR**

- 4.1 The reflector shall be hydro-formed or formed anodized aluminum and finished with clear (ALZAK<sup>®</sup>) or equivalent finish.
- 4.2 The reflector shall be secured to the fixture housing so that it will not shift position or become loose when the fixture is opened or during shipping.

### **5.0 PHOTOMETRIC DISTRIBUTION**

- 5.1 The fixture shall produce a standard NEMA 7X6 light distribution pattern unless otherwise specified in **ATTACHMENT A**. i.e. 7X5 where the first number defines the horizontal beam spread and the second number defines the vertical beam spread.

### **6.0 BALLAST**

- 6.1 The fixture ballast shall be a multi-tap (120/208/240/277 volts) High Power Factor (HPF) CWA type.
- 6.2 The ballast shall contain all copper windings.
- 6.3 The ballast shall be pre-wired for 120-volt operation.

## **7.0 STARTER CIRCUIT – HPS FIXTURES ONLY**

- 7.1 The fixture shall be provided with a Universal plug-in type starter circuit receptacle and which will accept independent HPS replacement starters.
- 7.2 Each fixture will be provided with a starter circuit.
- 7.3 The starter circuit shall be encapsulated.
- 7.4 The starter circuit shall indicate the manufacturer name, rated lamp wattage, and rated lamp voltage.
- 7.5 The starter circuit shall be internal to the fixture but separate from the ballast.

## **8.0 TERMINAL BLOCKS, CONNECTORS, AND WIRING**

- 8.1 Fixtures shall have labeled terminal blocks that will accept up to #6 AWG copper or aluminum conductors.
- 8.2 The terminal board shall be constructed of porcelain or a durable plastic material with non-corrosive connections.
- 8.3 Terminal blocks shall be clearly designated and marked 'N' for neutral and 'L1' and 'L2' for supply leads.
- 8.4 All internal wiring shall be color coded as specified in the National Electric Code:
  - 8.4.1 Equipment Ground – GREEN
  - 8.4.2 Neutral – WHITE
  - 8.4.3 Supply Leads – BLACK, RED
- 8.5 All fixtures shall be pre-wired to the terminal block with a 6 foot, 3-wire, #12 AWG copper conductor, 90° C, color coded SO type cord.
- 8.6 Tap connections internal to the fixture shall be made by insulated connectors and clearly labeled.
- 8.7 Wire nuts are prohibited inside of the fixture housing.

## **9.0 PHOTOCONTROL RECEPTACLE**

- 9.1 Photocontrol receptacle shall be wired for multi-volt operation.
- 9.2 All fixtures shall be equipped with a 3-pole, 3-wire twist-lock type receptacle.
- 9.3 Photocontrol receptacle terminals shall be phosphor bronze alloy.
- 9.4 The receptacle shall meet the applicable provisions of ANSI C136.10, or the latest revision thereof.

## **10.0 LAMP SOCKET**

- 10.1 Lamp sockets shall be permanently marked or have a label on the socket indicating the wattage and source of the fixture.
- 10.2 Lamp socket shall be a multiple mogul type base, made of glazed porcelain, 600-volt and fully insulated.
- 10.3 The socket shall have nickel-plated brass contacts.
- 10.4 The center contact of the socket shall be spring-loaded, nickel-plated copper alloy or nickel-plated stainless steel.
- 10.5 The socket shall be 4KV impulse rated and so indicated on the socket.
- 10.6 The lamp socket shall meet the requirements of ANSI C136.11, or the latest revision thereof.

## **11.0 FIXTURE LAMP**

- 11.1 The fixture WILL NOT be furnished with a lamp.

## **12.0 LIGHTENING PROTECTION**

- 12.1 The fixture shall be equipped with a 180-Joule (minimum) MOV lightning arrester.

## **13.0 WIRING DIAGRAMS**

- 13.1 Each fixture shall be provided with only one wiring diagram.
- 13.2 Wiring diagram shall include ballast, socket, photoelectric receptacle, starter circuit and coded terminal block connections.
- 13.3 Wiring diagrams will be securely affixed to the inside of the fixture housing in an area where it can be easily read.

## **14.0 FIXTURE IDENTIFICATION**

- 14.1 Fixture shall have a wattage label visible from the ground when installed.

- 14.2 All labels shall be a NEMA type, wattage/type, according to ANSI C136.15.
- 14.3 Each fixture shall be provided with a permanent nameplate or sticker of mylar material with permanent pressure sensitive acrylic adhesive backing (3M468 Industrial Standard type material or equivalent) to provide the following information:
  - 14.3.1 Manufacturer's name and catalog number.
  - 14.3.2 Manufacturer's date code must be numeric (3/2002 or 3/02).
  - 14.3.3 Ballast type.
  - 14.3.4 Lamp type, wattage and voltage.

## **15.0 HARDWARE**

- 15.1 External latches shall be stainless steel. Stainless steel threaded fasteners are to be avoided because of the electrolytic action that takes place between the two dissimilar metals. Threaded fasteners and washers shall be corrosion resistant carbon steel capable of withstanding ANSI B-117 salt fog test without red running rust.
- 15.2 All other hardware shall be corrosive resistant.

## **16.0 MOUNTING**

- 16.1 The fixture shall be furnished with a painted or galvanized steel-mounting bracket. The style or type of mounting bracket and its color shall be specified in **ATTACHMENT "A"**.
- 16.2 The center hole of the trunnion mounting bracket shall accept a 3/4" diameter machine bolt.

## **17.0 WARRANTY**

- 17.1 The fixture and all of its components, including the paint finish, shall carry a minimum five-year warranty.
- 17.2 Any fixture that does not meet the requirements and/or specifications shall be returned to the supplier and replaced by the supplier at no cost to the purchaser.
- 17.3 No changes or modifications to fixtures outside the scope of this specification shall be implemented without the approval of a written description of the proposed variations submitted by the manufacturer.



**ATTACHMENT “A”**  
**Selected Options for Floodlight Fixture**

\_\_\_\_\_  
Electric Cooperative, Inc.

Date: \_\_\_\_\_

- I. Fixture Wattage
  - 250
  - 400
  - 1,000
- II. Fixture Type
  - High Pressure Sodium
  - Metal Halide
- III. Fixture Housing Color
  - Bronze
  - Gray
- IV. Photometric Distribution – NEMA (7x6) is standard unless specified otherwise below:
  - NEMA (6 x 6)
  - NEMA (5 x 5)
  - NEMA (4 x 5)
  - NEMA (4 x 4)
  - NEMA (3 x 4)
  - NEMA (3 x 3)
- V. Mounting
  - Yoke (Trunnion)
  - Slipfitter (Knuckle) for attachment to a 1.9” - 3” OD Tubular Structure

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