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P U B L I C U T I L I T I E S

ENERGY DELIVERY DIVISION

RIVERSIDE, CALIFORNIA

SPECIFICATION NO.1-6.3

(Revision 3)

FOR

OUTDOOR LIGHTING ELECTRONIC PHOTOCONTROLS

FOR LED STREET LIGHTS

By

PUBLIC UTILITIES DEPARTMENT

ELECTRIC DIVISION

RIVERSIDE, CALIFORNIA

Approved by T & D Committee

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11/13/2019

Date

Principal Electric Engineer

Date

SPECIFICATIONS FOR
OUTDOOR LIGHTING ELECTRONIC PHOTOCONTROLS
FOR LED STREET LIGHTS

1. SCOPE

This Specification covers the requirements for LED street roadway and area lighting electronic photocontrols, plug in locking type, ANSI 7-pin standard, to be used on the City of Riverside's electrical distribution system.

2. CONFORMANCE TO NATIONAL STANDARDS

Photocontrols supplied under this Specification shall meet the requirements of the latest revision of the following Standards:

- a. ANSI C136.41 – 7 pin connector suitable for dimming and auxiliary power
- b. ANSI C136.10 – Roadway and Area Lighting Equipment

3. OPERATING RANGE

- a. Any voltage 105-305 VAC, 50/60 HZ and shall be listed for 120/208/240/277 volts AC.
- b. -40°C to +70°C
- c. Maximum 0.5 watts power consumption

4. LOAD RATING

- a. 1000 watts Tungsten; 1800 VA Ballast, using an air gap power relay with no leakage current.

5. OPERATING REQUIREMENTS

- a. Turn-on: instantaneous calibrated at 1.5 fc.
- b. Maximum ratio of Turn-Off to Turn-On is 1.5:1
- c. Calibration within ± 0.25 fc.
- d. 3-5 second turn-off delay
- e. Failure mode: fail on
- f. Blind to LED and HID light, reacts only to sunlight < 0.5% drift over 10 years
- g. No cycling
- h. Any orientation (i.e. does not need to face North)

6. SURGE PROTECTION

- a. Minimum 640 joules
- b. 40,000 amps
- c. Min. 5000 volts dielectric strength between current carrying parts

7. CONSTRUCTION

- a. Cover: Polypropylene impact and UV resistant material with embedded color (see Table A) designed for >20 years life.
- b. Durably marked on the base with the manufacturer's name, date of manufacture, serial number, model number, operating voltage range, load rating, and provision for marking installation and removal dates. Embossed with rating information and the year of manufacture.
- c. Moisture resistant glass epoxy circuit board.
- d. Polycarbonate base minimum rating 140°C, UL94HB flame class rated.
- e. Neoprene gasket, complying with ASTM D 1056

8. SPECIAL ELECTRICAL CONTROL REQUIREMENTS

- a. See Table A, (next page).
- b. Zero-crossing turn-on technology to minimize inrush damage to relay contacts when turning "on".
- c. Photocontrol must have ability to adjust light levels on a dimmable LED fixture through 0-10 Vdc dimming on pins 4 & 5 of C136.41 receptacle, either from dusk to dawn or at specific times (see Table A next page).
- d. Photocontrol must dim in stand-alone mode, i.e.no wireless networks or other communications.
- e. Manufacturer to set 0-10-volt DC output value based on measurements of typical LED driver(s) to be obtained from Riverside Public Utilities.

9. WARRANTY

- a. Warranty shall be manufacturer standard.

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TABLE A
Photoelectric Control Types and Functions

Tag	Function	Color	Typical Application
PC-1	Full light output dusk to dawn (standard)	Black	Civic center and designated districts

END OF SECTION