

**CITY OF HIGHLAND**  
**Public Works Policies, Procedures and Standards**

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**10.0 LIGHTING**

1. General Requirements

- a. Utilize the latest National Electric Codes, the City of Highland Street Light Specifications, and the State of California Department of Transportation Standard Specifications.
- b. Use City of Highland standard 24" x 36" mylar plan sheets and title blocks. Plans shall be signed by a Registered Civil Engineer or Electrical Engineer.
- c. Coordinate with Southern California Edison for service points.
- d. Street light locations will be provided by the City at the beginning of the plan check process.
- e. Street light poles shall be Ameron 1C1 octagonal natural gray concrete poles with black and white aggregate, and shall have a factory applied anti-graffiti coating. Mast arms shall be Ameron Type 1AP.
- f. Street light poles shall be located two feet from the center of pole to curb face.

2. LED Street Light Specifications

Specifications by Roadway Designation

Roadway Designation	Curb Separation (Feet)	Lumens	Luminaire Watts	Number of LED's	Voltage	Nominal Color Temperature	Light Distribution	Fixture Casting	Drive Current	Mounting Height (Feet)*	Pole Height (Feet)*	Mast Arm Length (Feet)*	Optimum Spacing Staggered (Feet)*	Average FC
Local	36	2429	24	20G	MV	NW	2	G CJ1	350mA	26	23	6.5	180	0.3
Collector	44	3679	37	20G	MV	NW	2	G CJ1	580mA	26	23	6.5	180	0.4
Special Collector	52	3679	37	20G	MV	NW	2	G CJ1	580mA	26	23	6.5	180	0.5
Secondary Highway	64	9246	106	30F	MV	NW	2	G CM1	1A	31	28	6.5	180	0.8
Major Highway	80-88	11941	138	40F	MV	NW	3	G CM2	1A	31	28	6.5	140	0.8
Primary Arterial	96	11941	138	40F	MV	NW	3	G CM2	1A	31	28	6.5	140	0.8

\* Unless otherwise specified/approved by the City Engineer.

- a. Luminaires shall be Leotek Cobra head LED or approved equal.
- b. Each luminaire shall have an ANSI 134-2, 7 conductor, twist-lock photocell receptacle.
- c. Optimum uniformity ratio = 3:1.
- d. Surge suppression: The luminaire on-board circuitry shall include surge suppression devices to withstand high repetition noise transients as a result of line switching and other interference.

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- e. Thermal management of the heat generated by the LEDs shall be of sufficient capacity to assure proper operation of the luminaire over the expected useful life.
- f. Thermal management shall be passive by design and shall consist of a heat sink with no moving parts or liquids.

#### **3. Physical/Mechanical Requirements**

- a. The luminaire shall be a single, self-contained device not requiring on-site assembly for installation. The power supply shall be integral to the unit.
- b. The housing shall be completely constructed of metal, except for gaskets, lenses, etc. Housing finish shall be gray in color and powder coated.
- c. Luminaire shall be warranted rust proof for the warranty period.
- d. All components must be fully accessible for servicing without removing the luminaire from its mounting.
- e. Access doors and panels shall be hinged and accessible without tools. If not, provide clips or lanyards to prevent them from falling when open.
- f. All hardware and fasteners shall be stainless steel or zinc-nickel plated.
- g. The assembly and manufacturing process for the LED luminaire shall be designed to assure all internal components are adequately supported to withstand mechanical shock and vibration from wind loads up to 100 mph.

#### **4. Luminaire Identification**

- a. Each luminaire shall have the manufacture's name, trademark, model number, serial number, month and year of manufacture with lot number and replacement part numbers permanently marked inside each unit and on the outside of each packaging box.
- b. The following operating characteristics shall be permanently marked inside each unit: rated voltage and rated power in watts and volt-ampere, CCT rating in Kelvin and Luminaire Efficiency Rating.
- c. Luminaire shall have an exterior wattage that can be easily read from the ground.

#### **5. Quality Assurance**

- a. Manufacturer shall provide a written warranty for full replacement of the luminaire due to any failure for a period of ten (10) years from the date on installation.
- b. Luminaire shall, at the City's option, be repaired or replaced if the luminaire fails to function as described in the above specification for the duration of the warranty period.
- c. The written replacement warranty shall be converted to a written on-site replacement warranty if the field observed and documented failure exceeds 5 percent for any installation of 100 or more identical components. On-site warranty replacement includes removal and disposal of failed components, along with delivery and installation of new components.

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6. Splicing
  - a. Splices shall be permitted in pull boxes and lighting standard bases only and shall be waterproof.
  
7. Conduit
  - a. All conduit shall be minimum two-inch UL approved heavy wall polyvinyl chloride (PVC schedule 40).
  - b. Conduit shall be sand encased three inches minimum on all sides.
  - c. Conduit shall be laid to a depth of not less than 30 inches below the top of curb in sidewalk areas and 30 inches below finished grade in all other areas.
  - d. Conduit laid in open trenches shall not be backfilled until installation has been accepted by the public works inspector.
  
8. Pull Boxes
  - a. A number 3½ pull box shall be installed within five feet of each street light and within five feet of each service point, unless the street light is within five feet of the service point. Pull boxes shall not be spaced at over 200 feet.
  - b. The bottom of the pull box shall rest firmly on a 12-inch bed of one-inch crushed rock extending six inches beyond the outside edges on the pull box.
  - c. Pull boxes shall not be installed in any part of a driveway or other traveled way.
  - d. Pull box covers shall be inscribed "STREET LIGHTING" and shall be secured with ⅜-inch brass, stainless steel or other non-corroding bolts