



Updated 6/28/17

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ELECTRICAL TESTING BRANCH
OFFICE OF ROADWAY MATERIALS TESTING
CALIFORNIA DEPARTMENT OF TRANSPORTATION

AUTHORIZATION PROCEDURES AND ACCEPTANCE CRITERIA FOR LED LUMINAIRES

All LED Luminaires to be used by the State of California Department of Transportation shall be on the Caltrans Authorized Material List before incorporation into any construction project. Authorization of this material requires the following:

1. Manufacturer/Supplier Provides:
 - a. Model/Part Number
 - b. Application (from Caltrans Specifications)
 - c. Test Report from a Nationally Recognized Testing Laboratory (NRTL), verifying the following parameters:
 - i. Max Power (watts) (at 70 °F & 120 VAC)
 - ii. Max LED Junction Temp (°C)
 - iii. Heat sink area (sq in)
 - iv. Thermal resistance Rthj-a (°C/W) (total). Thermal resistance measured in °C/W. Rthj-a is the total thermal resistance from the LED junction to the ambient air. Rthj-sp is the component from the LED junction to the solder point on the PC board or place where the LED is mounted.
 - v. Rthj-sp (required)(from LED data sheet)
 - vi. Driver Manufacture/Model
 - vii. Driver Life (at 70°F)
 - viii. L70 (hours) (at 70°F)
 - ix. Lumen Maintenance Factor (at 70°F and 63,000 hrs)
 - d. Required Documents and Test Reports:
 - i. Product spec sheet
 - ii. LED spec sheet (w/output vs time chart)
 - iii. IES LM-79 Report (including luminous intensity distribution per IES LM-63)
 - iv. IES LM-80 Report
 - v. Initial iso-footcandle chart
 - vi. End of life iso-footcandle chart
 - vii. ANSI/IEEE C62.41.2 Report
 - viii. Caltrans Test 611 Report (or equal)
 - e. Description of Manufacturers Quality Control Procedures
 - f. Two Luminaire samples for each submittal



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- g. Ship the required reports and luminaire samples to the Caltrans' Transportation Laboratory in Sacramento:

**California Department of Transportation
Materials Engineering and Testing Services
MS #5: Electrical Testing Branch
5900 Folsom Boulevard
Sacramento, CA 95819-4612**

2. Caltrans will:
 - a. Ensure all required documentation is received.
 - b. Review the technical information.
 - c. Evaluate submitted samples for Compliance with Caltrans specifications. Caltrans testing will verify the photometric, electrical and physical/mechanical performance of the luminaires per Caltrans Standard Specifications, Section 86-1.02K(2).
 - d. Upon evaluation of the submitted technical information and Caltrans test results, issue an acceptance letter valid for two years or a rejection letter.
 - e. Update the Caltrans Authorized Material List, if applicable.
 - f. Request re-submittal of the qualification package from the manufacturer every two years.

3. For more information, you may contact the Electrical Testing Branch: James Rhodes at (916) 227-7112 or james.e.rhodes@dot.ca.gov