

ALABAMA DEPARTMENT OF TRANSPORTATION  
PROCEDURE FOR EVALUATION AND MAINTENANCE OF

LIST IV-6  
ROADWAY LIGHTING

1. **Material:** Miscellaneous traffic control devices  
(c) Underpass Luminaires for Interstate and State Routes - for luminaires mounted below overpasses
2. **Specification:** Sections 750 & 889  
(d) LED Luminaires for Signalized Intersections - for luminaires mounted to signal poles
3. **Jurisdiction:** Product Evaluation Board, Design Bureau - Traffic Design Section  
(e) LED Luminaires for Refitting Utility Poles on U.S. and State Routes - luminaires submitted by utilities for use on existing poles with HPS/MH luminaires
4. **Job Acceptance Requirements:** No job control samples necessary if the product works satisfactorily.  
Companies wishing to have products evaluated for placement on this list should furnish the Department's Product Evaluation Engineer with the following:
5. **Project Engineer's Responsibility:** Receive the manufacturer's cut sheets and listings of proposed equipment and materials, on a project by project basis. Submit this information to the Traffic Design Engineer.
  - 6.1 Name and address of the company producing the product. Submit copies of the product cut sheet and specifications.
  - 6.2 Submit copies of certified NEMA or other independent laboratory test results. Test results shall include vibration evaluation and lumen depreciation (IES TM-21).
6. **Producer's Initial Requirements:**  
Producer's Initial Requirements: The list consists of five categories based on luminaire useage. Applicants must submit one application per category per luminaire model name. Vaiances in model configuration will not require separate applications.
  - 6.3 Furnish IES electronic files created by an independent or certified laboratory of the tested lumen output for all lumen values of the product range at the appropriate color temperature.
  - 6.4 Submittal and testing fees according to the Department's current fee schedule.

The categories on the list are:

  - (a) Conventional Luminaires for Interstate and State Routes - for pole mounted luminaires without lowering devices
  - (b) High Mast Luminaires for Interstate and State Routes - for pole mounted luminaires with lowering devices
7. **Producer's Maintenance Requirements:**  
Companies with products on this list will be expected to comply with the following to stay on the list:
  - 7.1 Produce the same quality of material as the material supplied for the original evaluation.

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- 7.2 Provide only approved products to Department projects.
- 7.3 Promptly report to the Department any changes in company name, product name, company address or company ownership.
- 7.4 Notify the Department of any changes in production of the product. Any alteration that will change the product performance will require a reevaluation of the product. It shall be at the discretion of the Department's Product Evaluation Engineer as to what level of reevaluation is required for any given alteration.
8. **Laboratory Testing:** The following evaluations will be conducted on submitted products:
- 8.1 Check for compliance with Sections 750 & 889 of the Department Specifications.
- 8.2 Check for compliance with NEMA or other industry standards.
- 8.3 Check for compliance with the RP-8-00 Roadway Lighting design guide by the Illuminating Engineering Society. Analysis shall be performed using the submitted electronic files to determine if the submitted product complies with RP-8-00 illumination standards. Calculations shall be made using the following roadway calculation grid designs:
- (a) For *Conventional Roadway Luminaires* (pole mounted luminaires without lowering devices), luminaires shall be evaluated against two calculation grids: approximating a two-lane Interstate roadway, and a four-lane Interstate roadway. Mounting height shall be 45 ft. The total light loss factor shall be based on 50,000 hours of operation with a 10 percent lumen dirt depreciation. All luminaires shall utilize IES Type III light patterns. For the two-lane roadway, poles shall be placed at 230 foot in a staggered spacing with a 45 ft. median on a 30 ft. setback. Wattage shall be limited to 200 watts. For the four-lane roadway, the median shall be 25 ft. Wattage shall be limited to 280 watts.
- (b) For *High Mast Roadway Luminaires* (pole mounted luminaires with lowering devices), luminaires shall be evaluated against two calculation grids approximating a two-lane Interstate roadway and a four-lane Interstate roadway. Mounting height shall be 100 ft. Wattage shall be limited to 480 watts per luminaire. Poles shall be limited to three luminaires. The total light loss factor shall be based on 50,000 hours of operation with a 10 percent lumen dirt depreciation. For the two-lane roadway, poles shall be placed at 700 foot in a staggered spacing with a 45 ft. median on a 50 ft. setback. For the four-lane roadway, the median shall be 25 ft.
- (c) For *Underpass Roadway Luminaires*, luminaires shall be evaluated against a calculation grid approximating a two-lane Interstate roadway. Mounting height shall be 17 ft. Wattage shall be limited to 100 watts per luminaire. The total light loss factor shall be based on 50,000 hours of operation with a 10 percent lumen dirt depreciation. Luminaires shall be one row spaced at 40 ft. with no set back from the outside edge of pavement.
- (d) For *LED Luminaires for Signalized Intersections*, luminaires shall be evaluated using a simulated intersection of a four-lane roadway crossing another four-lane roadway. Four luminaires shall be mounted in the intersection 15 ft. from each edge of travel way. The mounting height shall be 40 ft. Arms up to 12 ft may be utilized. All luminaires shall utilize IES Type III light patterns. The total light loss factor shall be based on 50,000 hours of operation with a 10 percent lumen dirt depreciation. Wattage shall be limited to 200 watts. Roadway illuminance shall not exceed 150 percent of minimum IES required value.

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- (e) For *LED Luminaires for Refitting Utility Poles on U.S. and State Routes*, applications shall be made by electric utility companies. Products shall be evaluated based on the existing luminaire they are intended to replace. Expected lumen output of the LED luminaire shall equal that of the existing HPS/MH luminaire after each product has been in operation for 50,000 hours.
- 8.4 Successful field installation and evaluation of the product is required.
- (a) The applicant shall provide sample luminaires along with testing fees as required by the Department's fee schedule.
- (b) For *Conventional Roadway Luminaires* seven sample luminaires shall be provided. Evaluation shall be made at the ALDOT testing facility located at the Elmore County district yard.
- (c) For *High Mast Roadway Luminaires*, 12 sample luminaires shall be provided. Evaluation shall be made utilizing four high mast poles located at the I-85 Montgomery Outer Loop interchange.
- (d) For *Underpass Roadway Luminaires*, four sample luminaires shall be provided. Evaluation shall be made at the ALDOT testing facility located at the Elmore County district yard.
- (e) For *LED Luminaires for Signalized Intersections* and *LED Luminaires for Refitting Utility Poles on U.S. and State Routes*, no field test is currently performed.
- (f) On completion of the evaluation, sample luminaires may be picked up at the State Signal Shop.
9. **Contractors' Requirements:** The prime contractor will be responsible for purchasing and using only approved products.
10. **Removal of Products:** Products may be removed from this list for any of the following:
- 10.1 Mislabeling products or substitution of products other than those originally submitted.
- 10.2 Failure to comply with any of the Department's requirements for this type of material.
- 10.3 Failure to work satisfactorily on the job.
11. **Correspondence:** All correspondence concerning this list should be directed to the following: Product Evaluation Board  
Alabama Department of Transportation  
3704 Fairground Road Montgomery, AL  
36110