

## Commercial LED Lighting Program - 2012

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### LED MEASURE ELIGIBILITY

#### **Measure Eligibility Criteria**

Eligible LED lighting products\* meet the requirements of one of the following qualifying programs:

- **ENERGY STAR®:** [http://www.energystar.gov/index.cfm?c=ssl.pr\\_commercial](http://www.energystar.gov/index.cfm?c=ssl.pr_commercial)
- **DesignLights Consortium™:**  
[http://designlights.org/solidstate.about.QualifiedProductsList\\_Publicv2.php](http://designlights.org/solidstate.about.QualifiedProductsList_Publicv2.php)
- LED products that have been previously approved for incentives by a Texas electric utility are likely also qualified for incentives under this program.

The Program may also evaluate and qualify proposed LED lighting products on a project-by-project basis in a market-neutral, non-discriminatory manner. Proposed LED products will be evaluated using the applicable ENERGY STAR® or DesignLights Consortium criteria, standards and testing requirements in effect at the time of Project approval:

- ENERGY STAR®: [http://www.energystar.gov/index.cfm?c=ssl\\_res\\_pt\\_ssl](http://www.energystar.gov/index.cfm?c=ssl_res_pt_ssl)
- DesignLights Consortium: <http://designlights.org/solidstate.manufacturer.requirements.php>

#### **Additional requirements include:**

- Products for outdoor/uncovered applications must utilize a control measure that automatically prevents operation during daylight hours.
- Products must meet applicable Underwriters Laboratory safety standards.
- Product manufacturers must support the Solid-State Lighting (SSL) Quality Advocates program (<http://www1.eere.energy.gov/buildings/ssl/advocates.html>) and take the Lighting Facts Pledge ([www.lightingfacts.com](http://www.lightingfacts.com)) to accurately report and disclose LED product performance based on industry standardized testing.
- Product warranty must cover the repair or replacement of defective electrical parts for a minimum of five (5) years from the date of purchase.
- The following tests must have been performed on all proposed products:
  - IESNA LM-79-08 photometric test measuring the photometric properties of SSL devices, allowing calculation of luminaire efficacy. Testing laboratory must hold NVLAP accreditation for the LM-79-08 test procedure or must be qualified, verified, and recognized through the DOE's CALiPER program.
  - In-Situ Temperature Measurement Test (ISTMT). Testing laboratory must be approved by OSHA as a Nationally Recognized Testing Lab (NRTL), must be qualified, verified, and recognized through DOE's CALiPER program, or must be recognized through UL's Data Acceptance Program.
  - IESNA LM-80-08 lumen maintenance test allowing calculation of measure lifetime, provided by LED package, array, or module manufacturer.

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\* LED replacement lamps are not eligible for incentives under this program.

### **Measure Qualification**

LED products listed by ENERGY STAR® or the DesignLights Consortium require no further qualification.

#### **For LED products that are not listed by ENERGY STAR® or the DesignLights Consortium:**

*Once an eligible Project has been identified, Service Providers and measure/device manufacturers may be required to provide detailed measure data and test reports in order for the Program to evaluate and qualify proposed LED measures against the criteria indicated above.*

A summary of the required documentation is below, though the Program may require additional measure data in some cases. Refer to the ENERGY STAR® Manufacturer's Guide for Qualifying SSL Luminaires ([http://www.energystar.gov/index.cfm?c=ssl\\_res.pt\\_ssl](http://www.energystar.gov/index.cfm?c=ssl_res.pt_ssl)) for additional information on required testing and documentation (sections regarding the ENERGY STAR® submittal process do not apply to this Program).

#### DOCUMENTS REQUIRED TO EVALUATE PROPOSED LED MEASURES

- a. IESNA LM-79-08 Photometric (Goniophotometry) Test Report (formatted to LM-63-03)
- b. IESNA LM-79-08 Integrating Sphere Output Report
- c. For Lumen Maintenance, use either:
  - Option 1 – Component Performance
    - LED Package Manufacturer LM-80 Test Report with results showing relative light output over time
    - In situ temperature measurement test (ISTMT) showing measured  $TMP_{LED}$
    - Diagram or photograph of the Temperature Measurement Points for the package, array or module
  - Option 2 – Luminaire Performance
    - IESNA LM-79-08 Test Report at time = 0 and 6,000 hours respectively.
- d. For Power Supply (the ISTMT typically includes these results)
  - In situ temperature measurement test showing measured  $TMP_{PS}$
  - Diagram or photograph of the Temperature Measurement Point for the power source
- e. Warranty (a written or electronic copy of the complete terms and conditions)
- f. A written statement indicating the forward drive current (in milliamps, mA) applied to the LEDs in the luminaire, Product Part Number of the luminaire (clarify the version or generation if it is not specified in the part number), and a description/part number of the LED Chip(s)/package(s) in the luminaire.

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### **SSL TECHNOLOGY FACT SHEETS**

#### **LED Measurement** (<http://www1.eere.energy.gov/buildings/ssl/factsheets.html>)

- **Solid-State Lighting Standards:** Review of the key LED performance and safety standards
- **Luminaire Efficacy:** Overview of LED luminaire efficacy
- **LED Luminaire Reliability:** Outline of the issues concerning long-term performance and reliability of LED luminaires, and suggestions for interpreting LED product life claims
- **Understanding Photometric Reports for SSL Products:** Overview and discussion of typical elements in IES LM-79 photometric reports for LED luminaires and LED integral replacement lamps