



**SSL Residential Fixture Design Competition
2010 Entrant Guide**

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Organizing Sponsors

Lighting for Tomorrow is jointly sponsored and organized by the American Lighting Association (ALA), the Consortium for Energy Efficiency (CEE), and the U.S. Department of Energy (DOE), represented by Pacific Northwest National Laboratory (PNNL).

ALA is the only trade association uniting lighting manufacturers, showrooms/distributors, manufacturer representatives, component manufacturers, and industry-related companies dedicated to providing the public with quality residential lighting. ALA has over 1,200 corporate members across the U.S., Canada and the Caribbean.

CEE is a non-profit public benefits corporation, working in the US and Canada, that promotes the manufacture and purchase of energy-efficient products and services. CEE's goal is to induce lasting structural and behavioral changes in the marketplace, resulting in the increased adoption of energy-efficient technologies.

DOE's Building Technologies Program conducts research and development on technologies and practices for energy efficiency; partnering with states, industry, and manufacturers to improve the energy efficiency of new and existing buildings. PNNL is a DOE multi-program national laboratory that delivers breakthrough science and technology to meet key national needs.

Co-Sponsors

Lighting for Tomorrow is co-sponsored by energy efficiency program administrators such as electric utilities, nonprofit groups, and state energy offices that have a significant interest in promoting energy-efficient residential lighting. These sponsors have provided both financial and in-kind support to the competition. For the complete list of sponsors, visit the Lighting for Tomorrow web site at www.lightingfortomorrow.com.

Purpose

The purpose of Lighting for Tomorrow is to increase the market availability of energy-efficient residential lighting fixtures/ replacement lamps and to increase the marketing, promotion, and sales of such products through primary distribution channels for the new construction and renovation markets. In 2010, the SSL design competition seeks to encourage innovation in the use of new light sources by recognizing residential lighting fixtures and lamps that use SSL technology (i.e., light-emitting diodes or LEDs) to achieve lighting quality and energy efficiency.

Timeline

2010 competition announced	International Lighting & Accessories Market – Dallas, TX	January 14-18, 2010
	DOE Annual SSL R&D Workshop – Raleigh, NC	February 2-4, 2010
Intent-to-submit forms due	See www.lightingfortomorrow.com	April 14, 2010
All entries due	Entrants will receive the mailing address via email	May 21, 2010
Judging Session	TBD	June 2010
Winners notified	Via phone and email	July 2010
Winners announced	ALA Conference – Las Vegas, NV	September 2010

Awards

Winners will be announced during an award ceremony at the ALA Annual Conference and winning products will be promoted throughout the ensuing year in full color publications, the Lighting for Tomorrow website, articles and press releases, and a traveling exhibit.

Judging Panel

The judging panel for the 2010 SSL competition will consist of approximately 10 individuals, including lighting retailers, lighting designers, home builders, LED researchers, energy efficiency program sponsors, and lighting and design media representatives.

Participants

The SSL competition is open to LED, lighting, lighting system, and luminaire manufacturers, including LED device and system manufacturers in conjunction with their luminaire manufacturing partners.

Submission Categories

Categories include but are not limited to:

- Undercabinet kitchen lighting
- Portable desk task lights
- Recessed, surface, and pendant-mounted downlights
- Ceiling-mounted luminaires with diffusers
- Cove lighting
- Surface-mounted luminaires with directional heads (e.g. vanity or track lighting)
- Outdoor wall-mounted porch lights
- Outdoor step lights
- Outdoor pathway lights
- Outdoor pole/arm-mounted decorative luminaires
- Table and floor lamps
- Torchieres
- Chandeliers
- Wall sconces
- Pendant uplights
- Landscape lighting
- Replacement lamps (e.g. a-lamps, MR-16s, decorative candelabra style lamps)

Product Criteria

- The competition is open to designs with primary applicability in the residential sector, or in residential-style applications such as hospitality and assisted living environments. Designs that would be appropriate exclusively in commercial, industrial, or institutional settings are outside the scope of the competition and should be entered in the Next Generation Luminaires SSL Design Competition (www.nglcdc.org).
- White light, general illumination applications only.
 - Participating LED products must provide useful illumination for a task, space, or object.
 - Holiday lights, light sculpture, lighted fabrics, lighted signs, color changing lights, and other products not designed for general illumination are outside the scope of the LFT program and competition.
- Fixtures intended for indoor or outdoor applications may participate.
- Entrants must submit prototypes or production-quality fixtures. Paper designs, computer renderings, and/or product photographs may be submitted as supplementary material, but at least one working prototype or production-quality fixture must be submitted in fully operable condition, including LEDs, drivers, and necessary controls.
 - A prototype is defined as a fully functional representative of the fixture design that will serve as the basis for evaluation, demonstration, and further development.
 - A production fixture is defined as a fixture with the same composition and materials as fixtures currently in production.
- Only fixtures intended for grid-connected applications are included. Off-grid and battery operated devices are outside the scope of this competition.

Technical Requirements

The luminaire efficacy requirements are listed below:

<u>Application Category</u>	<u>Minimum luminaire efficacy (lm/W)</u>
Replacement lamps	40 lm/W
Recessed, surface and pendant mounted downlights	35 lm/W
All other applications	25 lm/W

Requirements for color appearance and color rendering are as follows:

Allowable CCTs (all applications)	2700 K, 3000 K, 3500 K
CRI	Interior: 80 Exterior: 75

Entrants will not be required to submit luminaire photometric data but entrants are highly encouraged to provide data based on the IESNA LM-79008 test procedure if available. Entries selected as finalists by the judging panel will be subjected to photometric and electrical testing by an independent testing laboratory to verify performance. Entrants will not be charged fees for this testing.

Required Documents

An online Intent-to-Submit form must be submitted to competition organizers by April 14, 2010. A Final Submission form must be submitted online by May 21, 2010 (check the [Lighting for Tomorrow website](#) for specific deadlines). The following documentation (submitted via email) should be included with each entry:

- Full published LED data sheet
- Driver specification sheet
- IES LM-63-03 formatted test report following IES LM-79-08 (.ies format) (if available)
- Integrating sphere output report showing luminaire CRI, CCT, and spectral power distribution (if available)
- Dimming interface specification sheet (if applicable)
- Installation/serviceability instruction sheet
- Product photos
- Marketing materials

Entries consisting of one working product sample should be sent to the judging location with a printed and signed version of the final submission form. Any proprietary information should be marked as such. Entries arriving without a completed submission form will not be considered.

Evaluation Procedure

Evaluation of LFT entries will take place in the following stages:

Initial screening

LFT organizers will screen entries by reviewing each submittal to verify that all required documents are included (see required documents section). The product will also be evaluated to make sure all parts necessary to mount the luminaire in its intended application are included and that the luminaire functions properly.

In-person judging

The judging panel will meet in-person to evaluate the entries (see evaluation criteria). Fixtures will be installed and connected to power.

Performance Verification of Finalists and Other Promising Entries

Luminaires selected as finalists will be photometrically tested by independent testing laboratories to evaluate luminaire efficacy, to verify color characteristics, and to identify potential problems such as excessive operating temperatures, low light output, and noticeable color shifts. Entries will be evaluated against published ENERGY STAR requirements as appropriate. Test results will be provided to the manufacturer.

In addition, other promising entries will also be photometrically tested by independent testing laboratories to evaluate luminaire efficacy, to verify color characteristics, and to identify potential problems such as excessive operating temperatures, low light output, and noticeable color shifts. Test results of these products will be provided to the manufacturer and anonymously published in a technical report along with all the finalists. (This technical report is separate from the winner brochures)

Entrants will not be charged for the costs of photometric testing.

Evaluation Criteria

Judges will score each entry according to the following criteria:

- Color appearance - Evaluation of this criterion will be based on the judging panel's subjective evaluation of the color appearance of the installed fixture. Manufacturer data about CCT of the LED sources must be provided. CCT of finalists will be verified through LM-79-08 testing as necessary.
- Color rendering - Evaluation of this criterion will be based on the judging panel's subjective evaluation of the color appearance of objects illuminated by the installed fixture. Manufacturer data about CRI of the LED sources must be provided for indoor fixtures. CRI of finalists will be verified through LM-79-08 testing as necessary.
- Appropriate illuminance - Horizontal and/or vertical illuminance for the application must be appropriate according to accepted lighting practice. Evaluation of this criterion will be based on the judging panel's subjective evaluation of the light levels provided by the fixture, and may also include measurement of light levels using a standard illuminance meter, with results compared to IES recommended practice for the application, as available.
- Application efficiency - The fixture must deliver appropriate light levels to the task with lower wattage than comparable traditional light sources for that task. Evaluation of this criterion will be based on assessment by the SSL judging panel. Fixture input watts will be verified with a watt meter.
- Aesthetic appearance and style - Evaluation of this criterion will be based on the judging panel's subjective evaluation of the aesthetic appearance of the installed fixture.

The judging panel may award bonus points for entries exhibiting desirable characteristics. Bonus points will be available for the attributes listed below; additional bonus points may be identified by the judges.

- Innovation - Entries that demonstrate innovation in taking advantage of the unique characteristics of LEDs (form factor, durability, weight, beam characteristics, ability to tune color appearance, etc.). Evaluation of this criterion will be based on the judging panel's subjective evaluation of the fixture's innovative qualities.
- Dimmability – Indoor entries capable of dimming continuously from 100% light output to at least 20% of full output. Judges will look for smooth transitions, no flicker at lower levels, and no perceptible color shift toward cooler colors (warm color shift OK).

- No off-state power use - fixture designs that do not draw power when the fixture is turned off. Up to 0.5 W is allowed for luminaires with photo or occupancy controls.
- Dark-sky friendly - outdoor fixtures that are shielded to limit upward light emission.
- Other bonus points may be awarded at the discretion of the judging panel.