



**SSL Residential Fixture Design Competition  
2009 Entrant Guide**

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### Organizing Sponsors

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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](http://www.lightingfortomorrow.com).

## Purpose

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The purpose of Lighting for Tomorrow is to increase the market availability of energy-efficient residential lighting fixtures and to increase the marketing, promotion, and sales of such fixtures through primary distribution channels for the new construction and renovation markets. In 2009, the SSL design competition seeks to encourage innovation in the use of new light sources by recognizing residential lighting fixture and application designs that use SSL technology (i.e., light-emitting diodes or LEDs) to achieve lighting quality and energy efficiency.

## Timeline

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2009 competition announced	International Lighting & Accessories Market – Dallas, TX	January 14-18, 2009
	DOE Annual SSL R&D Workshop – San Francisco, CA	February 3-5, 2009
Intent-to-submit forms due	See <a href="http://www.lightingfortomorrow.com">www.lightingfortomorrow.com</a>	March 27, 2009
All entries due		April 24, 2009
Judging Session	CSA	May 14-15, 2009
Winners notified	Via phone and email	July 2009
Winners announced	ALA Conference – Palos Verdes, CA	September 13-15, 2009

## Awards

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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

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The judging panel for the 2009 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

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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

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The submission categories for the 2009 competition for SSL-based lighting fixtures include:

- Kitchen under-cabinet lighting
- Portable desk/task lights
- Recessed downlights
- Surface and pendant-mounted downlights
- Ceiling mounts with diffusers
- Cove lighting
- Surface-mounted luminaires with directional heads (e.g. vanity or track lighting)
- Table and floor lamps
- Torchieres
- Chandeliers
- Wall sconces
- Pendant uplights
- Outdoor porch
- Outdoor step
- Outdoor pathway lights
- Outdoor post-top luminaires
- Landscape lighting

## Product Criteria

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- 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](http://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

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- Minimum LED Efficacy - Required minimum LED luminous efficacy: 50 lm/W. Evaluation of this requirement will be based on LED datasheet information for the specific LEDs used in the fixture. It will be calculated as minimum luminous flux (lumens)/(test current (amps)\*typical forward voltage).
- Allowable CCTs - 2700 K, 3000 K, 3500 K,
- Allowable CRI - Interior: 80 Exterior: 75

Entrants will not be required to submit luminaire photometric data but are encouraged to submit luminaire photometric reports if available.

## Required Documents

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An online Intent-to-Submit form must be submitted to competition organizers by March 27, 2009. A Final Submission form must be submitted online, with the following documentation (submitted via email):

- Full published LED data sheets (or at a minimum, luminous flux, forward voltage, drive current, and color data for pre-production devices).
- Information on drivers used in submitted fixtures.
- Photometric reports, if available. Photometric performance of all products selected as finalists will be verified, including additional testing by independent testing laboratories according to IESNA LM-79-08, as needed.
- Product photo.
- Other product specification sheets, if available.

Entries consisting of one working product sample should be sent to the judging location by April 24, 2009 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

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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

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.

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

## **Evaluation Criteria**

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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.