

## Lighting Competitions for 2009 Raise the bar for SSL Products and Visibility

Three major energy efficiency and solid state lighting (SSL) competitions took place in 2009 leading to accelerated advancements and awareness of technologies. The L Prize competition aims to accelerate development and adoption of SSL products to replace the common light bulb. The Next Generation Luminaires competition recognizes distinction in the design of energy-efficient LED commercial lighting luminaires. Finally, Lighting for Tomorrow recognizes innovative, attractive, energy-efficient residential lighting design.

### The L Prize

Established through the Energy Independence and Security Act of 2007, the L Prize was launched to help advance industry in the development of the highest efficiency LED replacements for the common light bulb. The competition is divided into categories for 60-watt incandescent, PAR 38 halogen lamps and a third category for the 21<sup>st</sup> Century Lamp targeting bulb efficiencies of 150lm/W will be a future L Prize category.

By submitting in September 2009, Philips Electronics was the first to enter its LED replacement for the 60-watt incandescent bulb category in the U.S. Department of Energy's (DOE) L Prize competition. To qualify, submissions must meet the following

criteria:

- 90 lumens per watt,
- exceeding today's efficiency standard of 10 to 60 lumens per watt;
- less than 10 watts energy consumption, compared to a 60-watt incandescent;
- 900 lumens output or more;
- Color Rendering Index (CRI),
- a measure of light quality greater than 90;
- and a color temperature between 2700-3000 degrees Kelvin (comparable to an incandescent bulb's "warm" white light).



*Image source: [www.lightingprize.org](http://www.lightingprize.org)*

Each year households purchase 425 million bulbs. If these bulbs were LEDs, 34 terawatt-hours of electricity would be saved annually and 5.6 million metric tons of carbon emissions would be eliminated. Time magazine's November 23, 2009 issue listed Philips' entry as one of the *50 Best Inventions of the Year*. Since the 60-watt incandescent bulb accounts for 50 percent of the US's market share, the energy saved by shifting over to LEDs could light an additional 17.4 million homes. Formative testing has shown that the Philips' LED bulb uses less than 10 watts and lasts for 25,000 hours, or a lamp life 25 times greater than the current incandescent. To read the full article, go to [Time 50 Best](#).

While the requirements for the winning entry are quite stringent, the winning manufacturer will be rewarded with a considerable cash prize of \$10 million. Moreover, they will be considered for federal purchasing agreements, utility programs and other incentives. To qualify, a manufacturer's submission must meet rigorous testing for performance, quality, lifetime, cost and availability that would lead to large-scale acceptance and large scale manufacturing.

As the only submittal in 2009, Philips holds an advantage over subsequent submissions, and is currently undergoing extensive, long-term photometric testing to verify its performance as

will all qualifying entries. It is expected the winner will be announced in October/November 2010. Based on continuing inquiries, DOE's Solid-State Lighting Program Manager Jim Brodrick states that "The race is on. The field is wide-open, and we hope to see more entries from both large and small manufacturers." The competition will award up to three (3) winners in the 60-watt category. ([www.lightingprize.org](http://www.lightingprize.org))

### **Next Generation Luminaires**

Winners of The Next Generation Luminaires (NGL) SSL Design Competition will be announced in January, 2010.

Meant to inspire innovative lighting designs from manufacturers, the competition for commercial, institutional or public sector includes quality luminaires that meet the practical needs of the commercial market including functional illumination for task, space or object. The judges are comprised of members of the architectural lighting design community resulting in a panel of experts who are specially qualified to design, specify, evaluate, and research commercial SSL luminaires. Their task is to assess energy-efficient products of the highest quality that meet the criteria for light consistency, glare control, lumen maintenance and appearance. As there are a wide variety of applications and approaches that meet the competition requirements, the NGL competition will acknowledge all products that are deemed merit-worthy, as well as signify those considered "best in class".

Residential lighting is out of the scope of this competition. Only complete luminaires could enter while replacement bulbs were not evaluated. This competition did not include signage, colored lights, or any other specialty lighting beyond the extent of white light general illumination. Both indoor and outdoor functional lighting is accepted, and entries must be in or near production and ready for specification to qualify.

The NGL competition was announced on May 5, 2009 at the LightFair International trade show and conference in NYC, New York and entries were due November 13, 2009. Judging at Underwriters Laboratories (UL) took place December 3-4, 2009. Winners will be notified by phone in January 2010 and announced at the Strategies in Light exhibit in Santa Clara, CA on February 10, 2010.

The products chosen will be rewarded with promotions in a full color catalogue of competition winners following the judges' announcement. These products will also be showcased on the Next Generation Luminaires website [www.nglhc.org](http://www.nglhc.org), highlighted in articles and press releases, and be part of 2010 NGL traveling exhibits.

### **Lighting for Tomorrow**

Illustrating the best in residential lighting fixtures, the *Lighting for Tomorrow* (LFT) competition awarded two Grand Prize Winners and five other entries received the Special Focus Awards for their successful incorporation of important design considerations in the Fall of 2009. The competition evaluates product designs of attractive, energy-efficient fixtures. Its overarching goal is to alert the consumer that quality lighting currently exists AND saves money and energy. When manufacturers meet the needs of the general public with new designs and technologies, market acceptance grows and supports ongoing opportunities toward future innovation in energy-efficient lighting.

The 2009 criteria for LFT focused on the dimming lamp and fixture. All entrants had to meet the Energy Star (ESTAR) residential light fixture or ESTAR compact fluorescent lamp (CFL)

criteria. Judges evaluated products which are paving the way for development of high quality, energy efficient dimmers that meet consumer needs. The competition evaluation was performed by a diverse body representing a variety of residential lighting interests and aspects. The product evaluations were based on dimmer box compatibility, retail availability, dimming capabilities allowing 80% reduction from full output, color quality and consistency, dimming smoothness, and more. Additional bonus points were awarded for ease of operation and installation.

The following describes the categories of evaluations that met dimming requirements as per ESTAR CFL criteria version 4.0 (RLF v4.0):

- Linear and cluster lamps including spiral CFLs
- A-line CFLs
- Globe CFLs
- Candelabra-based CFLs and Reflector CFLs

Dimmer controls were only eligible if they are integral and submitted with either a lamp or fixture.

On September 15, 2009 at the American Lighting Association Annual (ALA) Conference in Palos Verdes, California, the following two Grand Prize Winners were announced:

- Cree LED Lighting High Output Six Inch Downlight LR6-DR1000
- Philips Color Kinetics *eW<sup>®</sup> Cove QLX Powercore*



*LR6-DR1000*



*eW<sup>®</sup> Cove QLX Powercore*

Additionally, five other entries received the Special Focus Awards for their successful incorporation of important design considerations:

- High Efficiency—Cree LED Lighting High Efficacy Six Inch Downlight
- Versatility—Lightolier Calculite Solid-State
- Technical Innovation—Cree LED Lighting SSL Track Fixture
- Light Distribution—MaxLite LED Architect Flat Panel
- Ease of Installation—Creative Systems Lighting Eco Counter



*Page 3 image source: [www.lightingfortomorrow.com](http://www.lightingfortomorrow.com)*

Congratulations to all of the winners! To learn more about these and other entries, go to [www.lightingfortomorrow.com](http://www.lightingfortomorrow.com).

For more information on these competitions and other TINSSL information, please visit [NEEP.org](http://NEEP.org) or [DOE's SSL website](#).