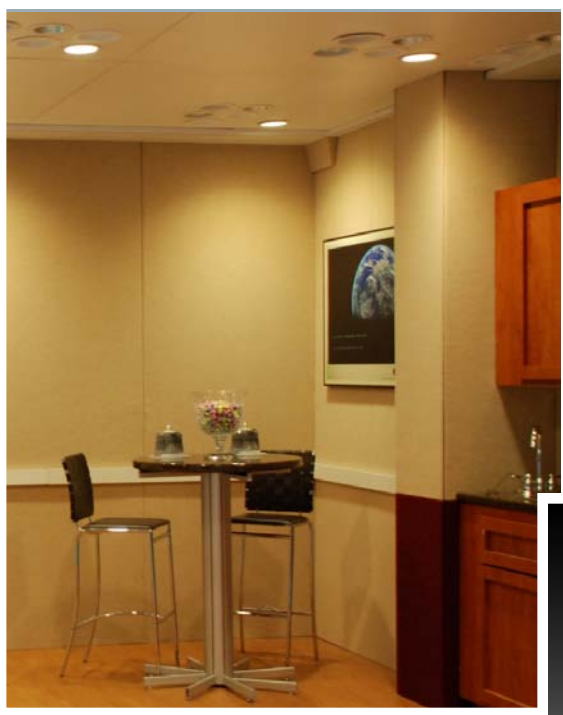


Solid-State Lighting Competition



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.2008



LIGHTING
for
tomorrow



Lighting for Tomorrow presents the winners of the 2008 solid-state lighting (SSL) competition. These innovative lighting fixtures combine the best current LED technology with innovative designs to provide high-quality, energy-efficient lighting for specific uses throughout the home. Look for them in the market soon.

What is solid state lighting?

SSL is the general term for light sources based on semiconductor materials. Light-emitting diodes (LEDs) are currently the most common, now appearing in a growing number of lighting fixtures and applications. Lighting for Tomorrow encourages high-quality, energy-efficient use of white LEDs for some specific household lighting applications. The 2008 competition invited entries in the near-term category capable of meeting DOE's ENERGY STAR® SSL 1.0 criteria including kitchen undercabinet, portable desk/task lamps, recessed downlights, and outdoor lighting. The competition also expanded this year to include other applications not included in the near-term category such as wall sconces, display lights, pendants, chandeliers, spot lights, vanity lights, and ceiling fans.

How were the winners selected?

The 2008 Lighting for Tomorrow judging panel evaluated 56 LED entries. Fixtures were judged on color appearance, color rendering, amount and distribution of light, overall aesthetic appearance, innovation, and application efficiency compared to standard lighting technologies. The judges scored each entry and selected winners in each lighting category. Each of the winners selected by the judging panel was then tested through DOE's CALiPER program to verify wattage, total light output, color temperature, color rendering, and power factor.

Are LEDs ready for prime time?

The winning fixtures shown here represent very promising developments in LED lighting. The 2008 winners are at least as energy efficient as CFL-based fixtures and, in some cases, even more efficient. But it is still very early in the market development process for LED lighting:

- We don't yet have long-term experience with white LEDs in general illumination applications. Well-designed products should last more than 30,000 hours (compared to 1,000 for

incandescent and 10,000 for CFLs), but only time in a host of real-world operating conditions will tell.

- Production capacity for LED lighting products remains small, so they are still more expensive to purchase and more difficult to procure in quantity, relative to traditional lighting products.
- Industry standards for testing and verifying the performance of LED products are just now being published. The photometric testing (LM-79-08) and chromaticity/color (ANSI C78-377-2008) standards were both published in 2008 and the lifetime standard (LM-80) is nearing completion. These standards can help buyers evaluate LED products to verify that their light output, distribution, energy use, power characteristics, and color quality meet the needs of the desired lighting application.

For more information, visit <http://www.netl.doe.gov/ssl>

Luminaire efficacy is the total light emitted by the fixture divided by its wattage, expressed in lumens per watt (lm/W). Luminaire efficacy accounts for driver losses, thermal effects, and fixture optical losses. Fluorescent lamps are usually rated for lamp or system efficacy, which doesn't include thermal or fixture losses. Because LED performance depends on how they are integrated into a fixture, measurements are performed on the luminaire as a whole.

2008 Near-term Awards

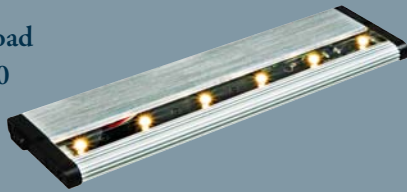
Winner –

Kichler Lighting, Design Pro Series Undercabinet

The 2008 Lighting for Tomorrow judges selected the Kichler® Design Pro Series™ LED lighting system as the winner in the kitchen undercabinet category. The design received high marks for even light distribution and excellent color quality.

The slim line, half-inch profile of the undercabinet fixture is nearly invisible under most cabinet configurations. Fixtures come in six-, twelve-, and eighteen-inch lengths and include a new addition of the LED Bright Disc.™ These ultra-thin, 3/8 inch profile aluminum discs have a 2 3/4 inch diameter and provide a warm white, energy-efficient light under and around cabinets.

Kichler Lighting
7711 East Pleasant Valley Road
Cleveland, Ohio 44131-8010
1-800-659-8809
www.kichler.com



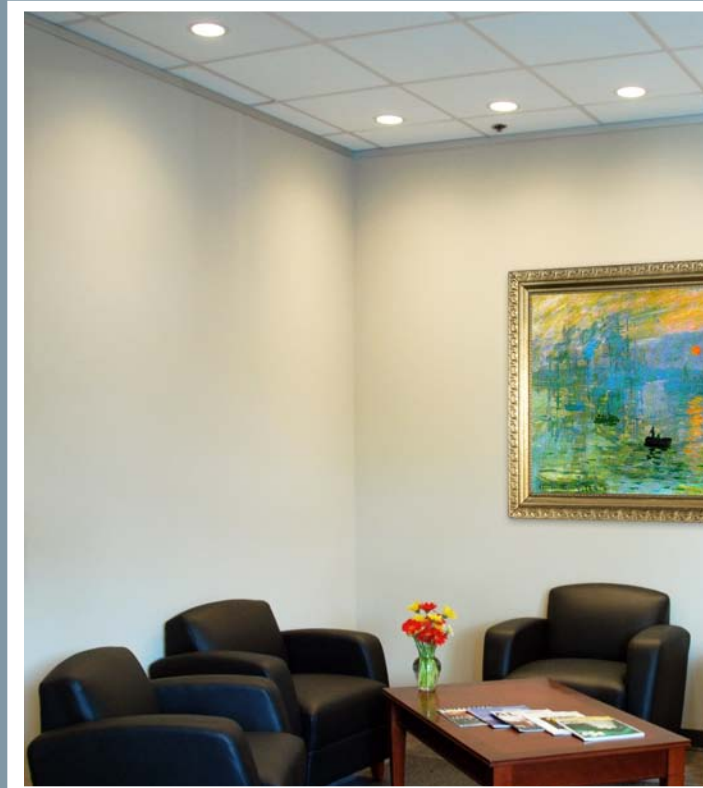
Luminaire Measurements*
Wattage: 11 watts
Light output: 407 lumens
Luminaire efficacy: 37 lm/W
CCT: 2945 K CRI: 96
Power Factor: 0.78



Winner –

Cree LED Lighting Solutions, LR4 Recessed D

For the second year, Cree LED Lighting Solutions (formerly LLF) was awarded the top honors in the recessed downlight category. This year their 4 inch can, LR4, was recognized for its superior energy efficiency and color quality. The architectural downlight is designed for use in commercial and residential applications and is available with a moderate or deep recess angle



offering flexibility to meet diverse lighting design requirements. It creates light in a new way that enables an unprecedented combination of light output, efficacy, beautiful color, and affordability.

Cree LED Lighting Solutions
635 Davis Drive, Suite 100
Morrisville, NC 27560
919-991-0700 www.creell.com

Luminaire Measurements*
Wattage: 11 watts
Light output: 554 lumens
Luminaire efficacy: 52 lm/W
CCT: 2709 K CRI: 94
Power Factor: 0.97

Applications Winners

Downlight



nts. The LR4 gen-
combination of light out-



Winner –

Luximo, Cylindrium Desk/Task Light

Luximo's Cylindrium LED Task light was selected as the winner in the desk/task light category. The judges were impressed by the elegant thermal design, superior color quality, high light output, and even light distribution. The high-efficiency luminaire fulfills the promise of energy efficiency without sacrificing light quality in a beautiful form. The light output is dimmable with a warm color temperature and high color rendering index. The versatile head positioning allows the lamp to function as a low glare traditional desk lamp as well as a wall or ceiling wash.

Luximo
1531 Oriole Avenue
Sunnyvale, CA 94087
415-225-4168
www.luximoled.com

Luminaire Measurements*
Wattage: 12 watts
Light output: 582 lumens
Luminaire efficacy: 47 lm/W
CCT: 3336 K CRI: 87
Power Factor: 0.78



Honorable Mention –

Digital Lighting Inc., MP-400 Desk/Task Light



Digital Lighting Inc.'s MP-400 desk lamp received an honorable mention for its color quality and color adjustment features. The lamp provides tunable white light to suit individual reading preference and the four directional light sources provide the user with flexibility to adjust the light to its source.

Digital Lighting, Inc.
2711 Centerville Road
Suite 400
Wilmington, DE 19808
408-624-6168
www.digitallightinginc.com

Luminaire Measurements*
Wattage: 8 watts
Light output: 268 lumens
Luminaire efficacy: 35 lm/W
CCT: 3085 K CRI: 85
Power Factor: 0.86

**Reported data is based on photometric testing of luminaire samples submitted to Lighting for Tomorrow. Samples were tested through DOE's CALiPER testing program.*

Other Applications Awards

Honorable Mention, Efficacy – Cree LED Lighting Solutions, LR24

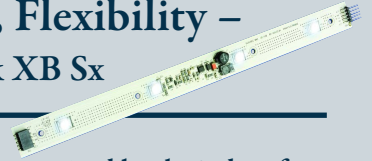
The judges elected to award Cree's LR24 product an honorable mention for its superior efficacy and innovative approach. The LR24 is an architectural lay-in that delivers unprecedented LED fixture performance. It utilizes Cree technology that generates white light with LEDs in a new way and combines high efficacy, beautiful color, and affordability. The use of this technology releases the design constraints of traditional lay-ins and enables a fresh approach to the architectural appearance of the light. It also allows an



optimal distribution of light that delivers high light levels to horizontal surfaces, balanced with an ideal amount of light to vertical surfaces, resulting in an effective, attractive, and comfortable environment.

<p>Cree LED Lighting Solutions 635 Davis Drive, Suite 100 Morrisville, NC 27560 919-991-0700 www.creells.com</p>	<p>Luminaire Measurements* Wattage: 46 watts Light output: 3366 lumens Luminaire efficacy: 72 lm/W CCT: 3491 K CRI: 89 Power Factor: 0.97</p>
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Honorable Mention, Flexibility – Osram Sylvania, HF2Stick XB Sx



The HF2Stick XB Sx-Series was recognized by the judges for its flexibility in a variety of display applications. The OSRAM product is a high-performance, high-brightness linear LED module. Each board contains integrated 5-pin mating



connectors that allow for easy installation and board-to-board connection. The HF2Stick XB Sx-Series of products are optimally paired with OSRAM SYLVANIA power supply and heatsink. The LED modules can easily be placed within the heatsink by means of standard 4-40 screws. The HF2Stick XB Sx Series can achieve a variety of color temperatures and it does not radiate ultra violet or infrared light.

<p>OSRAM SYLVANIA 100 Endicott Street Danvers, MA 01923 1-800-LIGHTBULB www.sylvania.com</p>	<p>Luminaire Measurements* Wattage: 6 watts Light output: 215 lumens Luminaire efficacy: 34 lm/W CCT: 2798 K CRI: 79 Power Factor: 0.92</p>
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Honorable Mention, Design – Journée, LOTUS LED Luminaire

The Journée LOTUS spotlight was given an honorable mention for its innovative heat sink design, even though the judges see room for improvement in the light output and efficacy of the product. The luminaire features an aluminum housing which was designed to not only appeal to the eye, but also to serve as an active heat sink. The LOTUS is available in a wide range of color temperatures and various beam angles. It includes an onboard 3-position WattageAdjust® switch that provides a choice of three brightness settings of 6W, 11W and 16W.

<p>Journée Lighting 4607 Lakeview Canyon Road, Suite 500 Westlake Village, CA 91361 800-886-1880 www.journeelighting.com</p>	<p>Luminaire Measurements** Wattage: 11 watts Light output: 279 lumens Luminaire efficacy: 26 lm/W CCT: 3068 K CRI: 78 Power Factor: 0.99</p>
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** Results are for the 11 watt brightness setting.

Lighting for Tomorrow is a lighting fixture design competition sponsored by the American Lighting Association, the Consortium for Energy Efficiency, and the U.S. Department of Energy, represented by Pacific Northwest National Laboratory. Since 2003, the competition has recognized the best in energy-efficient lighting for the home. The CEE member utilities and energy efficiency programs shown below have contributed direct support to the 2008 competition.



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www.lightingfortomorrow.com