



LIGHTING
for
tomorrow

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Pacific Northwest National Laboratory

DOE Voices for SSL Efficiency Workshop

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Organizers

- American Lighting Association
- Consortium for Energy Efficiency
- U.S. Department of Energy
– Represented by PNNL

american
lighting
association



*Working Together,
Advancing Efficiency*



LIGHTING
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tomorrow



Objectives

- Encourage and recognize attractive, energy-efficient residential lighting fixtures.
- Build demand for energy-efficient lighting by demonstrating that it can be highly attractive and functional.
- Encourage technical innovation in energy-efficient lighting.



2004



Competitions to date

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2006

2006

Indoor Fixture Families

Of nearly 60 indoor and outdoor lighting fixture families that competed to appear in the Yearbook, the judges selected 26 fixture families. In the indoor category, 7 designs were selected as 2006 Lighting for Tomorrow winners, while 12 additional designs were awarded honorable mention. In the outdoor category, 3 designs were designated as winners, with 4 others earning honorable mention. These designs were submitted by the twelve manufacturers listed below. Lighting for Tomorrow congratulates each of the award-winning manufacturers and their design teams for their outstanding achievement.

- Good Earth Lighting
- Sea Gull Lighting
- Lithonia Lighting
- Hunter Lighting Group
- American Fluorescent
- Kichler
- Deancoins
- Delan Designs
- Progress Lighting
- Eclipse Lighting
- Justice Design Group
- Quorum International



Lighting for Tomorrow Winners



San Miguel p.14



Carlisle & Grace p.16



Neo-Steele p.18



Sanctuary p.20



Aria Series p.22



Olympia p.24



Xena p.26

Honorable Mentions



Dakota™ Melted Rim p.28



Bend™ p.29



Dakota™ Broken Rim p.30



Dauphine p.31



International p.32



Meloe p.33



GREEN Series p.34



Restoration Series p.35



Glasgow Series p.36



Facets Series p.37



Sylvan Park p.38



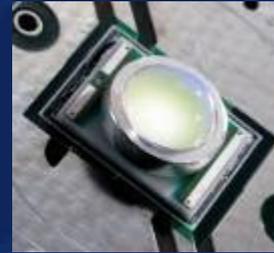
Rice p.39

LIGHTING
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2005
Design & Technology Competition

2005

LIGHTING
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First SSL competition



- Objectives
 - Explore use of LEDs in niche applications
 - Evaluate fixtures employing LEDs
 - Facilitate learning by lighting fixture industry
- Advocate high-quality, energy-efficient use of LEDs
- Publicize within lighting community rather than mass market



Winner – Undercabinet

- **Diode 28 by American Fluorescent**
 - 5 watts
 - Introduced at Dallas Market



Winner – Undercabinet

- **Linear by Lucere Lighting**
 - 18 watts



Winner – Portable desk/task

- **Halley by Lucesco**
 - 19 watts; dimmable
 - Floor lamp version



Winner – Outdoor

- **Lakeland by Progress Lighting**
 - 3.5 watts
 - Complete family of fixtures



Honorable Mention for LED Application

In-Cabinet Lighting



LED Bullet
American Lighting LLC



HF2Eye
Osram Sylvania



Honorable Mention for Innovation

- **Javelin by Albeo**
 - Moveable, individually controlled, removable driver, replaceable LED modules



Honorable Mention for Innovation

- **Luxrail by io Lighting**
 - **ADA-compliant**
 - **2 – 8 W/ft**



Issues identified

- "Pixelated" shadowing in linear undercabinet fixtures
- Off-state power consumption
- Color consistency
- Unrealistic performance claims



2007 Competition

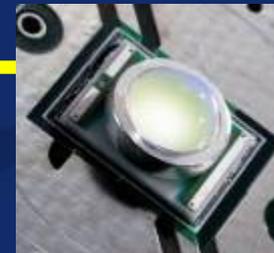


One competition, two categories

- CFL fixture families
 - Indoor and outdoor
 - Meet ENERGY STAR



- LED-based fixtures
 - Niche applications
 - Cutting edge design category



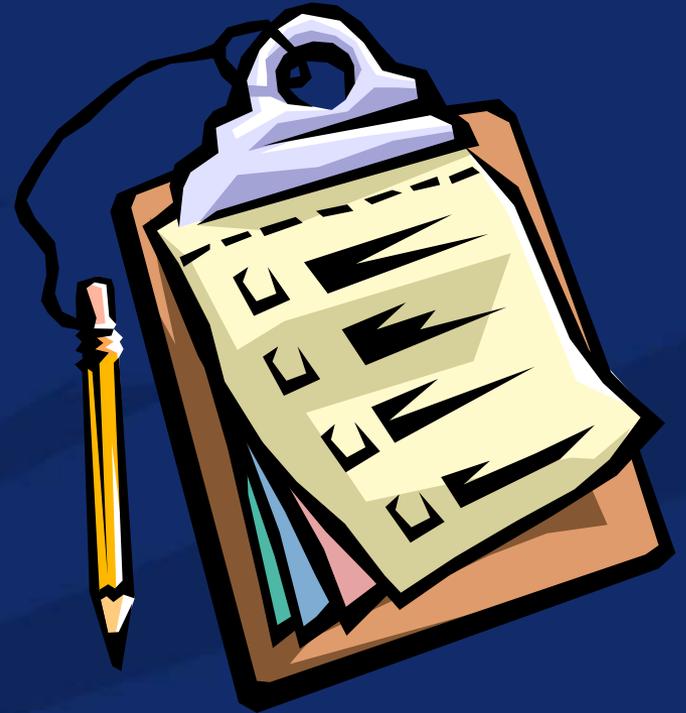
Luminaire types

- Niche applications
 - Undercabinet and in-cabinet
 - Portable desk/task
 - Outdoor porch, path, step
 - Recessed downlights
- Cutting edge design category
 - Not restricted to niche applications
 - Think outside traditional fixtures



Minimum requirements

- No screw-based fixtures
- LED luminous efficacy
 - 40 lm/W for < 5000K
 - 50 lm/W for 5000K +
- Driver efficiency
 - 85% minimum
- LED life
 - 35,000 hours to 70%



Judging criteria

- Lighting quality
 - Color appearance
 - Color rendering
 - Illuminance levels and distribution
- Application efficiency
- Thermal management
- Aesthetic appearance



Bonus points for:

- Innovation
 - Designs that take advantage of unique LED attributes
- No off-state power consumption



Who can participate

- Niche applications
 - Manufacturers
 - Independent designers and students ONLY if partnered with a manufacturer
- Cutting edge design category
 - Manufacturers
 - Independent designers
 - Students



What to submit

- Niche applications
 - Prototype or production luminaire
 - Cutting edge design category
 - Prototype or production luminaire
- OR
- Working model



Timeline

- May 31 – Entries due
- June/July – Judging
- Sep 10 – Announce winners
 - ALA conference in San Antonio



Follow-on

- Publicity
 - Brochure similar to 2006
 - Press
- Show and tell
 - LED conferences
 - Dallas Market
 - Light Fair
 - Energy efficiency organizations & utilities

Blade 20 by American Fluorescent, Washington, DC
<http://www.americanfluorescent.com>
Voltage: 5 watts (equivalent to the light fixture)
Available by January 2007

The Blade 20 is a recessed lighting fixture designed by Stephen Beckman to have a unique multi-layer appearance and provide superior light distribution with low glare. The easy-to-install design includes a replaceable lighting option with an illuminated arch. The fixture provides good color, high efficiency, and ability to adjust the light level.

Linear by Lumen Lighting, Huntington Woods, MI
<http://www.lumenlighting.com>
Voltage: 18 watts
Availability: Currently available. Visit website for local sales representatives.

Capable of emitting the lowest level of UVB, this fixture was designed for use in healthcare, food, and aquatic lighting. The LED Aperture fixture provides excellent illumination for small- to medium-depth applications.

Rally by Lumen, Palo Alto, CA
<http://www.lumen.com>
Voltage: 20 watts (equivalent to the light fixture)
Availability: Currently available. Visit website for local dealer.

Rally, the first truly functional LED desk lamp, is a perfectly round, minimalist, user-centric statement designed by Richard Tappin for Lumen. The adjustable counter-top system allows the user to be positioned exactly and precisely to provide light where it is needed.

Labeld by Progress Lighting, Spartanburg, SC
<http://www.progresslighting.com>
Voltage: 25 watts
Available by January 2007

Labeld brings the benefits of recessed LED lighting to the outdoors. With warm-white, 5,000K color temperature light output, this compact, weather-resistant fixture is ideal for lighting a headland or other outdoor glass.

Winners These fixtures were selected as winners of the first Lighting for Tomorrow SSL competition.



The image displays four winning lighting fixtures in a row, each in a white-bordered box with a dark blue caption below it. From left to right: 1. Blade 20: A square, recessed ceiling fixture with a grid of small LEDs. 2. Linear: A long, thin, rectangular LED strip light. 3. Rally: A desk lamp with a circular base and a long, adjustable arm. 4. Labeld: A cylindrical, outdoor-rated light fixture mounted on a wall.



For more information:

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