



LUMEN INSIGHTS®

2013 Issue 2

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Components and Accessories

UL delivers the latest news concerning LED lighting components, controls, optics and standards.

Consumer

Find articles developed for energy saving lighting products focusing specifically on the residential market.

Professional

In-depth news for commercial, industrial, municipal and institutional lighting products for large-scale and public use.

UL Selected as Authorized Standard Developer for Canada

By Tom Blewitt / Director, Primary Designated Engineers



In 1973 the Standards Council of Canada (SCC) accredited four standards development organizations (SDO's) to produce Canadian National Standards. They have served the market well for many years but it has become increasingly difficult for standards bodies to keep up with safety hazards, new technology and marketplace expectations

of the rapidly evolving modern world. A solution chosen by SCC was to expand the number of SDO's so that more resources could be applied to the challenge.

Hence, UL was recently accredited by SCC to develop National Standards of Canada.

In a news release issued by SCC, Chief Executive Officer John Walter stated: "With additional SCC-accredited standards development organizations operating

in Canada, SCC is able to offer more standardization solutions to better serve the needs of Canadian government, industry and consumers."

Accreditation from SCC allows UL to create standards solely for Canada along with fully harmonized bi-national standards for the Canadian-US marketplace. Where there is no standard in Canada, UL can utilize a single consensus body to develop a

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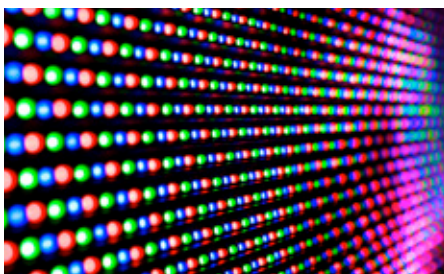
A Letter From Todd



Welcome to our second quarterly edition of Lumen Insights! It has been refreshing to hear a renewed sense of optimism

coming from many regarding the continued growth of the lighting industry in 2013 and beyond. At UL, we share that optimism and are eager to expand upon our strong partnership with the lighting industry. We are working hard in the Standards Development arena to keep pace with quickly evolving technology, and remain committed to further expanding and improving our current service offerings in order to assist the industry in bringing safe, high-quality lighting products to the marketplace. We appreciate your continued support and feedback, cheers!

Todd A. Straka
Business Development Director,
Global Lighting



COMPONENTS AND ACCESSORIES

Characteristics of Defined-fit Systems for Residential Lighting

By Joseph S Frederic / Principal Engineer, Lighting



When a lamp burns out in a traditional luminaire, compatible replacement lamps are available from many manufacturers. The user only needs a few pieces of information about the luminaire electrical rating, the lamp type and fit designation to identify a suitable replacement. Fit designations (e.g. E26, G13 and GU24) are codes used to control the interchangeability of lamps in luminaires that are part of a common defined-fit system. With the emergence of new modular solid-state light systems that require external heat sink for proper operation, new fit designations that take the additional thermal parameters into account are needed in order to achieve field replacement of light engines in a manner comparable to traditional Edison screw base lamps.

The following highlights four characteristics of defined-fit systems for traditional lamps (incandescent and fluorescent) that are particularly relevant to modular LED light engines.

First, established fit-systems are defined in controlled documents, such as ANSI and IEC standards, that are publicly available. Since defined-fit systems must be unique and exclusionary, it is important that the specifications for new systems be accessible to the public.

Second, the fit specifications are complete and define critical parameters for all the components that constitute the system. For traditional lamps this includes base type, lamp envelope shape and filament type and location; parameters that must be controlled to maintain interchangeability. For LED light engines, fit-systems will also need to define the parameters that control thermal compatibility between the light engine and its intended heat sink.

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PROFESSIONAL

UL 48 SignSmart Guide

New interactive general coverage design guide for the electric sign industry

By **Cliff Adams** / Senior Staff Engineer



The fast, easy to use, interactive UL 48 SignSmart Guide is now available at no charge from UL's Knowledge Services.

It can help answer questions such as:

- Is this sign design eligible for "General Coverage"?
- What needs to be changed to make the sign eligible for "General Coverage"?
- Is engineering evaluation required for this sign?

It provides convenient access to UL resources and services such as the latest Sign Component Manual (SAM), Online Certifications Directory, and on-line training.

UL's Sign Certification Program is based on

Electric Signs and other UL documents such as the Sign Component Manual (SAM) which identifies sign components and provides information on how to use the component. UL's most frequently used sign certification option is "General Coverage" where the sign is evaluated by one of UL's field staff at the sign factory. The "General Coverage" option is very popular with UL's sign customers, as it is a fast, cost effective certification solution that gives great design flexibility for custom built signs.

The UL 48 SignSmart Guide was developed to help UL's electric sign customers determine if

Scan code to use UL 48 SignSmart Guide or download.



their electric signs are eligible for evaluation under UL's "General Coverage" sign certification program. A Question/Answer format is used to quickly determine if a sign has construction features that are eligible for the "General Coverage" program. If the sign has the required construction features, it may be evaluated in accordance with the program requirements by UL's local field representative during his regular inspection. The UL 48 SignSmart Guide allows unlimited user access. It has navigation buttons that allow the user to Change Sign Type, Change Light Source, and Change Construction Features in order to explore various sign design features.

Other features of the guide include:

"Answer Guide" provides information on how to answer the question displayed on the screen.

"Tips" contain additional technical information that relates to the question displayed on the screen.

"Resources" has answers to frequently asked electric sign questions, and identifies tests that may be witnessed by UL field staff at the factory. "Resources" also includes a web portal with links to the Sign Component



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Canada (continued from cover)

standard accredited for use in both Canada and the US. This innovation, pioneered in a joint effort of ULC (also an SCC accredited SDO) and UL for OLED technology, can be even more seamlessly implemented where UL is the SDO for both Canada and the US. As a result, UL can facilitate the development of a single bi-national standard that will allow new and innovative products to flow more freely between Canada and the US.

The inefficiency of the parallel but independent bi-national standards development processes for the two countries was a frequent point of concern expressed by industry and other stakeholders. However, UL is now in a unique position to address this concern with its ability to convene a single consensus committee consisting of Canadian and US stakeholders

whose output will be recognized by both the SCC and ANSI. These key contributors to standards development need no longer duplicate their effort or expend additional time to achieve the desired result. This is because separate national consensus committees or a technical harmonization committee are no longer necessary.

UL's accreditation for Canada represents an opportunity to improve the lives of Canadians by enabling increased standardization and by leveraging the safety resources of UL inside and outside of Canada. However, it is not intended to nor does it affect any of the existing bi- or tri-national lighting standards (e.g. C22.2 No. 250 / UL 1598). All such standards will continue to be maintained as they have to date, including those led by CANENA as well as other co-publication efforts.



After 40 years, there is a new addition on the Canadian standards development scene. Today and in the future, UL is pleased to have the opportunity to promote, via standards, safe living and working environments for Canadians as it has for many years in the US.

Defined-fit Systems (continued from page 2)

Third, applicable manufacturing tolerances for the controlled dimensions. Current ANSI and IEC lamp fit specifications define electro-mechanical gauges that can be used to verify critical dimensions. Equivalent methods should be used for defined-fit systems for LED light engines.

Fourth, a unique designation assigned to both the lamp base and its intended holder (e.g. E12) so that users can readily identify

compatible components. For LED light engines, a thermal fit code that pairs the light engine to a compatible heat sink may also be needed.

Defined-fit systems need to define sufficient design parameters to ensure the interchangeability of modular components within a fit specification. The fit-systems would form the basis for developing safety and performance standards around predictable

parameters for this class of products. For this reason, UL supports industry efforts like Zhaga that seeks to develop interchangeability specifications for LED light engines made by different manufacturers. This is a critical stepping stone towards devising practical field replacement systems for light engines comparable to those we have for Edison base lamps in traditional incandescent luminaires.

UL 48 SignSmart Guide (continued from page 3)

Manual, UL's Online Certifications Directory, and other information important to sign manufacturers.

"Services" has links to libraries of technical training for lighting and signs, training for work place health and safety, as well as

other services that may be of interest to sign designers and manufacturers.

"Contact UL" has links for requesting a quote, frequently asked questions about UL and submitting products, and MY Home, UL's Customer Portal.

In conclusion, the UL 48 SignSmart Guide can facilitate designing electric signs eligible for UL's "General Coverage" sign certification program. [Click here to visit UL's Knowledge Services to use it online or download to your "Apple I Pad."](#)



STANDARDS CORNER

By Diana Pappas Jordan / Standards Program Manager

UL Standards encompass UL's extensive safety research, scientific expertise and uncompromising focus on quality. With over a century of experience and the development of more than 1,000 Standards, UL continues to break new ground in its mission to help create a safer, more sustainable world.

Standards information link:

<http://www.ul.com/global/eng/pages/solutions/standard>

Register for "What's New" – UL Standards updates at:

<http://www.ul.com/global/eng/pages/solutions/standards/accessstandards/whatsnew/register>

UL 1598 – Luminaires (Tri-national standard)

Starting next revision cycle, which will be a 2-year cycle.

UL 1598C – Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits

Proposed 1st edition went out for ballot on March 15, 2013 with a due date of May 14, 2013.

UL 1993 – Self-ballasted Lamps and Lamp Adapters (Tri-national standard)

No current standards activity — will be starting next revision cycle.

UL 8750 – Light Emitting Diode (LED) Equipment For Use In Lighting Products

Proposal went out for ballot on September 21, 2012 and also discussed at November 2012 STP meeting. The proposal related to adding requirements for dimmable LED drivers for use with solid-state dimming controls electrically wired in series with the mains supply. The proposal will go out for recirculation next.

Multiple proposals went out for preliminary review on October 24, 2012. Based upon the discussions at the November 2012 STP meeting, the proposals will be reworked accordingly and sent out for ballot. Link to the summary of topics:

http://ulstandardsinfo.net.ul.com/sot/b8750_1_20121024_sum.html

UL 2577 / ULC-S2577 – Suspended Ceiling Grid Low Voltage Systems and Equipment

The 1st edition of the joint UL/ULC Standard for Suspended Ceiling Grid Low Voltage Systems and Equipment, UL 2577 / ULC-S2577, was published on February 7, 2013.

UL 8752 / ULC-S8752 – Organic Light Emitting Diode (LED) Panels

No current standards activity.

UL 8753 / ULC-S8753 - Standard for Field-Replaceable Light Emitting Diode (LED) Light Engines

Harmonized Standard developed by UL in the US and by ULC Standards in Canada.

Proposed 1st Edition of the Joint UL/ULC Standard, UL 8753/ULC-S8753, went out for ballot on March 8, 2013 with a due date of April 22, 2013. This standard specifies the requirements applicable to field





replaceable light-emitting diode (LED) light engines rated up to 347 volts (nominal) and provided with integral lamp bases of other than the screw, bayonet, or pin type configurations typically found on incandescent or fluorescent light sources.

UL 8754 / ULC-S8754 – Holders, Bases, and Connectors for Solid-State (LED) Light Engines and Arrays

Harmonized Standard developed by UL in the US and by ULC Standards in Canada.

Proposed 1st Edition of the Joint UL/ULC Standard, UL 8754/ULC-S8754, went out for ballot on March 8, 2013 with a due date of April 22, 2013. This standard specifies the requirements applicable to holders, bases and connectors intended for solid-state (LED) light engines and arrays for installation in lighting equipment, provided that they employ a configuration not typically found on incandescent or fluorescent light sources.

UL 935, UL 1029, UL 542 – Ballasts (Tri-national Standard)

The draft of Part 1 of the proposed Standard, covering general construction and test requirements is being reviewed by the CANENA Harmonization Committee (THC34/SC34C) and being prepared for preliminary review.

The Part 2 documents which will include specific requirement for the various product types still need to be developed.

UL 153 – Portable Electric Luminaires

Proposal went out for ballot on March 22, 2013 with a due date of April 22, 2013. The proposal was related to the revision to supply cord splices for clamp-on units.

Proposal issued for ballot on April 19, 2013. The proposal is related to the revision of extension cord types in wet locations in Par 193.2.

UL 1786 – Direct Plug-In Nightlights (Bi-national Standard)

Next revision cycle starting. Call for Proposals went out on January 23, 2013 with new proposals due February 22, 2013.

UL 496 – Lampholders (Bi-national standard)

Multiple proposals went out for ballot on February 24, 2012 and recirculation March 15, 2013. Link to the summary of topics: http://ulstandardsinfontet.ul.com/sot/b0496_13_20120224_sum.html

UL 48 – Electric Signs

Proposal went out for preliminary review on December 24, 2012. The proposal was related to two topics: (1) Clarification of drain opening requirements and (2) Grounding and Bonding Marking.

UL 48B – Changing Message Signs and Displays

UL is currently developing proposed 1st edition for UL48B.





COMPONENTS AND ACCESSORIES

Zhaga Interface Specification Development Update

By **Joseph S. Frederic** / Principal Engineer, Lighting



Founded in February 2010 by a core group of lighting companies, Zhaga quickly evolved into a major global consortium regrouping the leading LED industry players.

The membership list and synergy around the consortium were so impressive that “Zhaga” quickly became a buzz word around industry insider circles. Being a closed, “members only” consortium, Zhaga for a while appeared to be only a concept to the general public.

Fast forward three years, Zhaga has published three specifications that are available for free download on its website. Zhaga certified products, including LED light engines, luminaires, and lampholders are available in the market and can be looked-up on an open certification database on Zhaga’s website. In just over three years Zhaga has gone from buzz word to reality.

The following list highlights some of the milestones and specifications announced by the consortium to date:

- February 2011, the first light engine specification is approved: Book 2 - A socketable light engine with integrated control gear - mainly used in downlight applications.
- June 2011, the second light engine specification is approved: Book 3 - A round engine with separate control gear - used in spot lighting and other applications that need a point light source.
- By September 2012, six more specifications were approved; two specifications for integrated socketable light engines (Books 6 and 8), three specifications for light engines with separate electronic control gear (Books

4, 5 and 7) and one specification which covers common definitions and generic interface requirements (Book 1).

- October 2012, Books 1 and 3 became the first Zhaga specifications to be available for free download on the internet.
- February 2013, a third Zhaga specification (Book 2) is published for free downloads.

In parallel with the publication of the books, Zhaga has also been releasing a series of technical articles and book summary presentations to help users understand and

apply the Zhaga interface specifications. Such articles and presentations are already available on the Zhaga website for books 2 and 3. Look for more book summaries to be released in the near future.

As an Authorized Test Center and regular member of the Zhaga Consortium, UL is an active contributor to the book development process and offers Zhaga expertise and compliance testing services.

For updates on Zhaga specifications visit www.zhagastandard.org/specifications.





Late Breaking News

Come see UL at Lightfair International

April 23 – 25, 2013

Philadelphia — UL Booth #3831

UL Welcomes ENERGY STAR®

Don't miss the opportunity to discuss the latest updates concerning your energy-efficient lighting products with ENERGY STAR® representatives Taylor Jantz-Sell and Tanya Hernandez at UL's Lightfair booth on Tuesday, April 23, from 3:00 – 4:00 PM

UL presents at NERI North America hosted seminar

Topic: International Standards, Market Trends, and Global Certifications: *A roadmap to navigating the requirements of specifying lighting in the international arena (ENEC, UL, CE, and others)*

- Presented by members of the UL Global Market Access Team
- Wednesday, April 24, 10:00 – 11:00 AM
- Room 203A
- Who is this for? Focus on Architects, Lighting designers, Engineers

Seats are limited! RSVP to Simona Cufari at NERI North America, Cufari.s@neri.biz or 786.315.4367

UL Acquires Testtech Laboratorios

A Brazil-based electrical safety and energy efficiency testing laboratory is now becoming a full-service appliance testing and certification provider for INMETRO program.

Testtech also provides performance testing services across other product categories, including automotive parts, luminaires and other lighting products.

[Click here to read more.](#)

ISO/IEC 17025 Certificate Issued

IAS has issued the ISO/IEC 17025 accreditation certificate based on the audit on the European and National standard of photometry EN 13032-1 and UNI 11356.

Performance Exclusives: NEW! 5-Day TAT Guarantee for LM-79 Testing

In addition to the new 5-day TAT for LM-79 testing, now through May 31, 2013, UL is offering a 20% discount for all LM-79 projects.

Our North American performance laboratories are ready to assist you!

For more information and terms and conditions please email Cathy Billington at Cathy.Billington@ul.com or call 610.774.1305, or email Bonny Dara at Bonny.Dara@ul.com or call 480.991.9260 at our Scottsdale, AZ laboratory.

Along with LM-79 testing, our ISO/IEC 17025 accredited photometric labs in NA offer a full suite of testing services to meet your needs, including:

- | | |
|--------------------------------|-------------------|
| • ENERGY STAR® | • Ballast Testing |
| • California Energy Commission | • NRCAN |
| • LM-80 | • LM-82 |
| • DesignLights Consortium | • Lighting Facts |
| | • Zhaga |
| | • R&D |

Terms and conditions apply: 5-day Turnaround time (TAT) promotion for LM-79 testing only and is based on business days. TAT begins the day after samples are received and order opened. 5 samples maximum per order for 5 days TAT promotion. 2 samples maximum per order for spatial uniformity. If UL does not meet stated turnaround time, credit is applied to future testing. No other remedy may be applied. Additional terms and conditions may apply. UL reserves the right to vary these terms at any time without notice.

DesignLights Consortium® 7-Day TAT Offer for indoor and roadway products

As lighting customers are feeling the pressure to get products to market faster, UL has made significant investments to help you meet these challenges. Our new Indoor & Roadway products offer includes:

Photometrics

- LM-79 Distribution testing for zonal lumen density
- LM-79 Testing performed in Integrating Sphere
 - Light output, Efficacy, CCT and CRI
 - 3 meter sphere to accommodate larger products

Electrical Testing (Allentown only)

- In-situ testing for L70 lumen maintenance in accordance with UL1598
- Input electrical test report at maximum input voltage
 - THD and Power Factor

For more information and terms and conditions please email

Cathy Billington at Cathy.Billington@ul.com or call 610.774.1305, or email Bonny Dara at Bonny.Dara@ul.com or call 480.991.9260.

For significant volume discounts ask about our 'Frequent Photometry Tester Program.'

Terms and conditions apply: 7-day Turnaround time (TAT) promotion is based on business days and only for projects with 3 or less samples. If UL does not meet stated turnaround time, credit is applied to future testing. No other remedy may be applied. Additional terms and conditions may apply. UL reserves the right to vary these terms at any time without notice. Please contact us by May 31st to take advantage of our promotional package.



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