



FEATURED ARTICLE

UL's Brand Protection Team Shines a Light on Counterfeit Crime

Some might think counterfeit goods are mainly an issue with consumer products, but the reality is the manufacturing and sale of counterfeit goods is a global problem that directly impacts legitimate producers and retailers in virtually every sector – and the commercial lighting industry is no exception.

In January 2013, a complaint was made to UL regarding a sign installation in Tampa, Fla. The location had two electric signs and two changing message signs mounted on a single pole. The signs were installed by B&B Signs and were found to have counterfeit UL Marks affixed.

UL's Brand Protection team – which is made up of former law enforcement officers and other professionals that investigate counterfeits of the UL Mark – conducted several field surveys of signs and changing message signs in the Tampa Bay area. The team discovered a total of 29 locations with counterfeit or unauthorized UL sign labels, 48 counterfeit UL sign labels, and 5 unauthorized or modified UL sign labels. As part of UL's investigation, each location, sign and label was photographed, and victims who had purchased signs from B&B Signs were interviewed.

What's the harm in counterfeit signs? For one, it presents a serious public safety risk since the signs were falsely represented as being in compliance with the National Electrical Code which requires that electric signs be listed. Many of the signs were malfunctioning and of poor quality. In addition, the monetary damages to customers who purchased these faulty signs was significant, as they spent anywhere from \$25,000 to \$80,000 for what they thought were listed signs.

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Spotlight: Letter From Roberto



Horticultural luminaires are forecast to experience astronomical growth over the next 5 years as both the total amount of horticultural spaces and the adoption rate of LEDs increase rapidly.

Those kind of products are currently evaluated to the Standard for Luminaires, UL1598, however, based on the specific application environment of the luminaires we created a specific Outline of Investigation UL1598D that include also a photo biological evaluation.

Another important factor for horticultural luminaries is related at performance because, having the right spectrum and quantity of light, at the right point in the plant lifecycle, can make a significant difference in the quality of the end product.

Get in touch with us to learn more about those requirements, we can provide all the solutions you need for this specific application.

Kind Regards,



Roberto Inclinati
Business Development
Manager for Luminaires



Upcoming UL Education & Training for the Lighting Industry

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[Low Voltage Lighting, UL 2108](#)

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(cover story continued)

UL's Brand Protection Team Shines a Light on Counterfeit Crime

Early on in its investigation, UL presented the case to the U.S. Department of Justice, and eventually took civil actions against B&B Signs, resulting in an injunction against multiple defendants. These actions protect the public from criminal enterprises.

Beyond the incident with B&B Signs, UL has a history of criminal enforcement actions taken against sign companies that counterfeit the UL Mark. In 2010, a UL investigation revealed that another Florida sign company, Signations, was manufacturing counterfeit UL sign labels and defrauding numerous clients and government officials. The owner was charged by Boca Raton Police with 34 counts of forging or counterfeiting private labels and one count of organized fraud – resulting in a two-year probation sentence and the replacement of 34 victims' electric signs in Boca Raton.

At times, UL will also work closely with law enforcement to remove products bearing counterfeit UL trademarks, and to hold accountable those responsible for their manufacture and distribution. For example, in Palm Coast, Fla., the owner of Apex Sign Builders was convicted in Federal Court of trafficking in goods using a counterfeit UL Mark. Illegal activity was traced through financial records and combined with direct evidence provided by UL, including photographs of counterfeit UL labels installed in nearly 40 commercial locations, restaurants, medical facilities and a church. The investigation resulted in a large FBI operational takedown.

UL's Brand Protection program comes as a value-added service to customers along with its certification program. UL works closely with clients to conduct investigations, develop and implement anti-counterfeiting strategies, and protect the integrity of the UL Mark with buyers and consumers alike. In an effort to further deter criminal behavior UL is transitioning the sign industry to holographic labels, which has been shown to reduce counterfeiting.

Using its relationships with the public and private sectors, coupled with investigative skillsets and a global presence, UL supports its customers in protecting their brands – and ultimately making the world a safer place.

To learn more about UL's Brand Protection program, please contact us at www.ul.com/brandprotection.

WEBINAR: Title 20 and Title 24 Updates – Are Your Lighting Products Ready?

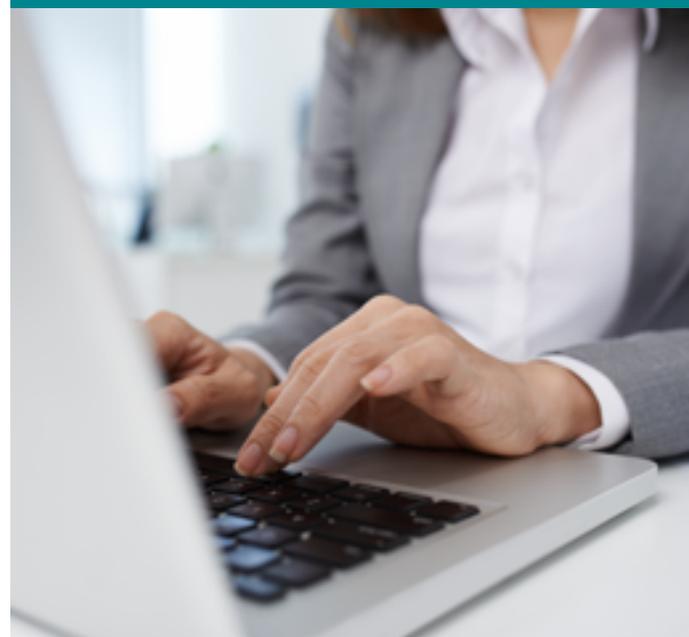
California regularly updates their Title 20 Appliance standards and Title 24 Building standards, both of which have complex requirements for lighting products. This webinar will provide an overview of lighting requirements, and highlight the recent changes that manufacturers and retailers need to know.

Learning Objectives:

- Understand which products are covered under Title 20
- Become educated on the new Title 20 requirements for LED (and other) lamps
- Understand the Title 24 requirements for High Efficacy Sources and where they apply
- Gain strategies for utilizing the required testing for other programs and regulations

Date: March 30, 2017 – 3:00 PM CST

[Click here to register for our free webinar.](#)



Defined Fit LED Tube Lamps – What you Need to Know About the new ANSI G6.6 T-LED Fit System

By Michael Shulman / UL Principal Engineer

Bread and Butter. Wine and cheese. Linear LED lamps and G6.6-compliant holders. Some things just go together and make the world a better place.

In February, ANSI approved the G6.6 lampholder design and added it to the C81.61 (lamp bases) and C81.62 (lamp holders) standards. The implications for tubular LED lamps (T-LEDs), for retrofit kits using T-LEDs, and for new T-LED luminaires will be far-reaching. UL has already prepared revision proposals for UL 1993 (Standard for Self-ballasted Lamps) and established guidance for applying UL 8754 (Standard for Holders, Bases, and Connectors for LED Light Engines and Arrays. Certification programs for compliant T-LEDs and holders are available now.

The G6.6 defined-fit system ensures that only T-LEDs designed for the purpose can be installed in G6.6-equipped luminaires, eliminating concerns that lamps using incompatible technology (i.e., fluorescent) will be inadvertently inserted. The G6.6 design also eliminates exposed conductive parts that represent a risk of electric shock injury, using a recessed pin-and-sleeve approach. These features reduce hazards and simplify the use of T-LEDs for both retrofitting purposes and ongoing maintenance.

The ANSI C81 interchangeability standards have been in use for decades and are widely referenced by most lighting safety and performance standards. UL 8754, on the other hand, is a relatively new US and Canada harmonized standard (published in 2013) targeting LED applications; it's a better home for the new G6.6 than UL 496, which was first published in 1931 and contains requirements for legacy lampholder designs such as the Edison screwshell. Bases and holders implementing ANSI fit designations and that comply with UL 8754 will provide improved levels of luminaire safety – but only if properly deployed in lamps, retrofit kits, and luminaires.

Requirements for type B and C T-LEDs are found in UL 1993 Supplement SA. These lamps use base configurations (G13, Fa8, etc.) traditionally intended for fluorescent technology. These lamps are eligible for certification only as components (of a luminaire or retrofit kit) and are not for general use field

installation due to additional considerations that may be required to verify electrical safety compatibility in the specific end use luminaire.

T-LEDs with the G6.6 system have a sleeved-pin connection that is incompatible with existing fluorescent lamp fit systems. Since they do not employ traditional fluorescent lamp bases, they are neither type B nor type C lamps as defined in UL 1993. UL will be proposing a new term for UL 1993, “linear LED lamp,” to identify those equipped with a defined-fit base such as the G6.6. These lamps will need to comply with the electrical and mechanical (including weight limit) ANSI C81 specifications for their base configuration. A new UL 1993 test requirements will include input voltage mismatch for both low- and line-voltage designs. Since linear LED lamps are likely to be incorporated into retrofit kits, their forward-looking compatibility with the requirements of UL 1598C (Standard for LED retrofit kits) must also be determined. This includes evaluating their ability to handle a reverse polarity input (which can occur upstream of the lamp holder and not be apparent to the installer) and by making some adjustments to the UL 1993 Temperature Test to ensure that a luminaire originally intended for a fluorescent lamp will not experience excess heat when a linear LED lamp is installed.

Linear LED lamps are eligible for UL Listing under UL category OOLV (Self-ballasted LED Lamps) and are considered suitable for general use, end-user replacement. G6.6 holders evaluated and found compliant with UL 8754 are eligible for UL Listing under UL category OLFb (Solid-state Lighting Bases, Holders and Connectors). Retrofit-kit manufacturers looking to incorporate G6.6 holders can continue to have their kits UL Certified under category IFAR (LED Retrofit Kits). And UL's general coverage programs for surface and recessed luminaires (categories IFAM and IFAO) are also eligible to incorporate G6.6 holders and linear LED lamps.

Linear LED lamps and their insulated defined-fit base system is the next logical step for an industry that continues to evolve towards safer, higher quality, and more energy efficient equipment. Designs that automatically reject

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Transitioning to the New Canadian Standard for Portable Luminaires

Portable luminaires intended for use in Canada have historically been evaluated for compliance with CSA C22.2 No. 12. Because that standard had a limited scope and was not actively maintained, some portable luminaires were instead subject to requirements contained in CSA C22.2 No. 9.0 while other requirements were found in CSA Technical Information Letters (TILs). In most every case, the U.S. requirements, found in UL 153 [Standard for Portable Electric Luminaires], were more comprehensive and more up-to-date with technology. This allowed UL (and other certifiers) to leverage UL 153 compliance to establish Canadian certification (per CSA No. 12 and the other documents) with relative ease.

CSA is now retiring CSA C22.2 No. 12 and the associated TILs; CSA C22.2 No. 9.0 is also expected to be retired in the near future. In its place, CSA has published C22.2 No. 250.4. It is structured as a “part 2” document to CSA C22.2 No. 250.0, the Canadian harmonized version of UL 1598 [Standard for Luminaires]. Because CSA C22.2 No. 250.0 was not written or structured in anticipation of serving as a “part 1” document, the interaction between 250.4 and 250.0 is not nearly as fluid and efficient as that of other family-type standards (such as many of those published by the IEC). C22.2 No. 250.4 is not aligned with UL 153. This task has been deferred to future revisions.

CSA has acknowledged, in their Certification Notice announcing the new standard, that the requirements of C22.2 No. 250.4 are sufficiently similar to those that have historically been applied (through the earlier standards and TILs) that currently certified products will not require any retesting or submittal for re-evaluation. But it is quite clear that, going forward, the evaluation of a portable luminaire for compliance with both the U.S. and Canadian requirements will be far more challenging than in the past.

UL is taking steps to address this added complexity and make the transition as seamless as possible for its customers. We have created guidance documents and training modules for our engineering staff to identify the overlap of requirements between UL 153 and C22.2 No. 250.4. We will leverage those commonalities to reduce excess evaluation time and cost for UL customers. While there still may be some bumps in the road ahead, we believe that these steps will allow our customers to focus on their business – building portable luminaires that comply with the applicable U.S. and Canadian requirements – with the least possible amount of disruption.

UL's transition to CSA 250.4 for Canadian portable luminaire certifications (our “C-UL” program) is now underway and should be fully completed by Spring 2017.

Certification Marks for Emergency LED Drivers

UL is shifting its FTBV Certification program to the UL Listing Mark.

Beginning in 2000, minimum light output requirements were established for products evaluated per UL 924, Standard for Emergency Lighting and Power Equipment. At that time, incandescent luminaires with lamps of 5.4 W or greater and fluorescent battery packs whose input power was 4.5 W or greater were deemed to provide the minimum 1 foot-candle (fc) illumination level on the ground as required by the Life Safety Code (NFPA 101).

In 2011, UL established a separate product category (FTBV) for field-installable emergency LED drivers. Compared to the relatively standardized efficacy and photometric distribution of incandescent and fluorescent lamps, the performance of LED arrays was widely variable and changing rapidly. To establish compliance with the lumen output requirements of UL 924, UL's certification program for these emergency LED drivers required evaluation with specifically identified LED luminaires. To highlight this limitation for meeting code compliance, UL turned to its Classification Mark which is designed to include such additional information.

Today, LED arrays, related supporting electronics, and the regulatory industry have evolved to establish a type of standardization that allows for much broader emergency LED driver–luminaire compatibility assessments.

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Standards Corner

Standards information link: [Click here](#)

Sign up for “What’s New” [here](#). Select “Join Email List” on the What’s New site to receive email notifications twice a month that list the various UL, UL Environment, and ULC Standards documents published during that timeframe.

UL 153 – Portable Luminaires

- A new proposal was issued for ballot and comment on October 7, 2016 and then for recirculation on December 14, 2016. There were multiple proposal topics. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31772>. Revisions were published on January 20, 2017.
- Another new proposal was issued for ballot and comment on November 18, 2016. The proposals related to: 1) Adding requirements for instant-start ballast and lampholder compatibility; and 2) Adding requirements for use of split SPT-2 cords (Note: Topic 2 failed to achieve consensus and no further action will be taken on the proposal). Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31959>. The proposal for Topic 1 was published as revisions to the standard on January 20, 2017.

UL 1088 – Temporary Lighting Strings (Bi-National Standard)

- A proposal was issued for ballot on August 12, 2016 with a due date of September 12, 2016. The proposal relates to adding requirements for temporary lighting strings for indoor use only. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31461>.

UL 1598 – Luminaires (Tri-National Standard)

- The next revision cycle has started, which will be a 2-year cycle. Proposals received by the SDOs were issued for preliminary review on August 28, 2015. Comments are due on October 12, 2015. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=30005>. Proposals will be issued for ballot in the near future.

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

- The proposal went out for preliminary review on February 6, 2015. The proposal relates to fuse requirements for tubular fluorescent to LED conversion retrofit kits. The proposal was issued for ballot and comment on October 7, 2016 with ballots and comments due on November 7, 2016. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31775>. Consensus was achieved and revisions were published on November 27, 2016.

UL 1838 – Low Voltage Landscape Lighting Systems

- A new proposal is scheduled for ballot and comment on February 24, 2017 with a due date of March 27, 2017. The proposal relates to cord size for power units with receptacles and pond and fountain luminaires located near pools.

UL 935-1 – Discharge Lamp Control Devices, Part 1 – General Requirements (Tri-National Standard)

- A proposed first edition of NMX-J-611/1-ANCE / CSA C22.2 No. 74-1 / UL 935-1 was issued for preliminary review on February 10, 2017 with comments due on April 10, 2017. The proposed tri-national new edition is intended to harmonize ballast safety requirements in the North American region. The proposal is considered Part 1 describing general requirements applicable to all types of ballasts. Part 2’s of this standard will be published at a later date and will include descriptions of test procedures, test modules, and specific requirements. CSA is the Publication Coordinator. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=32349>.

UL 1993 – Self-Ballasted Lamps and Lamp Adapters (Tri-National Standard)

- The next revision cycle has started. UL is the Publication Coordinator. Multiple proposals went out for ballot on August 7, 2015 with a due date of September 21, 2015. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=29887>. A recirculation proposal was issued on October 14, 2016 with a due date of November 28, 2016. Consensus was achieved and the Fifth Edition of UL 1993 was published on January 27, 2017.
- The next revision cycle has started. A Call for Proposals was sent out on December 2, 2016. UL (Publication Coordinator) has forwarded the proposals to the Technical Harmonization Committee for review.

UL 1573 – Safety for Stage and Studio Luminaires and Connector Strips

- A new proposal was issued on October 3, 2016. Ballots and comments were due on November 3, 2016. The proposal relates to harmonizing UL 1573 to the 2017 NEC section 520.69(A) (3) which allow for new lengths in hard-usage supply cords. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31763>. Consensus was achieved and revisions were published on December 22, 2016.

UL 2577 – Suspended Ceiling Grid Low Voltage Systems and Equipment (Bi-National Standard)

- A proposal was issued for ballot on August 5, 2016 with a due date of September 19, 2016. The proposal relates to the definition of low voltage/extra-low voltage and revised voltage references in the standard to correlate with the Canadian Electrical Code and the National Electrical Code. Link to the summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31416>.

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UL 8750 – Light Emitting Diode (LED) Equipment for Use in Lighting Products

- A proposal went out for preliminary review on July 24, 2015. The proposal relates to the addition of a new Supplement SE covering Requirements for Class P LED Drivers. This proposal was issued for ballot on December 11, 2015 and a revised proposal was recirculated for ballot on September 9, 2016 with a due date of October 10, 2016. Link to the summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31624>. Revisions were published on October 21, 2016.
- A new proposal was issued for preliminary review on January 8, 2016 and was subsequently issued for ballot on August 19, 2016. The proposal relates to the addition of a new Supplement SF covering Requirements for LED Drivers with Control Circuits. Link to the summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31492>. The proposal was issued for recirculation on December 23, 2016 with ballots due on January 23, 2017.
- A new proposal went out for preliminary review on April 26, 2016 and a second preliminary review on August 26, 2016. The proposal relates to revised potting compound requirements. Link to the summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31524>. The proposal was issued for ballot and comment on September 23, 2016 and then recirculation on October 26, 2016. Consensus was achieved and revisions were published on November 23, 2016.
- A new proposal was issued for preliminary review on October 14, 2016. The proposal relates to the expansion of UL 8750 scope to include LED controllers supplied from branch circuit. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31812>.

UL 496 – Lampholders (Bi-National Standard)

- The next revision cycle has started. A Call for Proposals was sent out on May 9, 2014. UL (the Publication Coordinator) sent the proposals received to the Technical Harmonization Committee for review. Multiple proposals went out for preliminary review on October 3, 2014. The proposals related to: (1) Proposed Addition of Requirements for Lampholder Fittings with Integral USB Connectors, (2) Proposed Addition of Requirements for Minimum Lead Wire Gauge Size for GU24 Outlet-Box Lampholders, and (3) Proposed Addition of Requirements to Clarify the Creepage Distances and Clearances Measurements. The comments received in response to the preliminary review were sent to the Technical Harmonization Committee (THC) for review and input. A proposed new edition, which incorporates the proposals that were sent out for preliminary review in October 2014, was issued for ballot on May 23, 2016 with a due date of July 22, 2016. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31132>.

UL 482 – Portable Sun/Heat Lamps

- FDA proposal to amend performance standard for sunlamp products and ultraviolet (UV) lamps intended for use in these products (which may be viewed at <https://federalregister.gov/a/2015-32023>) would reference IEC 60335-2-27, Household and similar electrical appliances – Safety Part 2-27: Particular requirements for appliances for skin exposure to ultraviolet and infrared radiation, rather than UL 482. The FDA is seeking comments on the proposed rule by March 21, 2016.

UL 48 – Electric Signs

- A new proposal was issued for preliminary review on May 24, 2016. The proposals relate to: 1) New Requirements for Shipment of Sign Sections; 2) Standard Reference for LED Components and LED Retrofit Kits; and 3) Revision title of Section 4.4.10.2. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=31138>.

UL 924 – Emergency Lighting and Power Equipment

- Multiple proposals were issued for ballot on September 30, 2016 with a due date of November 14, 2016. A subsequent recirculation was issued on January 20, 2017 with ballots due on February 20, 2017. Link to summary of topics: <http://www.comm-2000.com/ProductDetail.aspx?UniqueKey=32245>.

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Defined Fit LED Tube Lamps – What you Need to Know About the new ANSI G6.6 T-LED Fit System

incompatible lamp types eliminate the need for certain warning markings that can be aesthetically unattractive, and safety certification requirements that anticipate both facility mis-wiring (reverse polarity) and user errors (mismatched voltage) significantly reduce risks of fire and injury.

UL is excited to offer these new certification programs to its customers.

For more information on how we can support your ANSI G6.6 products, please click [HERE](#)

For more information on all our Lighting offerings, please click [HERE](#)

If you have any questions please contact us at LightingInfo@ul.com, or 1-877-UL HELPS (1-877-854-3577)



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Certification Marks for Emergency LED Drivers

Output sensing circuitry that automatically adjusts to the forward voltage needs of the LED array, in combination with wider availability of 3rd party validated efficacy data, allows newer emergency LED drivers to be found suitable for many applications without the need for individual driver–luminaire lumen output testing. While these suitability assessments are not particularly simple, the task is considered to be within reasonable skillset expectations for the professional installer community.

The suitability assessment guidance is a required element of the emergency LED driver installation instructions. The necessary information is far beyond what can fit within the limited space on the UL Classification Mark so the advantage of using this Certification Mark is greatly diminished. As a result, UL is shifting its FTBV program to allow for the use of the more familiar UL Listing Mark. Listed emergency LED drivers still require a ‘suitability assessment needed’ statement on the driver, directing the installer to either the product installation instructions or the manufacturer’s website for the needed information. The enhanced UL Certification Mark option remains available for FTBV products.

This change will not require any changes to product design or operation as it involves only a change in the type of UL Certification Mark applied to the emergency LED driver. For information regarding product markings and UL Certification references in accompanying required documents (installation instructions, website information, etc.), please see below:

- If the enhanced UL Certification Mark is currently being applied, no change is needed.
- If the UL Classification Mark is currently being applied, the markings and references should be updated to the UL Listing Mark by the end of 2017. This transition period is intended to allow existing label inventories to be used and for marketing materials and programs to be adjusted. During the transition, any UL Marks (Classification, Listing or Certification) may be used.

UL expects this change will help the market by:

- Improving perceptions of ‘safety’ equity between comparable emergency fluorescent ballasts (which have always been eligible to use the UL Listing Mark) and emergency LED drivers.
- Reducing uncertainty amongst those unfamiliar with the less frequently seen UL Classification Mark.
- Eliminating confusion as to whether a UL Classified product is a “listed” product in the context of the NEC due to all UL Listed or Classified products being “listed” per the definition of this term in the NEC.
- Eliminating perceived inequities between UL Classified or Certified equipment and comparable equipment listed by other agencies that do not have different mark programs.

UL created a set of Frequently Asked Questions (FAQs) that provides additional details on the program and the transition. The FAQs can be viewed [here](#).

Lighting for Tomorrow 2017 Competition

The Lighting for Tomorrow competition provides manufacturers the opportunity to push the industry forward by introducing high quality and innovative designs, contribute to the greater energy efficiency movement, and gain exposure for their brands and products among industry leaders and consumers alike. In particular, the exceptional products identified by the judging panel are heavily promoted by Lighting for Tomorrow for a full calendar year.

The competition is typically launched at the International Lighting Market in Dallas in January. The 2015-2017 competitions will seek LED and OLED fixtures, LED replacement lamps, LED retrofit kits, and lighting control devices.

Lighting for Tomorrow is organized by the American Lighting Association (ALA), the Consortium for Energy Efficiency (CEE) and UL. The annual Lighting for Tomorrow competition was created in 2002 to recognize the best decorative, energy efficient lighting fixtures in the market. Since its inception, Lighting for Tomorrow has encouraged manufacturers to develop well designed, energy efficient lighting products with a specific goal of increasing the availability and market adoption of ENERGY STAR® certified residential lighting products.

Submission Categories:

- LED Fixtures
- LED Retrofit Kits
- LED Replacement Lamps
- LED Contractor Lighting
- Ceiling Fan Lights and Light
- Kits
- Connected Lighting
- OLED Fixtures
- Lighting Controls
- LED Filament-Style Lamps

The Intent to Submit form is DUE APRIL 21. For more details, please [click here](#).



UL's Fast LED Goniophotometer Completely Redesigned

By James Walker / UL Laboratory Leader

UL has completely redesigned our LED Goniophotometer (model 6220T). The new design allows a greater range of vertical travel and is capable of testing a luminaire almost 11 inches tall. When equipped with a spectroradiometer, the 6220T is capable of measuring color angular uniformity and color quantities such as CCT, CRI and spectral power distribution (wavelength x wavelength distribution).

Specific Specifications

- Capable of measuring a luminaire with a luminous opening of 24 inches x 24 inches or a diameter as large as 33.9 inches
- Fits in a room approximately 10.5 feet wide x 18.3 feet long x 10.5 feet high
- Same high speed data collection
- Same maximum luminaire weight of 132 pounds
- LM-79 compliant

This small goniophotometer is excellent for:

- Measuring smaller LED luminaries
- R&D development
- Adding capacity to an already busy larger goniophotometer
- Fitting into a smaller space – only requires a 10.5-ft ceiling

For more information contact ULGoni@ul.com

Thermal Shock Testing Services

David Edwards / UL Program Manager

Designers have many variables to consider during the development phase of a new product.

One critical variable is the materials and components that will be included in the product design and how they will perform over the intended design life, while exposed to various harsh operating environments or applications.

To help support designers and manufacturer's material decisions, UL's Performance Testing lab in Allentown, PA, U.S.A, has expanded its performance testing capabilities to include Thermal Shock Testing.

Thermal Shock Testing is required for products, components and materials that will undergo sudden changes in temperature throughout their life cycle. Thermal shock testing involves a change of temperature over a very short timeframe and then continuing that change for many predetermined cycles. These temperatures can range from extreme heat (200 C) to extreme cold (-70 C). MIL-STD-810 is a commonly referenced standard for temperature shock along with many other industry standards.

Various products from different industries experience severe temperature changes when in-use. For example, components attached to an automobile's engine on a cold winter day can experience many cycles of thermal shock over time. Yet again, products that are stored in a hot warehouse might experience thermal shock when transferred to a cold truck for transportation. Early recognition of the proper materials helps boost the performance and reliability of the product.

For more information, call us at (610) 774-1300, or email PerformanceLighting@ul.com



Interior Dimensions:
16" x 14.5" x 18" (W x D x H)
Temperature Range:
-70°C to 200°C

Tradeshows & Events

International Sign Expo (ISA) 2017

April 20-22, 2017 – Las Vegas, NV

Booth#: 2768

Lightfair International (LFI) 2017

May 9-11, 2017 – Philadelphia, PA

Booth#: 535

American Lighting Association

Annual Conference 2017

September 10-12, 2017 – Vancouver, BC

Join UL's Presentation at LIGHTFAIR!

Cyber Security Hygiene for Lighting Systems

UL's Tom Blewitt will be presenting at the first-ever **LFI IoT & Smart Lighting Forum**, a one-day series of six 60-minute sessions on **Wednesday, May 10** that covers controls, adaptive outdoor lighting, personalized environments, smart lighting and sensors. Sessions are available as a Forum package or à la carte through LIGHTFAIR.



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