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Pre-Lit Artificial Christmas Trees

An Update on UL's Certification Program

By Bob Backstrom and Dwayne Sloan

As the holiday season approaches, consumers and businesses alike will decide whether to decorate using live, natural Christmas trees or pre-lit artificial ones. According to NFPA statistics, Christmas trees of all types pose a special safety risk during the holiday season. There is a strong, well-known safety message that if a live tree is chosen, it must be kept well watered to reduce the risk of a fire. Unfortunately, the fire safety message is not as clear for a pre-lit artificial tree. Understanding key safety concerns for pre-lit artificial trees is equally important, because these trees can also be a significant source of fuel if ignited.

Considering this potential fire concern and the increased use of pre-lit artificial trees, fire experts and retailers have long expressed a desire for UL to develop a standard and certification program to address the flammability of these products. Based on these concerns and the growing popularity of pre-lit artificial Christmas trees, in late 2010 UL published the Subject 2358 Outline of Investigation for Fire Tests of Pre-lit Artificial Seasonal Use Trees and Other Seasonal Decorative Items and offered a new certification service for artificial pre-lit trees.

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Pre-Lit Artificial Christmas Trees (continued from cover)

Subject 2358 and UL's certification program cover pre-lit artificial Christmas trees 30 inches to 12 feet tall, and pre-lit artificial wreaths larger than 48 inches in diameter. The test method was largely based on the NFPA 289 Standard Method of Fire Test for Individual Fuel Packages, which uses an open flame sand burner (20 kW ignition heat source for 15 minutes) positioned so that the flames directly impinge on the greatest concentration of combustible tree components. In order to comply, products under test cannot produce a peak heat release rate that exceeds 100 kW, and the total heat release rate cannot exceed 15 MJ during the first 10 minutes of the test.

In response to industry feedback, UL has also conducted research using natural and pre-lit artificial Christmas trees to determine the influence of various magnitude of ignition sources on fresh (watered), dried (un-watered) natural and artificial pre-lit Christmas trees using the following ignition sources:

- Downward burning rate test/needle flame (UL 5881)
- 20 kW propane fueled sand burner – 15 minutes (NFPA 289)
- 1 pound of shredded paper (UL Subject 411)
- Wood crib (UL 1975 and NFPA 1)
- 20 kW propane fueled sand burner – growth and decay for 5 minutes

Based on the data obtained from this research and from the data gathered during the new work testing of pre-lit artificial trees submitted for an evaluation, the 20 kW ignition source continued to be the most viable ignition source challenge with some significant updates. Consequently, the Subject 2358 Outline of Investigation was revised and a second edition issued on Aug. 28, 2013, with the key changes described:

1. The language specific to the test equipment and procedures was revised to be consistent with other oxygen consumption calorimetry standards and practices.
2. The constant 20 kW fire source exposure was updated to better represent the growth and decay fire challenge exhibited by the first items that may ignite underneath a pre-lit tree.
3. The test ignition source application duration was reduced from 15 minutes to five minutes. Research showed that both natural and pre-lit artificial trees reacted to the fire challenge within five minutes and, in most cases, were fully involved well within the first five minutes of testing.
4. The number of samples tested was reduced from five to three. The most adverse testing location was demonstrated through test evaluations and research, eliminating the need for two samples.

On Oct. 14, 2013, UL presented this information to key manufacturers and received positive feedback on the revisions.

Certifications of pre-lit artificial trees and wreaths can be found under the Seasonal and Holiday Decorative Products, Outfits, Decorative product category (DGXW), located in the UL Online Certifications Directory at www.ul.com/database.

With these changes, UL looks forward to product evaluations that will soon lead to certified pre-lit artificial trees. This is a significant step forward in addressing the safety concern for these seasonal products, and contributes to the overall objective of a safe holiday season.

For additional information please contact Anthony Tassone at Anthony.T.Tassone@ul.com or at +1.631.546.2943.

Providing Clarity to the Digital Video Market Place

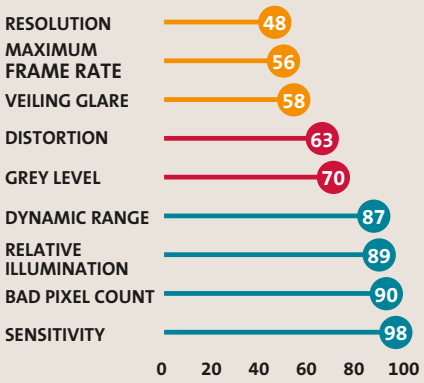
Video surveillance has become more pervasive and more widely accepted by the general public as it proves helpful in various security scenarios, bringing peace of mind to end users. Video technology has been used to defeat potential acts of terrorism, in local law enforcement and fire protection activities, and in commercial and industrial security programs.

An image with an equivalent resolution of 73LP/PH@MTF50

Low image quality

Better image quality

Camera model "X" scoring according to UL2802



Video surveillance technology has become a common communications medium and an essential tool for public safety officials and security professionals.

Today, video surveillance products and systems account for nearly half of a $20 billion physical security market. But the competing claims about performance make it difficult for users to understand which surveillance cameras are their best choices. This is where UL 2802, the Standard for Performance Testing of Camera Image Quality, and UL certification can help.

The growing use of video technology globally has resulted in increased attention to video quality, specifically to usable image quality, which is necessary for analytic software and forensics video analysis to be most effective. As a result, the market is saturated with cameras promoted as having the greatest number of megapixels, best resolution and sensitivity, lowest distortion, fastest processors and the most state-of-the-art software applications. And, this is where the challenge in selecting a camera lies.

Because of competing features, integrators and users have a difficult time selecting the most effective camera for a specific application. Depending on a monitoring scenario, some cameras are better suited than others for addressing an application. For example, are the cameras monitoring a convenient store, brightly lit warehouse, construction site or fast moving objects? Unfortunately, the optimum feature set may not become relevant until a crime has been committed, and a jury has difficulty making sense of video forensics due to "low image quality." See sidebar.

Working with diverse industry stakeholders, UL developed UL 2802, the Standard for Performance Testing of Camera Image Quality. UL 2802 establishes a quantitative benchmark that manufacturers, specifiers, integrators and end users can use to compare critical parameters related to camera image quality. The result of a UL 2802 test program is an objective set of performance scores for a camera's image quality attributes.

Cameras evaluated to UL 2802 are assessed to nine image quality attributes, and a score ranging from 0 to 100 is assigned to each of the attributes listed below:

- Image resolution
- TV distortion
- Relative illumination
- Maximum frame rate
- Sensitivity
- Veiling glare
- Dynamic range
- Grey level
- Bad pixel

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REVVING UP THE FIRE APPARATUS STANDARD

Canadian Automobile Fire Fighting Apparatus Standard

Updates reflect current considerations

The Third Edition of the CAN/ULC-S515 Automobile Fire Fighting Apparatus standard was published earlier this year, and its revisions addressed several key areas. The ULC Subcommittee on Fire Fighting Apparatus, comprised of apparatus manufacturers, fire chiefs, fire commissioners, fire marshals, fire insurance representatives, fire fighters, regulators, and other stakeholders worked to achieve consensus on the new requirements. Highlights of some of the changes made are described below.

One of the considerations in updating CAN/ULC S515 was making sure it aligned with requirements in the NFPA 1901 Standard for Automotive Fire Apparatus (2009 Edition). Other changes were made as described below.

Fire Pumps and Associated Equipment

The previous CAN/ULC-S515 requirements for industrial supply pumps and associated equipment rated over 12,000 L/min have been incorporated into the Chapter 15 Fire Pumps and Associated Equipment section. This eliminated the need for a separate chapter for industrial supply pumps.

Aerial Devices

Section 17.13 covers new requirements for stability testing requirements for aerial devices with envelope control (limited reach operating envelope aerials). Envelope control systems use electronic sensors that allow aerials to operate safely by restricting movement of a ladder when it is in danger of exceeding its limits. As such, the aerial device can operate at a point of minimum stability throughout the aerial's range of motion.

Maintenance, Inspection and Testing of In-Service Automobile Fire Apparatus

Prior to this edition, no Canadian standards dealt with in-service testing of fire apparatus in a fashion similar to NFPA 1911, the Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus. The responsibility for the maintenance, inspection and testing of automobile firefighting apparatus ultimately lies with the fire department that owns the apparatus. In order to address this situation, an informative (non-mandatory) Appendix B was developed that provides guidance on dealing with in-service inspections, maintenance and testing.

CAN/ULC-S515 Certification Considerations

A CAN/ULC-S515-13 bulletin was issued on June 12, 2013 that announced changes to the ULC Program for Automobile Fire Fighting Apparatus Listed. This is being referred to as the "**Vehicle Inspection Program – S515**". Some of the changes to this program are described below.

The current ULC Listing Mark will be replaced with a Certificate of Inspection. This approach was discussed with Canadian Regulatory Authorities at the May 2012 ULC Advisory Council Meeting, and the members agreed that the change was beneficial.

In addition to inspection and testing of each fire apparatus, similar to the current certification program, compliance with the requirements will be determined through factory audits to verify manufacturer conformance to the new edition of CAN/ULC S515. Audits will be scheduled to provide sufficient time to successfully complete the process prior to the effective date of November 1, 2014.

Automobile Fire Fighting Apparatus that are contracted before the November 1, 2014, effective date may be certified to CAN/ULC-S515-04 edition. Automobile Fire Fighting Apparatus that are contracted after November 1, 2014, will be inspected and tested to CAN/ULC-S515-13.

The Bulletin includes an addendum titled "ULC S515 Vehicle Inspection Program for Manufacturers of Automobile Fire Apparatus," which provides details of the ULC inspection program. The addendum also includes a table detailing changes in the 2013 edition of CAN/ULC S515. Copies of the ULC Bulletin are available at http://www.ul.com/canada/eng/pages/code-authorities/certificationbulletins/2013certificationbulletins/.

Being a National Standard of Canada, CAN/ULC-S515 is subjected to continuous maintenance using a consensus-based standards development process. Future revisions and additions will be considered to reflect changes to associated NFPA standards, technological innovations, and experience gained in the field. For additional information please refer to the following:

For ULC standards development inquiries contact Mark Ramlochan in Ottawa at Mark.Ramlochan@ul.com or at +1.613.368.4422.

For Regulatory Authority inquiries contact Pierre McDonald in Alberta at Pierre.McDonald@ul.com or at +1.780.419.3202; or Frank Donati in Oxford Mills, Ont., at Frank.Donati@ul.com or at +1.613.751.3404.

For ULC certification and testing inquiries contact Patrick Ginnaty-Moore in Northbrook, Ill., at Patrick.T.Ginnaty-Moore@ul.com or at +1.847.664.2366; or Jean Belanger in Toronto at Jean.P.Belanger@ul.com or at +1.514.247.4078.

NFPA Conference Attendees Receive Behind-the-Scenes Tour of UL's Center of Excellence

On June 9, 2013, approximately 80 NFPA Annual Meeting attendees and UL guests received an exclusive, behind-the-scenes tour of the building materials laboratories at UL's Northbrook, Ill., facility.

Attendees observed the various types of testing conducted by UL and the facilities used for that testing. Visitors witnessed live demonstrations on roofing material, the Steiner tunnel and a fire extinguisher pan test. UL also presented information on fire resistance and fire containment test equipment such as the floor furnace, column furnace and panel furnace. With the aid of the Northbrook Fire Department, UL demonstrated a fire engine pump test and the methods used to test and analyze aerial ladders and devices for stresses and cracking. The tour ended with a full-scale fire test of a rack storage assembly storing exposed expanded plastics, sponsored by the National Fire Protection Research Foundation.

In addition to the lab tours, presentations explored UL's large-scale fire testing capabilities as well as UL's ongoing research involving the impact of photovoltaic panels on separately tested roofing materials for fire resistance. These presentations helped to share some of the current research programs underway at UL with external partners that involve fire protection questions in modern building construction.

The day concluded with brief remarks by U.S. Representative Brad Schneider, whose district includes Northbrook.

For more information on this tour or a return NFPA tour in 2015, please contact Matt Schumann at Matthew.Schumann@ul.com.

Certification Mark Clarification

A recent article in "the 2013 issue 2" of The Fire & Security Authority on the enhanced UL Mark stated that "Now there is only one mark," when describing how UL Listing and Classification Marks can transition to the UL enhanced Mark. We wanted to clarify that both the UL Listing/Classification Marks and the enhanced UL Certification Marks will be in use, will appear on products in the marketplace and are valid indications of UL certification. Please accept our apologies for the confusion.

For additional information please visit the Marks Hub at **markshub.ul.com**.

Digital Video

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This simple quantitative rating system translates a complex performance parameter into easily comparable numbers, and enables more informed price vs. performance decisions. See sidebar on page 3.

Manufacturers benefit from having an independent, objective third-party assessment of their product's performance. UL's evaluation and certification program differentiates a manufacturer's camera from those that have not been tested or certified.

Cameras evaluated to UL 2802 will carry the enhanced UL Mark and badges. In addition, the ratings for each image quality attribute can be found on the camera's packaging and/or the product literature. This Certification will complement the camera's safety Listing.

Ultimately, video image quality is an important consideration when selecting a video camera for a security system. With a UL 2802 certified camera, users will be able to better assess whether a camera best fits a specific scenario by reviewing camera attributes important to an application. UL 2802 can take the guess work out of the selection process and improve your ability to recommend, specify or request exactly what your system and budget needs.

For more information about UL 2802 performance testing and certification of video cameras, please contact Lou Chavez at +1.847.664.3238 or email us at Louis.Chavez@ul.com. Please see the recently published UL white paper on UL 2802 at UL.com/library and search for keyword "UL 2802.

Questions & Answers

What is included in UL's Firefighter Safety Research Institute's (FSRI) new online course?

"Effectiveness of Fire Service Vertical Ventilation and Suppression Tactics in Single Family Homes" serves as a culmination of the work performed under the 2010 Department of Homeland Security Assistance to Firefighter Grant Program. The interactive training walks learners through the research approach, experimental setup, test results and tactical considerations derived from the test results. This course supplements the project's technical report through fire service commentary on the impact UL research has on firefighting tactics; as well as interactive fire scenarios and video and images from 17 full-scale residential structure fires.

There are many features to the course. Three separate paths are available (abbreviated, complete, and instructor), ranging in duration from one hour to more than two hours. An overview of modern fire challenges facing the fire service provides a summary of factors impacting fire dynamics – increased fuel loads, large open spaces and lightweight construction. To enhance the educational experience, an introduction to the key concepts of heat release rate, flow paths, and stages of fire development is included. The 12 tactical considerations developed from the research results are illustrated to aid the fire service in integrating these into their education and fire ground tactics. Learners have the opportunity to use interactive models to develop an in-depth understanding of the impact of ventilation and water application on fire dynamics. Instructors are provided links to related research material to aid in tailoring the research results to specific fire service operations. The course content is available online at **ULfirefightersafety.com**. For mobile users, the course is compatible with tablet devices and iPad via the Articulate Media Player application in the App Store.

UL's Firefighter Safety Research Institute is dedicated to increasing firefighter knowledge to reduce injuries and deaths in the fire service and in the communities they serve. For more information on UL FSRI projects, visit our website at **ULfirefightersafety.com**, like us on Facebook or follow us on Twitter.

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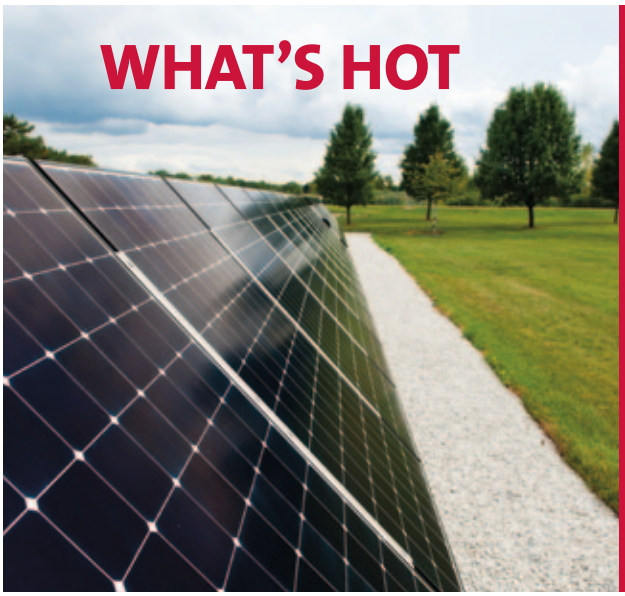

UL Hosts 2013 Solar Power International Conference Tour

On Oct. 21, 2013, UL hosted a workshop for the photovoltaic (PV) industry in conjunction with the 2013 Solar Power International Conference in Chicago. PV industry stakeholders attended a daylong forum that included presentations on fire requirements of roofs, revisions to UL 1703, the Standard for Safety of Photovoltaic Modules, and PV research on wildland fire ember exposures and firefighter safety. Included in the event were demonstrations of fire tests.

For additional details, please contact Bob Backstrom at **Robert.G.Backstrom@ul.com** or Chris Flueckiger at **Christophekiger@ul.com**.

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