american lighting association

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U.S. Federal Communications Commission
Office of Engineering and Technology
Laboratory Division

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Comments In Response To:

Draft Laboratory Division Publications Report: **LED Lighting Products** (Publication 640677 D01 LED LIGHTING v01) and particularly the question, "What rules and approval procedures apply to LED lighting devices?"

The following comments are submitted by the American Lighting Association (ALA) acting on behalf of its members who design, manufacture, import, specify and sell LED lighting products and are active in the residential lighting markets in the U.S., Canada and the Caribbean.

The ALA has been following the general subject of radio-frequency interference from lighting products for some time because; there have been situations involving RFI particularly as electronic dimmers appeared and, more recently, when electronic ballasts and other electronic products become available and widely used. With respect to RFI problems from LED lighting products, we have been notified of isolated problems of interference and this does not appear to be a wide scale issue. This seems, therefore, like a good time to be working on this issue and the ALA would be pleased to be a resource as well as part of the effort.

We appreciate the OET's efforts to address the problems of controlling unwanted radio frequency emissions from LED lighting. It is both timely and important to do this now because of the rapid growth of LED lighting products that include lamps, luminaires, controls and integrated home lighting control systems.

The postings responding to the OET question to date (1/7/16) have been helpful and informative and we thank Mr. Graff, Mr. Lester and Mr. Yandek for their comments. With their focus on

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LED lighting, Mr. Yandek's comments were particularly timely and so we submit the following additions:

1. Because of the growing number of regulations involving LED lighting products, definitions are important. For lighting products, we recommend using the definitions included as part of the EPA ENERGY STAR® Standards including the recently completed ENERGY STAR Luminaires V2.0 and ENERGY STAR Lamps V2.0 which will take effect June 1, 2016.

Several of the definitions (as marked) are referenced to the Illuminating Engineering Society (IES) Recommended Practice RP-16-10 as the source. All of these definitions are current, have been carefully written and are widely used by the residential lighting industry. The IES RP-16 publication is ANSI Approved.

The definitions of particular importance in responding to the OET's question above are as follows:

LED Lighting Product Definitions

Connected Luminaire: A luminaire or retrofit which includes elements or instructions (hardware and software or firmware) required to enable communication in response to consumer-authorized energy or performance related commands and complies with all requirements for connected in the specification. These elements may be resident inside or outside of the base luminaire or retrofit.

Inseparable SSL Luminaire: A luminaire featuring solid state lighting components (i.e. LEDs and driver components) which cannot be easily removed or replaced by the end user, thus requiring replacement of the entire luminaire. Removal of solid state lighting components would require (for instance) the cutting of wires, use of a soldering iron, or damage to or destruction of the luminaire. This definition does not encompass luminaires which feature LED light engines or integrated LED lamps which are user replaceable /upgradeable without the cutting of wires or the use of solder, or the specific residential luminaire types designated "directional".

Integrated LED Lamp: An integrated assembly comprised of LED packages (components) or LED arrays (modules), LED driver, ANSI standard base and other optical, thermal, mechanical and electrical components. The device is intended to connect directly to the branch circuit through a corresponding ANSI standard lamp-holder (socket). (IES RP-16-10).

LED Driver: A device comprised of a power source and LED control circuitry designed to operate a LED package (component), or an LED array (module) or an LED lamp. (IES RP-16-10).

LED Light Engine: An integrated assembly comprised of LED packages (components) or LED arrays (modules), LED driver, and other optical, thermal, mechanical and electrical components. The device is intended to connect directly to the branch circuit through a connector compatible with the LED luminaire for which it was designed and does not use an ANSI standard base (derived from IES RP16-10).

LED Luminaire: A complete lighting unit consisting of LED-based light emitting elements and a matched driver together with parts to distribute light, to position and protect the light emitting elements, and to connect the unit to a branch circuit. The LED-based light emitting elements may take the form of LED packages (components), LED arrays (modules), LED Light Engine, or LED lamps. The LED luminaire is intended to connect directly to a branch circuit. (IES RP-16-10).

Luminaire (Light Fixture): A complete lighting unit consisting of lamp(s) and ballast(s) (when applicable) together with the parts designed to distribute the light, position and protect the lamps, and to connect the lamp(s) to the power supply (IES RP-16-10). Note: this is the most general definition of a luminaire.

Residential Luminaire: A luminaire marketed for and intended to be used in a residential environment notwithstanding limited use in commercial, business and industrial environments. (Adapted from FCC 47 CFR parts 15 and 18).

2. Because of the wide and growing diversity of LED products, the ALA is concerned about potential requirements that define the parts and the configurations of the lighting products that are required to be tested. For example, we believe the interests of all involved are best served if some parts of the LED lighting system are tested for RFI on a component level while others are tested, depending upon the design, at the luminaire level and we agree with Mr. Yandek's comments on this subject and especially his comments listed as 5, 7 and 14. We expect to be a part of the process that works to determine the best approach as requirements are developed.

Thank you for the opportunity to comment.

Sincerely,

Eric Jacobson
President & CEO
American Lighting Association

The American Lighting Association is a trade association representing over 3,000 members in the residential lighting, ceiling fan and controls industries in the United States, Canada and the Caribbean. Our member companies are manufacturers, manufacturers' representatives, retail lighting showrooms and lighting designers that have the expertise to educate and serve their customers.