LUTRON ELECTRONICS CO., INC.

DR. S. PEKKA HAKKARAINEN, MA, PhD
Vice President

03 September 2015

VIA EMAIL TO: lighting@energystar.gov

Ms. Taylor Jantz-Sell
Energy Star Lighting
Environmental Protection Agency
1200 Pennsylvania Ave., MC 6202J
Washington, DC 20460

ENERGY STAR® **Lamps 2.0 Draft 3 Comments**

Dear Ms. Jantz-Sell,

Thank you for the opportunity to review and provide comments on ENERGY STAR® Program Requirements for Lamps Version 2.0 DRAFT 3. These comments are submitted on behalf of Lutron Electronics Co., Inc.

As you may know, Lutron was founded in 1961 and is headquartered in Coopersburg, Pennsylvania. From dimmers for the home, to lighting management systems for entire buildings, the company offers more than 17,000 energy-saving products, sold in more than 100 countries around the world. In the U.S. alone, Lutron products save an estimated 10 billion kWh of electricity, or approximately $1 billion in utility costs per year. The company's early inventions— including the first solid-state dimmer invented by Lutron's founder, Joel Spira—are now at the Smithsonian's National Museum of American History in Washington, DC.

Please find our detailed comments below. We look forward to working with you further on this important project. Please contact Stephen Irving at 610-282-6468 or sirving@lutron.com if you have questions or would like more information on these comments. Thanks again for your consideration.

Respectfully submitted,

Pekka Hakkarainen, PhD
Vice President
Lutron Electronics Co., Inc.

7200 SUTER ROAD
COOPERSBURG, PA 18036-1299
USA

TELEPHONE 610 282-6766
FAX 610 282-7477

1. Connected Products (Section 12.6 through 12.12)

To the extent possible, EPA has tried to align specifications for lighting products as these products are typically used together to form systems. We would like to thank EPA for this harmonization effort, ensuring that energy efficient lighting products can be used together.

During the stakeholders meeting for Energy Star Luminaires 2.0, EPA signaled a desire to make requirements for Connected products flexible to allow innovation in this young product category. The Connected requirements in Energy Star Lamps 2.0 Draft 3 are mostly the same as Luminaires, except for requirement of Section 12.8 Clause 1, referring to open protocols for all communication layers.

There are several models of the layers of communication protocols; one common model is the Open Systems Interconnection model ("OSI model"). This model defines seven different layers of the protocol, and we are not familiar with *any* commercialized product that uses an open protocol in each of these layers. Additionally, there are no obvious consumer benefits to implement open protocols in all layers.

The requirements of Section 12.9 through 12.12 ensure that the expected benefits of the use of an open protocol are realized without the prescriptive requirement necessitating the use of open protocols in each layer. Removal of requirement 12.8 Clause 1 will better align with the Luminaires 2.0 Energy Star Standards, allow manufacturers to continue to innovate in this young product category (especially where open standards are used in an external controller), and still continue to deliver the value to the end-user.

RECOMMENDATION: Rename Section 12.8 to "Open Access", delete Clause 1, and renumber Clause 2 appropriately.

Additionally, the Standby power requirements are restated in Section 12.6.

RECOMMENDATION: Replace the requirement with a reference to Section 11.7 to ensure consistency:

Source Type	ENERGY STAR Requirements	Measurement and/or Reference Documents	Supplemental Testing Guidance
All source types	Product must continue to comply with the applicable product safety standards – the addition of the functionality shall not override existing safety protections and functions. ~~Product shall not consume more than 0.5 watts when in standby mode.~~ Product must comply with section 11.7 Standby Power Consumption	Method of Measurement: None	Connected products without color tuning capabilities shall be tested at full power for all applicable requirements. Connected products with color tuning capabilities shall be tested under the conditions specified under Section 5.1. Compliance with connected functionality requirements shall be demonstrated through examination of product and/or product documentation.

2. Off State Power Consumption (Section 11.7)

OFF STATE is not defined and requirements do not belong in a section for Standby Power. OFF MODE is defined in the referenced Methods of Measurement, but lamps without integral controls do not have an OFF MODE (they can only be off when no power is applied). To prevent confusion and inconsistent test results, we recommend either deleting this requirement, or defining OFF STATE and drafting an associated Test Method.

3. Start Time (Section 11.4)

Some features that help drive customer adoption of these energy savings products, such as a gentle fade-to-on, can be misconstrued in the measurement of Start Time. We have experience with laboratories where the reported Start Time value mistakenly included the intentionally-designed fade time. Without clarifying this issue, manufacturers may be forced to remove these important customer-desired features in Energy Star Certified lamps.

RECOMMENDATION: Add "Fade time shall not be included in the measurement of Start Time." after the stated ENERGY STAR Requirements in the table of Section 11.4.

In the Draft Test Method for Start Time (from Jan 2013), EPA acknowledges that the definition of Start Time came from research on CFLs. We do not believe this definition is appropriate for LEDs. Additionally, the test method does not reflect typical customer interaction with Connected Products that enter a Standby Mode.

RECOMMENDATION: We request that the Test Method be opened for revision through stakeholder feedback and that this work be completed prior to the implementation date of the Lamps/Luminaires 2.0 Standards.