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May 17, 2013

Ms. Taylor Jantz-Sell  
ENERGY STAR Lighting Program Manager  
1200 Pennsylvania Ave, NW (6202J)  
Washington, DC 20005

Re: ENERGY STAR Program Requirements for Lamps Version 1, DRAFT 4

Dear Ms. Jantz-Sell,

Thank you for the opportunity to provide the comments on Draft 4 of the ENERGY STAR Lamp Specification Version 1. These comments are submitted on behalf of Hubbell Lighting's Solid State Lighting team in cooperation with Hubbell Lighting ENERGY STAR partner brands.

As you may know, Hubbell Lighting brands develop and market ENERGY STAR luminaires that incorporate both LED light engines as well as energy efficient CFL and LED lamps to meet our customers' diverse lighting system needs.

Our comments/concerns are primarily focused on the proposed Dimming Performance requirements in Draft 4. We agree that there is much work to be done on the complex subject of dimming performance and compatibility. While the EPA valiantly attempts to take a step in the right direction to address customer dissatisfaction with dimmable products, the Dimming Performance requirement is premature and should be removed completely until such time as industry standards and test methods are established. At most, the dimming tests required to meet ENERGY STAR for dimmable lamps should be those outlined in the Luminaire Specification Version 1.2 for dimmable LED light engines.

Our detailed comments/concerns are outlined below:

## **Dimming Performance**

### **Excessive test burden and added product cost**

As proposed the dimming performance testing will add an excessive testing burden for lamp manufacturers, even when not required to be done in an EPA recognized lab. This time consuming testing will result in added product cost for the customer with very little gained in addressing actual dimming performance dissatisfaction. The requirement for 80% of all tested lamp/dimmer combinations to pass as proposed does not equate to 80% or even a large percentage of the possible dissatisfaction problems being addressed.

There are other ways to take positive steps to address dissatisfaction without preempting the development of industry standards and test methods. Consider just a few of the many examples that could be raised:

### **Less costly steps to address dissatisfaction**

Many LED light engines and lamps work well and are considered compatible by both lamp manufacturer and dimmer control manufacturer when design parameters of both are adhered to.

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The proposed testing requirement of both 1 and 4 lamps with a multitude of dimmers and types does not adequately take this into account.

For a common example, when a homeowner who has (1) 65W incandescent lamp on a dimmer control replaces it with a 15W comparable lumen LED lamp, he will likely encounter flicker or other dimming problems simply because the dimmer control type needs to detect a minimum load of around 40W. Neither the lamp nor the dimmer control is faulty; they are performing as individually designed and marketed.

However, most homeowners are unaware of the design intent and will assume the new LED lamp is poorly designed or faulty. A report of dissatisfaction from this homeowner does not justify excessive testing for the lamp manufacturer.

Ironically, the proposed testing would not eliminate dissatisfaction in this case. For example, the lamp manufacturer could choose 2 LED compatible dimmers, 2 forward phase dimmers, 2 dimmers with pre-set levels, and 4 ELV dimmers totaling 10 and pass the 80% requirement. The resolution is still to inform the customer that one lamp will not work on this dimmer type and a different dimmer control would eliminate the problem.

Why not focus the efforts of ENERGY STAR on educating the homeowner and requiring the manufacturer to provide intended dimming guidance until industry lays the framework and sets standards to address more effectively?

### **Visible Flicker - Pop-on/off**

Until more definitive studies are conducted to correlate Flicker Index to customer perception and hazards, customer acceptance should be used as the criterion or, at most, the operating frequency test as outlined in the Luminaire Spec.

A review possibly requiring the lamp to turn off before reaching any visible flicker at the claimed dimming percentage would be more worthwhile than gathering a plethora of dimming test data that does not address this. The homeowner does not know when dimming the lamp that he just exceeded the published percentage. If the lamp passes all flicker tests to the 20% minimum but flickers from 19 to 5% before finally turning off, nothing is gained and the customer is still dissatisfied.

### **Dimmer Control Adjustments/Model # changes**

Since the replacement lamp products may be connected to circuits with dimmer controls made many years ago, there is no assurance that dimmer control manufacturer models have not made design changes over the years. Nor is there currently any guarantee that it will not occur in future designs that may alter the dimming performance of the lamp.

Also, there are many dimmers with adjustments such as "CFL and LED compatible" which can significantly alter performance.

These issues are not addressed in the Draft 4 requirements. Lamp manufacturers should not be held responsible for performance variations outside their control.

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## **Positive R9 exemption for CFL**

The rationale to allow CFL lamps to remain exempt from the positive R9 value requirement based upon cost increases and penalty in efficacy while leaving it in place for LED sources seems unfair. It is also inconsistent with previous comments made by EPA indicating that trading efficiency for product performance is not the desired goal **regardless of source**.

*"To the extent the ENERGY STAR label designates highly efficient models within a product category; the Agency's emphasis is on technology neutral efficiency requirements. The Agency strives to set appropriate performance levels in a technologically neutral way to the greatest extent possible to ensure consumers have a consistent experience with an ENERGY STAR certified product. **Ensuring that product performance is not traded off against gains in efficiency does require in some cases establishing testing and performance requirements that are tailored for a given technology.**"*

It was stated in the webinar that EPA is allowing CFL manufacturers this exemption due to cited cost increase justifications and losses in efficiency. The exemption is being denied to LED sources because it was already written in the spec and therefore no added cost is incurred to keep the requirement.

However, LED manufacturers raised the same arguments prior to the current specification and were overruled. In fairness, the positive R9 requirement should be removed from the spec for all sources to allow LED lamp manufacturers the freedom to LOWER the cost and to focus on efficacy gains.

EPA should use the same rationale for R9 and higher CRI unless there is no added cost or efficiency penalty to obtain it.

## **Effective Date**

While there may be specification revisions that require very little redesign or additional testing to well defined industry standards that could be implemented in 12 months, Draft 4 as written requires a high degree of lamp redesign considerations and excessive testing to many unestablished methods. The Certification Bodies will also have a high volume of submittals. The timeframe of the effective date should more appropriately reflect the extent of the specification changes and be doubled based on stakeholder input.

Thank you for your consideration of our concerns and recommendations. We look forward to working with you further on this important project. If you have any questions on these comments, please contact me at 864-678-1050 or wweeks@hubbell-ltg.com.

Respectfully,

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Warren Weeks  
SSL Project Engineering Manager

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