

January 30, 2015

U.S. Environmental Protection Agency  
Energy Star Program  
Attn: Ms. Taylor Jantz-Sell

Re: Responses to Draft 1 of the Luminaires 2.0 Specification

Dear Ms. Jantz-Sell,

Good Earth Lighting appreciates the opportunity to comment on the proposed changes included in Draft 1 of the Energy Star Luminaires V2.0 Specification Document. Below is our Executive Summary for the Key Issues followed by a detailed discussion of actual changes.

## **EXECUTIVE SUMMARY:**

Good Earth's position on the Key Changes identified in your Cover Letter for Draft 1 of Luminaires 2.0 dated December 17th, 2014:

### **1. Increasing Efficacy – for Under Cabinet and Accent Lights**

Good Earth suggests raising the efficacy of Under Cabinet lights from 29LPW to 50LPW and Accent lights from 35LPW to 50LPW. In order to meet consumer-demands for “smooth light” (to avoid reflections of “LED Dots” in their granite counter tops, etc.) and very low profile in Under Cabinet fixtures, we must use technologies, such as frosted diffusers and different quantities, spacing and types of LEDs. This can lower efficacy by 15% to 20%. Further details follow below in the requirements detail discussion.

### **2. Adjustments to Specification Scope - Elimination of the “Without Lamps” Category.**

Good Earth opposes the removal of the option to ship “without lamps” as this removes the Linear Fluorescent Luminaire category and drops Linear Fluorescent as a light source from the Energy Star Specifications. We agree, the new DOE ballast and lamp standards insure that all linear fixtures, with or without the lamps included, will be as efficient as fluorescent technology allows. However, many consumers are unaware of these DOE standards and rely on the Energy Star logo as confirmation that a fixture meets high efficacy standards. This validation for the consumer would be eliminated under the new rules even though linear fluorescent fixtures meet the most rigorous efficiency specifications.

### **3. Adjustments to Specification Scope - Addition of the option to ship non-directional Luminaires with Energy Star Certified Lamps.**

Good Earth does not support allowing any light source socket mounting which would allow legacy light sources of lower efficacy (incandescent) or inferior thermal/electrical performance to be used as a replacement light source.

### **4. Adjustments to Luminaire Classification – Version 2.0 Change to the Classification of Outdoor Security from non-directional to directional.**

Good Earth strongly feels the Outdoor Security lights should remain in the non-directional category. Security lights are adjustable, multi-head products and the addition of the Zonal requirements adds complexity and testing costs and inhibits new innovation which enhance the safety and security aspects of this category of lights Further details are discussed below.

## DETAIL DISCUSSION

Each detail references a page/paragraph or Note Box Number as shown in Draft 1 of Luminaires 2.0. Our recommendation and our reasoning behind our position follows.

### 1. Luminaires Version 2.0 Draft 1 Page 1 Note box 2 - Changes for Pathways to Certification

#### A. Additional pathway to certification - Addition of the option to certify to Energy Star requirements for non-directional Luminaires by including Energy Star Certified Lamps

- I. Included in Energy Star Product Specifications for lamps 1.1 are lamps Fluorescent and LEDs with medium screw (E-26) bases Shipping luminaires with these Certified lamps would obviously mean the luminaires would have dedicated medium screw base sockets. This should not be allowed for medium (E26) screw based lamps.
  - a. Having screw based sockets in Energy Star qualified fixtures will allow efficient light sources to be replaced in the aftermarket by less expensive, readily available but highly inefficient light sources. Research done by the New York Times, USA today, Huffington post, as well as others, shows conservative estimates that as much as 30% of the population has stock piled a life time of incandescent bulbs.
  - b. The customer experience with Energy Star branded luminaires will also be compromised as:
    - i. Using any of the currently available Energy Star approved to Lamps 1.1, but marked not for use in totally enclosed fixtures, screw based LED or fluorescent options will cause premature failures (some of which can be catastrophic) due to thermal performance issues in totally enclosed fixtures. This may be less of a concern in vented or “open” fixtures as airflow is possible. However, most of fixtures sold are not vented or “open” but rather the totally enclosed type such as flush mount luminaires.
    - ii. The shortened life, or worse yet catastrophic failure, in these fixture types as outlined above, will lead to a very poor image of Energy Star branded luminaires.
  - c. The most efficient solution is to use an integrated LED light engine (due to the much higher luminaire efficacy achievable with the designed directionality of the light produced by the light engines). Replacement is simple, but with lifetime exceeding 36000 hours or 16 years of normal use, the need for replacement would not be significant.

#### B. Change to Certification Pathway – Removal of the option to certify luminaires that do not ship with lamps, drop of the Linear Fluorescent Luminaires Category and elimination of Linear Fluorescent as a Light Source.

- I. Good Earth opposes the removal of the option to ship “without lamps” as this removes the Linear Fluorescent Luminaire category and drops Linear Fluorescent as a light source from the Energy Star Specifications. We agree, the new DOE ballast and lamp standards insure that all linear fixtures, with or without the lamps included, will be as efficient as fluorescent technology allows. However, many consumers are unaware of these DOE standards and rely on the Energy Star logo as confirmation that a fixture meets high efficacy standards. This validation for the consumer would be eliminated under the new rules even though linear fluorescent fixtures meet the most rigorous of energy saving specifications.

## **2. Luminaires Version 2.0 Draft 1 Page 1 Note box 3 – Changes to Luminaires Classification**

- A. In reviewing the table and other notes we have found that Outdoor Security Lighting has moved to Directional Luminaires and as a result, requirements are added later in the document. Additionally, duplicate entries for other Outdoor lighting have been corrected. The details of these changes were not defined or clarified here.

## **3. Luminaires Version 2.0 Draft 1 Page 8 Note box 6 – Changes to Luminaires Classification**

- A. Some definitions and labeling requirements should be added defining the applications the approved lamps can be used in and the application the luminaire represents. For example, if a consumer buys a totally enclosed fixture there is currently not requirement in the Energy Star standards to clearly label the fixture and the bulbs as “totally enclosed”. When the consumer tries to replace the bulb at a later date, they may just buy the least expensive LED or fluorescent bulb rather than the higher cost lamps rated for “totally enclosed”. Such a mistake would result in premature failure and possible safety hazards.

## **4. Luminaires Version 2.0 Draft 1 Page 17 Note box 11 – Changes to Luminaires Efficacy Requirements**

- A. We propose changing the efficacy requirements for Under Cabinet lights from 29 LPW to 50 LPW, slightly lower than the 60 LPW in proposed in Draft 1 of the Luminaire 2.0 Specifications. We also recommend the 50 LPW be raised by 10% annually over the next 2 years as the cost of technology improves. The 50 LPW is needed now because:
  - I. We are finding that both the consumer and our major retail partners are challenging us, as a manufacturer of Under Cabinet lighting, to develop luminaires that offer smooth light output and very thin product chassis at lower costs to improve sales volumes. We find that we are able to meet this demand by improved diffuser and optics technology. However, this technology reducing the efficacy by 15% to 20%, making the 60 LPW much more expensive to achieve at this time.
  - II. We strongly believe the adoption rate of energy efficient cabinet lighting by the American Consumer will be much greater than if we can begin with a 50 LPW standard and increase to 60 LPW as the technology improves.
  - III. The improvement from 29 LPW in the current standard to our suggested 50 LPW is a 72% increase and shows a commitment to continuous improvement by the EPA and the Energy Star partners.
- B. We recommend changing the efficacy standard on Accent Lights from 35 LPW to 50 LPW rather than the 60 LPW proposed in in Draft 1 of the 2.0 Luminaire Specifications. We would also suggest that this 50 LPW specification can be raised by 10% annually over the next 2 years as technology improves. The reasons for these proposals are directly related to those listed above in section A.

## **5. Luminaires Version 2.0 Draft 1 Page 17 Note box 11 – Additional Zonal Lumen Density requirements for Outdoor Security**

- A. Almost all security lights are adjustable multiple head designs (1 to 4 heads are common). Adjustments which can be made by the consumer make any reference to the fixture nadir irrelevant. We suggest Security remain non-directional or be exempted from the Zonal requirements. Additionally, this would allow for future enhancements to the safety and security features of this category. Good Earth has already developed products about to be released under the current non-directional requirements, which utilize proprietary technology for enhancing illumination of intruders near and under the Security Light. Because we intentionally direct light into an area the proposed zonal requirement limits light, this enhanced product may not meet the proposed requirement. The requirement for .5% above may also have to be increased to account for the adjustability of the heads. Please see a typical luminaire below.



## **6. Luminaires Version 2.0 Draft 1 Page 23 Note box 18 – Revision (lowering) of the Start Time**

- A. Lowering the start time to .5 seconds may affect the life of fluorescent light sources especially in frequently switched applications.

## **7. Luminaires Version 2.0 Draft 1 Page 24 Note box 19 – Run Up Time**

- A. Fluorescent run up time needs a starting temperature defined. It is also not in the Lamp Standard 1.1. Light Sources started in cold temperatures have significantly longer run up times.

## **8. Luminaires Version 2.0 Draft 1 Page 31 Note box 29 - Labeling**

- A. Labeling on the fixture needs to include information on what type of application the luminaire is so the correct Energy Star lamp can be selected. The lamp standard must be correlated. For example, can an IC rated recessed down light use and Energy Star Certified lamp marked “Not for use in totally enclosed fixtures”? Without this coordinated marking, replacement of the shipped lamp after years of operation will be confusing to the consumer.

## **Conclusion**

In conclusion, most of the changes proposed in Draft 1 of Luminaires 2.0 accomplish of simplified requirements with streamlined processes except those mentioned above. We feel the potential loss of energy savings medium screw based sockets in Energy Star fixtures, the proposed efficacy requirements, and the elimination Linear Fluorescent Category need to be changed to focus on improving adoption rates through improved products with lower costs while increasing luminaire efficiencies.

We look forward to work together in the evolution of Luminaires 2.0 and the improvements it will bring.

Sincerely,

The Good Earth Lighting Energy Star Team