

14 December, 2012  
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Taylor Janz-Sell, ENERGY STAR Lighting Program Manager  
1200 Pennsylvania Ave, NW (6202J)  
Washington, DC 20005

Subject: Seoul Semiconductor Comments to Proposed Changes to ENERGY STAR Luminaires

Dear Taylor,

We have reviewed the proposed changes/clarifications to the Energy Star Luminaires V1.1 specification and have the following comments and recommendations that will add additional clarity and uniformity to the specification.

#### 1) Source efficacy for Non-Directional Luminaires

We concur with the proposed change to keep the current efficacy requirements for light engine in place, but recommend that the requirement for residential, non directional, inseparable Luminaires be adjusted from 70 lm/W to 65 lm/W as well. The rationale for this request is based on performance and cost. For example for a non-directional decorative fixture, you can design it as a inseparable fixture or use a light engine as defined in the specification. The luminaire designed as an inseparable fixture will have the lower cost, as the design utilizes the luminaires structure as the heat sink. With the proposed change to the efficacy specification, it will have to meet 65lm/W as a complete luminaire. For the same type of luminaire that utilizes a light engine, the product cost will be higher, as the engine has to be over designed to meet many different requirements, and the luminaire will have a lower efficacy. In the current specification, a light engine is required to have an efficacy of 65lm/W as a source, so utilizing it in the same type of luminaire with the same diffuser, or decorative glass, will result in a lower efficacy as there is typically a 10-15% optical loss. In order to speed the adoption of higher efficacy SSL luminaires within the residential market, our requested change to 65 lm/W efficacy still provides a dramatic performance improvement over the incumbent incandescent and CFL technology used in these fixtures, while allowing for improved integrated designs at a reasonable cost to the consumer.

#### 2) Source Minimum Light Output for Non-Directional Luminaires

We concur with the proposed changes to the specification to allow for lower light output levels for different

luminaire types. These changes do not cover all luminaire types. For example, there are Ceiling mount and close to ceiling type fixtures that utilize a single A19 type light source. At the luminaire level, there is additional light loss from the diffuser, so these luminaires do not provide 800 lumens. These types of luminaires should also be excluded from the 800 lm requirement.

### 3) Inseparable SSL Luminaires

We concur that changes need to be made to specification in regards to the definition of this category.

The current specification language is not clear and since the requirements for this fixture type are in the directional section of the specification, there cases where Certifying Bodies are testing Non-directional, Inseparable luminaires as directional, and imposing Zonal distribution and color uniformity requirements on this class of fixture.

As stated above, we believe that for residential, non directional luminaires, the Efficacy requirements should be changed to 65lm/W to agree with the other sources.

Thank you for your consideration and attention to our comments.

David Neal  
Applications Manager  
Seoul Semiconductor, Inc