

April 3rd, 2015

Taylor Jantz-Sell
US Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Subject: ENERGY STAR® Luminaires V2.0 Specification DRAFT 2

Dear Ms. Jantz-Sell,

Cree has reviewed the ENERGY STAR® *Luminaires V2.0 DRAFT 2* Specification released in March 6th 2015. Cree recognizes the importance of the EPA and industries efforts to progress and improve the specification for luminaires in an effort to promote energy efficiency within the lighting industry for one of the most recognized product categories in the ENERGY STAR portfolio. Cree respectfully submits the following comments and request that each be carefully considered prior to finalizing the specification for release.

Thank you in advance for your consideration. Please feel free contact me at 919.407.4077 with any further questions that you may have.

Sincerely,



Jonathan Vollers
Manager of Testing Services / Lighting

GENERAL

Cree believes that the ENERGY STAR *Luminaires V2.0* specification needs focus on helping drive energy efficient lighting adoption rather than just increased performance for performance sake. Therefore, much of the comments enclosed are trying to balance performance with cost so that consumers get the functionality they desire at a cost that moves the market and actually pulls watts off of the grid.

The goal of ENERGY STAR is to help businesses and individuals save money and protect our climate through superior energy efficiency which will be further advanced by mass adoption over superior performance on a smaller scale.

SECTION 2 - EFFECTIVE DATE

Effective Date (Page 2): Cree proposes a 9-month grace period (for products qualified to *Luminaires v1.2*) from the date of release of *Luminaires v2.0*.

SECTION 4 - DEFINITIONS

Color Tunable Luminaire (Page 5): Cree requests the definition be updated to the following to clarify the color change to be controlled, and not simply by dimming the product, and to qualify the comment “along the blackbody curve” and to be consistent with Cree’s proposal to the *Lamps* specification:

For the purpose of this specification, a color tunable luminaire has functionality that allows the end user to alter the color appearance of the light generated by the luminaire via a control feature, independent of dimming function. This tuning must include white light that is capable of meeting the specification’s CCT requirements, and can alter the color appearance along the black body curve (within the boundaries defined in ANSI C78.376-2001 or C78.377-2011 as applicable), or may also extend to colors beyond the ANSI defined correlated color temperature ranges.

Connected Luminaire (Page 6): Cree requests the definition be updated to a more simplified version and to be consistent with Cree’s proposal to the *Lamps* specification:

A connected luminaire or retrofit includes elements (hardware, software and/or firmware) required to enable communication in response to consumer-authorized energy or performance related commands. These elements may be resident inside or outside of the base luminaire.

SECTION 5 – TESTING CRITERIA

5.1 Testing Color Tunable Luminaires (Page 9): Cree requests that the EPA remove the repetition of the definition from Section 4 (to reduce confusion and risk of differences between the definition and the paragraph) and remove the requirement for the default setting testing. The least efficacious ANSI

CCT bin setting should be satisfactory but there should be a justification as to why it is the least efficacious CCT setting provided to the CB's to ensure compliance to this requirement.

SECTION 9 – PHOTOMETRIC PERFORMANCE

9.1 Luminous Efficacy Non-Directional (Page 15-16): Cree agrees with the new 2016 efficacy requirements but does not agree with automatic increase in 2018. Cree believes there will be a need for a true specification revision within that timeframe and therefore the increases in efficacy can be discussed at that time. Cree also believes that an automatic increase, across the board, will stifle the addition of features that may drive better adoption of energy efficiently over just the next level of efficacy increases.

9.2 Luminous Efficacy Directional (Page 16-18): Cree agrees with the new 2016 efficacy requirements but does not agree with automatic increase in 2018. Cree believes there will be a need for a true specification revision within that timeframe and therefore the increases in efficacy can be discussed at that time. Cree also believes that an automatic increase, across the board, will stifle the addition of features that may drive better adoption of energy efficiently over just the next level of efficacy increases.

9.3 Correlated Color Temperature (Page 19): Cree would agree to the addition of the 2200K and 2500K CCT bins as those are finalized.

SECTION 11 – ELECTRICAL PERFORMANCE REQUIREMENTS

11.1 Start Time (Page 24): Cree requests that the Start Time be reduced by no more than 250ms to 750ms from application of power. This provides 25% reduction in the requirement but still allows for some design innovations which may increase customer functionality and/or allow better performance in other areas but may be near the proposed 500ms requirement. Cree would advocate that by driving reductions in Start Time this may hurt the performance of other characteristics that have more impact and importance on the consumer lighting experience.

If the time is reduced to the proposed 500ms, Cree would request re-examining the definition of Start Time as the current definition seems to be somewhat ambiguous and there may be a need to ensure compliance more accurately.

SECTION 15 – CONTROLS REQUIREMENTS

15.2.1 Connected Product Criteria (Page 30): Cree requests that the EPA remove the repetition of the definition from Section 4 (to reduce confusion and risk of differences between the definition and the paragraph).

15.2.2 Open-Standards & Open-Access (Page 30): Cree believes a connected luminaire should be held to the same photometry, electrical and mechanical specifications as a standard SSL luminaire would per this specification.

Energy Consumption Reporting (calculates, store, and reports) will add considerable cost and development time which would adversely affect energy efficient lighting. Energy management and reporting seems to have little to no value in the residential lighting market. Therefore, Cree would not recommend this type of function being a requirement.

15.2.3 Energy Consumption Reporting (Page 30): Cree requests to strike this paragraph from the proposed requirements as this provides little to no value with respect to residential lighting. Furthermore this will hinder energy efficient lighting adoption due to added cost and development time.

Notebox 17 (Page 30): Cree believes that the *Lamps & Luminaires* specification should drive a simplistic approach and allow consumers to select the winning features vs. cost which will take shape over the next few years. By only requiring a very basic suite of criteria the specification will allow much broader innovation and as we all experience this new market take shape we can further discuss if there are any negative impacts that need to be avoided and therefore added as restrictions or performance requirements in either of the ENERGY STAR specifications controlling lighting products.

SECTION 16 – PRODUCT LABELING & PACKAGING REQUIREMENTS

16.1 Labeling & Packaging: All Luminaires (Page 31): Cree applauds the EPA’s taking a lead in trying to “standardize” the verbiage utilized around describing the color of the light, Luminaires and luminaires provide. Note – Soft and Warm White have been used interchangeably to describe the 2700K color point and therefore neither of these terms should be used to describe the 3000K color point as it will cause considerable confusion to the consumer.

Cree would propose the following standard terms that should not only be applied to *Luminaires V2.0* but the *Lamps* specification to drive a consistent message that all manufacturers’ and partners to ENERGY STAR could adopt:

2200K & 2500K (if added) = Candlelight

2700K = Warm White

3000K = Bright White

3500K = Neutral White

4000K = Cool White

5000K = Daylight