

Environmental Protection Agency
Energy Star Program
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Washington, D.C. 20160

**Philips Lumileds
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Subject: Version 1.0 DRAFT 1 of the ENERGY
STAR Program Requirements Product
Specification for Lamps (Light Bulbs)

Date: December 9, 2011

Dear Mr. Baker:

Philips Lumileds continues to actively support the development and expansion of the ENERGY STAR program and strongly believes that it will have a positive impact on market confidence and adoption of LED lighting. Our collaboration with EPA is intended to assure technical and business alignment and to remove barriers to the design, development and market introduction of new, energy efficient, lighting solutions.

We were pleased to see the development of the ENERGY STAR Program Requirements Product Specification for Lamps (Light Bulbs). In our review of Draft 1 we found that this specification in some areas to be in line with what we believe is the proper LED emitter level requirements that are evolving in the marketplace. In other areas, specifically as it relates to such things as the Photometric Performance Requirements we see performance levels being defined at a system level (e.g. lamp level) that will require component level performance which can potentially translate into cost/availability issues.

Our specific response points to the specification are as follows:

Section	Sub-Section	Draft 1 Spec
Photometric Performance Requirements	CCT Solid State	4-Step ANSI quadrangle
<i>Philip Lumileds Comments</i>	<p>LED component manufacturing capabilities can support CCT accuracy of 4 SDCM (or better) but this does not guarantee that the lamp manufacturer can design and manufacture a system to meet this system performance. Typically, a lamp manufacturer needs a higher level of performance (e.g. 1-3 SDCM) at the component level in order to meet the targeted system performance.</p> <p>In conjunction to the potential need to deliver components at a high level of performance (e.g. 1-3 SDCM) there is an impact to product cost and availability.</p> <p>This system level performance should be a goal for the market as a whole as price/performance improves but not as a minimum requirement.</p>	
Section	Sub-Section	Draft 1 Spec
Photometric Performance Requirements	Color Maintenance Solid State	0.004 u'v'
<i>Philip Lumileds Comments</i>	<p>Similar to our previous comment, meeting this requirement at a LED component level is achievable but it can present a challenge at a system design level. Fixture manufacturers typically require a higher level of performance at a component level in order to achieve the target system performance.</p> <p>In conjunction to the potential need to deliver components at a high level of performance (e.g. 1-3 SDCM) there is an impact to product cost and availability.</p> <p>This system level performance should be a goal for the market as a whole as price/performance improves but not as a minimum requirement.</p>	
Section	Sub-Section	Draft 1 Spec
Photometric Performance Requirements	Color Uniformity Solid State Directional	0.004 u'v'
<i>Philip Lumileds Comments</i>	<p>Similar to our previous comment, meeting this requirement at a LED component level is achievable but it can present a challenge</p>	

	<p>at a system design level. Fixture manufacturers typically require a higher level of performance at a component level in order to achieve the target system performance.</p> <p>In conjunction to the potential need to deliver components at a high level of performance (e.g. 1-3 SDCM) there is an impact to product cost and availability.</p> <p>This system level performance should be a goal for the market as a whole as price/performance improves but not as a minimum requirement.</p>	
Section	Sub-Section	Draft 1 Spec
Lumen Maintenance and Reliability Requirements	Lumen Maintenance Solid State	10,0000 hours
<i>Philip Lumileds Comments</i>	<p>Reducing the minimum lifetime requirements from 25k hrs to 10k hrs will allow lamp designers to drive the LEDs harder to reduce LED count, but this will have an adverse effect by increasing the temperatures and leading to higher CCT shifts, stability and uniformity. At some levels, it runs counter to EPA's focus on quality and reliability.</p>	

Date: October 29, 2010

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These comments are consistent with the feedback we provided at the 30-November 2011 meeting in Washington D.C. and hope they are consistent with what you heard. We recognize that the objectives of the Energy Star Lamp specification is focused on delivering reliable product with a performance level (output, color quality, etc.) that meets the need of the market.

As part of the discussion at the recent meeting, EPA presented some data/information on the needs of the market and are looking forward to receiving this and the other information referenced so as to help us better understand EPA's perspective of the customer's needs.

Philips Lumileds looks forward to working with the EPA on developing this new specification so that it best supports both the needs of the market and the capabilities of the supporting technologies.

Best regards.

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