

December 5, 2011

Re: Comments - DOE Energy Star Program Requirements – Product Specification for Lamps, Version 1.0

General comment:

Thank you for the opportunity to comment on the Version 1.0 lamp specification draft that is intended to eventually replace the current Compact Fluorescent and LED lamp specifications. On behalf of the Toshiba LED Lighting Division, we will direct our comments towards the articles effecting LED Lighting, as we do not supply CFLs in the US market. We understand the intent of the new specification is to be technology neutral, basically combining the LED products and the CFL products to all meet one uniform spec. We believe this strategy will create several significant issues, as things like rapid cycle testing and rated life claims are specific to each respective technology and should not be combined.

Specification Scope & Lamp Classification

It is an interesting decision to not include any low voltage lamps on the new specification. The reasoning given for this; dimmer compatibility, inconsistent and

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immeasurable transformer evaluation, and segment size in residential markets is sound reasoning, but this change could negatively affect the quality and performance of future, price driven mr16 lamps.

The exclusion of GU 10 based (line voltage mr16) lamps will also contribute to the product gap that residential customers will face when a more decorative type application exists. We have seen high sales volume where a low voltage track design was replaced with a GU 10 system, creating the desired affect at a lower, more energy efficient cost.

As utility programs have resorted back to Energy Star as their performance baseline, it will be interesting to see how this affects the small business rebate programs. We believe this will not a significant effect on larger scale commercial applications where ROI requirements will be met regardless of the rebate.

Product Qualification:

We agree with the Product Family Qualification submission process. Testing the sample unit of a family that will have the most difficult time meeting the standards should be sufficient for that family qualification.

Photometric Performance Requirements

Lamp Efficacy / Light Output

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The nominal increase in lamp efficacy requirements is on par with the industry trends. Using a lumen output range to quantify lamp performance creates a more accurate expectation of the lamp characteristics. Using CBCP as the qualifier for claiming equivalency creates an unrealistic expectation, for example the MR16 50w equivalent. CBCP encourages distribution patterns that are completely different from the characteristics of incumbent technology.

Correlated Color Temperature

As was discussed at the roundtable in DC, Energy Star would be leaving an open gap in the lamp specification by not including anything over 5000K. The most obvious application of this is exterior lamps in landscape applications.

Changing the specification from a 7-step McAdam ellipse to a 4-step McAdam ellipse will increase the cost of manufacturing the units by 10-30%. We do not see this as a necessary step to increase market adoption. It may have an adverse affect, as the increased cost to the manufacturer would result in a slower overall market price reduction.

CRI

The current requirement of CRI ≥ 80 is sufficient

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Color Maintenance Requirements: Solid State Lighting

Changing the specification from .007 to .004 could also result in a significant price increase in material costs, as well as additional 8+ months of testing. We believe the existing specification of .007 is more than sufficient to assure quality products.

Lumen Maintenance and Reliability Requirements

Lumen Maintenance

The Minimum Lumen Maintenance at End of Test percentages are sufficient

Reliability Requirements

We feel strongly that decreasing the “technology neutral specification” to $\geq 10,000$ rated life is a disservice to the advancing LED technology and simply a way to mesh the two technologies in an area that should not be combined. Overdriving subcomponents to decrease rated life as a cost cutting measure is not a sustainable practice, discourages some aspects of product innovation, and opens the door for inferior manufacturing standards. A major selling point and cost justification is “Total cost of ownership,” which will be negated if this specification stands. Efforts towards educating the general public would be far more beneficial.

Rapid Cycle Stress Test

Again, this is simply a modified specification that is applicable to CFL technology and not LED technology. Requiring retesting of all LED integral lamps to accommodate the

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prevention of premature failure of CFLs is imposing unnecessary costs, as well as additional time for testing. This is a disservice to the LED lighting industry.

Luminous Intensity Distribution Requirements

We believe the distribution requirements for omnidirectional lamps do not provide an appropriate standard for many traditional A lamp applications. With proper packaging, an end user should be able to identify the correct use of lamps with varying distribution patterns. Applications such as ceiling fans and goose neck lamps do not require distribution that is common with incandescent technology. We feel the role of the Energy Star program is to educate and encourage the consumer to adopt energy efficient products. Photometric performance above and beyond minimum efficiency requirements and color quality should not be regulated by Energy Star. Application specifics should be up to the consumer.

Electrical Performance Requirements

Safety, power factor (.7), operating frequency, start time, run-up time, electromagnetic and RF interference, transient protection, and noise requirements are all sufficient for the LED products. I cannot comment on the CFL requirements / modifications.

Dimming

Removing low voltage lamps (MR 16s) from the Energy Star spec will eliminate many of the existing dimming complications. Past problems typically had to do with dimmer-transformer-lamp compatibility. We support continued research and mutual

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information gathering from both the LED community and the lighting controls manufacturers.

Lamp Toxins Reduction

We support EU RoHS as a standard requirement

Dimensional Requirements

ANSI standard shape / size dimensions and tolerances are sufficient

Lamp Labeling & Packaging Requirements

Lamp Labeling

We have stressed the importance of consumer education when commenting on several articles in Draft 1, as we feel that is a key to mass market adoption. However, we do not believe it is feasible to include all of the proposed information on the lamp itself. What would be sufficient is:

- Brand name
- Model number
- “lm”
- “W”
- Dimmable
- CCT

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Most customers who are utilizing energy efficient lighting technology will be able to find contact info and application restrictions through packaging, website, or local big box support.

Packaging

Packaging requirements are acceptable.

Color Spectrum

We believe that the black and white “FTC Label” CCT scale is sufficient. With the general consumer, there will be a learning curve that is inevitable. The increased cost of the multicolor packaging will not accelerate the adoption of new technology.