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Alex Baker
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Re: ENERGY STAR Lamps V1.0 First Draft Comments

Dear Mr. Baker:

We appreciate the opportunity to comment on the ENERGY STAR Lamps V1.0 First Draft. The following represents Switch Lighting's comments in response to October 2011 Energy Star Program Requirements Product Specification for Lamps: Eligibility Criteria Version 1.0, Draft 1 ("Draft").

Background

Switch Lighting™ is dedicated to innovative design and technologies that create cost-effective light-emitting diode ("LED") lighting solutions for consumers and businesses, replacing ordinary incandescent and compact fluorescent lamps ("CFL") with extremely long lasting, reliable, energy-efficient solutions.

The company's high-performance products are designed to contribute to human and planetary health with their efficiencies and reclaimable components. Using their unique cooling technology, SWITCH Lighting is the first to announce a full line of A19 incandescent replacement bulbs to the residential, commercial, and hospitality markets. Switch Lighting is backed by VantagePoint Capital Partners and endorsed by Cradle to Cradle writer and sustainability expert Bill McDonough. The company is privately held (incorporated as Switch Bulb Company, Inc.) and headquartered in San Jose, California.

Comments

Light Output Requirements

Watt equivalencies provide consumers with a valuable knowledge baseline needed to bridge technologies from standard incandescent lamps to energy efficient lamps. Lumen output is the best measurement to correlate with nominal power, but it alone cannot capture the congruence of new LED replacement lamps to their incandescent counterparts. Because other factors (e.g. color, power factor, etc.) in concert with lumen output ultimately characterize the light that lamps produce, manufacturers should have some level of lumen output fluidity to determine the Watt equivalency for a given lamp model. The Integral LED Lamps ("ILL") criteria does so by only listing a single Minimum Light Output figure, but by putting an upper limit on the range of the Minimum Light Output, the Draft limits manufacturers' flexibility in assigning Watt equivalencies its lamps. We recommend deleting the upper range of the Minimum Light Output in the Draft in favor of a simple minimum lumen figure, as in the ILL criteria.

Correlated Color Temperature (CCT) Requirements

Conversely, more clarity is needed within the Draft's CCT requirements. A range, rather than a single figure, for each nominal CCT would provide the lamp consumer with consistent light quality while providing manufacturers ample and appropriate flexibility to control compliance costs.

Color Maintenance Requirements

By shrinking the allowable change in chromaticity from an initial measure to any other measurement point during the first 6,000 hours of lamp operation from 0.007 on the CIE 1976 u'v' diagram in the ILL to 0.004 in the Draft, the Draft significantly increases the difficulty for qualification and subsequent cost to comply. The severe 43% constriction will invariably increase manufacturing costs for lamps, potentially raising the price point for consumers. Further, limiting LEDs to 4-step color maintenance, while CFLs continue to avoid any color maintenance requirements, represents another instance of technology bias in favor of CFLs and detracts from the Draft's goals of technology neutrality.

Lumen Maintenance Requirements

We recommend Energy Star abandon its proposal to lower the minimum allowable lumen maintenance life requirements from 25,000 to 10,000 hours. Energy Star officials have stated the main reason for this is to provide a catalyst to bring LED costs down. We worry, however, that by shifting the solid state lighting paradigm to drastically reduce life expectancy (and LED inputs), while at the same time increasing the stringency of certification standards such as color maintenance and rapid cycling, will not give manufacturers the flexibility Energy Star envisions to lower costs. The price of LED lamps is falling every day as the result of innovation and market forces – not a race to the bottom for subpar components.

Standard vs. Non-Standard Shape

It is our recommendation that the new Draft remove the non-standard specification across all technologies. EPA has the ability to remove this less accountable category and ensure that products receiving the Energy Star label meet the highest possible standards, ensuring product integrity and consumer confidence.

Luminous Efficacy Requirements

The increase of the minimum lm/W from 55 to 60 lm/W places an unnecessary burden on cutting-edge higher wattage equivalency lamps that are getting closer to market. This change will have the consequence of driving up the cost of lamps due to shortage of LEDs on the market that will allow for these efficacies. In addition, since the efficacy of the most desirable North American CCT, around 2700K, is 30 to 40% lower than LED efficacy at 4000K, puts an addition burden and unnecessary cost for the lamps with the most demand. This will only serve to slow the adoption rate of LED lamps in the US.

Power Factor Requirements

We support increasing the power factor of all lamps from 0.7, as specified in the Draft, to 0.9. Energy Star must strive for the highest energy efficiency possible. While a higher power factor only marginally saves consumers money by decreasing plug load demand, at utility scale, the gained efficiency has the potential to be monumental. Utilities are vital allies of the energy efficient lighting market through their ability to drive rebates that bring down the price of lamps and incentivize consumers to commit to new technologies.

Run-Up Time Requirements

The phrase “full stabilized light output,” needs to be defined in the Draft. LED lamps fundamentally take longer to stabilize, however they are much brighter before stabilization than CFLs. Manufacturers need guidance on this aspect, and we recommend EPA consider refining this point in the Draft to state “fully stabilized light output” at or exceeding the lamp’s listed lumen output.

Rapid Cycling

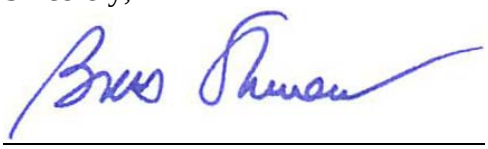
The requirements under the new specification do not align with the early interim qualification at 3,000 hours under the lumen maintenance requirements. We recommend that the new Draft require 1 cycle for every two hours of lamp life.

Lamp Packaging Requirements: Warranty

We recommend that qualifying lamps continue to be backed by a minimum 3 year warranty, as stated in the ILL criteria, rather than lowering it to 2 years as specified in the Draft. Energy efficient lighting is an investment for consumers. While the price point for these new technologies is still greater than traditional lamps, we want to ensure the technology lasts in order to allow consumers the ability to recoup their costs in energy savings as well as enjoy LED technology for years following. A strong warranty builds consumer trust in all energy efficient lighting products.

Thank you for your consideration.

Sincerely,



Brett Sharenow, CFO & CSO