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To: Richard H. Karney, P.E.
ENERGY STAR Product Manager
US Department of Energy

Re: 04/09/2007 Draft ENERGY STAR® Program Requirements for Solid-State Lighting Luminaires

Progress Lighting is pleased to see some of our concerns addressed in the latest draft specifications. We continue to have concerns in the draft specifications regarding the following areas:

1. How is a fixture manufacturer to measure luminaire efficacy?
    a. There are no recognized test procedures for luminaire efficacy as described in this document. If a true measure of luminaire efficacy is to be obtained as described, there should be much more descriptive language regarding the conditions and procedures by which such a measurement should be achieved (stabilizing time, integrating sphere requirements, etc.). The need for such a measurement is appreciated, but there should be a more established procedure by which luminaire efficacy is obtained, and that should be described here in this document. Note that most labs used by fixture manufacturers such as Progress are not equipped to perform absolute measurements; thus it will make obtaining such results difficult. Note that if a shroud or reflector is changed, these tests would have to be resubmitted. If this is the decided direction, a heat sink/light engine/diffuser/reflector platform combination should be allowed that would make the platform more easily transferable to different products and less testing required (I have noted that this is addressed in the “Product Variation” section of the standard, but there are particular issues with the diffuser portion of this allowance addressed later).

    b. The best determination of fixture efficacy available to fixture manufacturers currently is the device manufacturer’s information (which can be obtained if asked) that describes how much lumen loss the device will encounter at elevated junction temperatures. Any laboratory can measure the solder points (and therefore interpolate the junction temperatures using the device manufacturer’s thermal resistance data), which in turn can allow us to determine the lumen output based on the device manufacturer’s provided data. Using the measured power, we can therefore determine our system efficacy at the light engine level. Going beyond this level (to include the reflectors, shroud, etc) is a much more difficult lumen calculation that requires extraordinary equipment. It is our feeling that due to these facts, it is much more prudent at this time to allow the LPW to be taken only at the light engine level until a more proper LPW calculation is more readily attainable and described.

    c. As the device manufactures have already done much of the work involving integrating spheres when the devices are manufactured, and the fixture manufacturers know which

devices we are purchasing, it would make it much easier on the fixture manufactures to utilize a temperature-measurement approach to LPW.

2. We are not in agreement with the general direction to separate the commercial requirements from the residential requirements. When a fixture is sold, there is no label or marketing approach that generally designates it as a “commercial’ fixture. Many residential fixtures are used for commercial purposes and vice versa. The only restriction is the use of a FCC class A power device (for electromagnetic interference) for a residential application. However, we have found no known cases in recent history where this requirement has been actually enforced. There are many such devices that end up in residential applications. With regards to power factor, the 0.7 should be a sufficient number for both residential and commercial applications for the near term, with 0.9 remaining a desired target in a few years. What reason would we ever have as a manufacturer to make a product to adhere with the commercial standards when any residential product will be accepted on a commercial job? Is there going to be a label that says ENERGY STAR commercial? Trying to explain to a customer that the RLF fixture standards and the SSL fixture standards are different will be confusing enough, but throw into that equation the potential need to address the different types of SSL standards for commercial vs. residential, and things become quite confusing.
3. What is the difference between the definition of undercabinet shelf-mounted and standard undercabinet lighting (this is unclear)?
4. Minimum light output for the <= 4” size is a bit high at 300 lumens initial. Currently, for warm white, this would require over 4 high output LED’s which would require a hefty heat sink in a very small aperture.
5. In general, we are not in agreement with the zonal lumen requirements. The zonal lumen requirements are not necessary and will generally be standard good practice in any desirable fixture design. While it is understood that the standard is trying to establish a quality parameter, the standard should not overly impose to fixture manufacturers what constitutes a proper fixture design with regards to light beam patterns.
6. Regarding allowable product: It is stated in the standard that diffuser changes are allowed as they may not materially affect LED performance. The diffusers could certainly have an impact on performance of the devices as they can increase heat near the device and significantly reduce LPW using the standard’s described LPW calculation method. It is not understood why such a change would be allowed.
7. The quality assurance testing process along with the de-listing, re-listing, and probationary processes should be further explained and documented in greater detail. A product should not be de-listed after a single failure as described in the standard. Rather, at least two products should be tested by different laboratories before it is immediately de-listed.

Thank you for considering our input.

Regards,

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