May 15, 2007

Dear Mr. Richard Karney, DOE

Re: Response to ENERGY STAR Criteria for SSL luminaires

I looked through the 2nd draft of ENERGY STAR specification, and found it much improved from last version, and I have no comments on this draft, except one request.   My request is concerning color communication. I understand that DOE takes color communication as an important issue, as one of the lessons learned from CFLs, and removed flexible color, etc. Also, nominal CCTs are limited for each product category, e.g., 2700 K, 3000 K, and 3500 K for under cabinet kitchen lights. These are all good and I agree with these specifications. But, I do not see any requirement that CCT of the product be shown on the product package. 2700 K and 3500 K are big difference, for example. Other products will have even larger range, 2700 K to 5000 K.   I have seen many CFLs that did not show any information of CCT, or often, only "cool" or "warm". In other cases, the value of CCT was printed on the base of CFLs but could not be read from outside the plastic package. I have a strong concern that the same problem as CFLs will be repeated for SSL products if the product's light color is not communicated to consumers, especially residential products. The problem may be worse for SSL products, as it is expected that early products tend to have higher CCTs due to cost and availability of current white LED products. I believe it is critical that light color of products be displayed on the product package so that consumers would know the differences in light color. I wonder if ENERGY STAR can make a basic requirement for displaying information of CCT (together with value of lumen) on the product or product package. Detailed method can be left to NEMA or other organization that are appropriate for standardizing product labels.   I think it would be sufficient to include a simple statement in
ENERGY STAR specification somewhere saying "The value of CCT or alternative information to indicate the CCT of the product shall be printed on the product package."

We often discussed this in ANSI C78.377A working group. In one of previous drafts, we had color names for each of 8 CCTs (incandescent white, warm white, cool white, sun white, etc.) intended for color communication for general consumers who do not understand CCT value. These names were eventually removed in the final draft, as members thought it might not work well for various reasons. But we all agreed that color communication was crucial for SSL to succeed. You may also know about an effort in NEMA to develop standardized labeling for color communication of CFLs. I have proposed a similar effort for SSL products in the C78.377 WG when Flexible Color was introduced. Since we learned that the 4-digit number of CCT does not work for general consumers, and SSL products can have any CCT, 100 K step, in the given range (Flexible Color), I proposed a color label as shown in the file attached. I have heard good responses to this from many people, but no action has been taken. This is only an example, and it can be in some other design. I really believe such a way of color communication is badly needed for all lighting products, and will be one of key points for SSL products to be well accepted in the market.

Regards,

Yoshi Ohno