

July 30, 2009

Richard Karney
Energy Star Products Manager
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Subject: Comments relating to Proposed Category A Additions – Outdoor Area & Parking Garage – Dated July 1, 2009

Dear Mr. Karney:

In response to your draft proposal for category A additions for outdoor area and parking garage luminaires Lighting Science would like to submit the following comments:

1. With regards to the proposed Fitted Target Efficacy (FTE) has the model been verified or validated by independent sources like the LRC or the IES? The LRC has developed their LSAE metric, which is based on a specific site or application, of which your FTE model is very similar. The FTE metric being product based can penalize or reward products that are well suited for one application but ill suited for a different application. The FTE model should have a two level approach, one metric for roadway lighting, and one model for site lighting. The lighting design requirements are different depending on the application.
2. For roadway and highway lighting applications, the FTE model appears to penalize the lumens that are distributed behind the luminaire. In many designs a distribution pattern that illuminates the curb, the shoulder area, pedestrian walkways or the surrounding space is critical for off axis visibility, the ability to see and react to deer or other animals, and for vehicular and pedestrian conflict.
3. The use of zonal lumens for glare and uplight metrics following the TM15 BUG zones is a good idea. In your summary you referred that these limits are consistent with the BUG ratings referenced in the draft MLO document. The values provided represent either a G4 or a U4 rating in most instances. The current MLO is developed for site and area lighting only. It does not cover public highways. Thus, consideration should be made for separate maximum

luminous flux for roadway and for site and area lighting. Caution should also be used in utilizing draft recommendations from the MLO since it has not yet been approved for implementation.

4. With regards to the parking garage/canopy luminaire proposal of a minimum 20% of total zonal lumens in the 60-70 degree zone. As verified in the TM15 BUG rating work, the FH zone of 60-80 degrees has been identified as a zone that can cause debilitating glare. By having a metric that establishes a minimum level, could lead to the development of products that could prove to be a glare concern with drivers. Lumens within this zone do allow you to increase the overall spacing within an installation. However, the tradeoff of increased spacing and debilitating glare should be taken into account. An upper limit should be placed on the zonal lumen density in the 60-70 degree zone.
5. With regards to CRI for outdoor luminaires. While the current eligibility criteria version 1.1 only refers to a minimum CRI of 75 for indoor luminaires, do you plan on proposing a CRI minimum for outdoor area and roadway luminaires? For consideration you may want to provide two separate ratings, one for roadway, suggest >70, one for site and area lighting parking garage canopy luminaires due the differences in need for color recognition between the applications.
6. With regards to CCT for outdoor luminaires. Are you considering establishing allowable CCTs for each of the different applications? Similar to CRI, you may want to provide separate ratings for roadway, site and area lighting, and one for parking garage canopy lighting.

Thank you for the opportunity to provide these comments.

Best regards,

David Baum
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