

**Email received on October 24, 2010 from Aaron O'Brien.**

To all,

Please review and consider the following comments.

### **Photometric Performance Requirements**

A comment in general regarding compact fluorescent and linear luminaire photometric performance, temperature negatively affects all fluorescent sources. Data regarding SSL performance often describes performance based on multiple operating temperatures. Fluorescent data is predominantly based on laboratory conditions. Amalgam lamps were the direct result of a need for lamps that perform in warmer ambient levels.

Compact fluorescent fixtures have an additional issue besides heat; operating position. If a lamp is not operated in the laboratory test position, the performance can be negatively affected.

Based on this information, all fluorescent luminaire data should include lamp temperatures and the test data should take into account the final application such as a vapor tight enclosure used in 40 degree ambient. Compact fluorescent should also include operating position as well as ambient temperatures for the final application such as a recessed fixture.

This will allow for a more even playing field for SSL and CFL fixtures and the use of an amalgam lamp when needed.

### **Solid State Option 2: Luminaire or LED Light Engine Performance**

Luminaire shall be operated continuously in accordance with ANSI/UL 1598-2008, **UL 2108** or UL 153-2002 during the interim 6,000 hours; any deviations from this shall be reported.

Also, LED light engines shall be operated continuously *in situ* during the interim 6,000 hours. During initial and final LM-xx measurements, Tb temperature shall be controlled to match Tb temperature measured when LED light engine is operated *in situ*.

### **Light Source Life Requirements: All Luminaires**

Laboratory test results shall be produced using the specific lamp that will operate in the luminaire and either the ballast that will operate in the luminaire or a commercially-available ballast that meets the applicable ANSI ballast requirements, if applicable, for the light source being tested.

**Ambient temperatures internal to the final application must be considered for this data. Life test data with higher ambient such as SSL requirements must be a part of this requirement.**

## **Lumen Maintenance Requirements: Directional and Non-Directional Luminaires**

Laboratory test results shall be produced using the specific lamp that will operate in the luminaire and either the ballast that will operate in the luminaire or a commercially available ballast that meets the applicable ANSI ballast requirements, if applicable, for the light source being tested.

Ambient temperatures internal to the final application must be considered for this data. Life test data with higher ambient such as SSL requirements must be a part of this requirement.

If the lumen maintenance of a CFL falls below 70% before catastrophic failure, will that be considered the end of its useful life? Will CFL lumen maintenance be measured at higher ambient temperatures? If the data is only taken at a 25 or 30 degree ambient, can the thermal losses associated with the fixture be figured into a 70% lumen maintenance equation like L70 for SSL?

Evaluation of fluorescent sources must be take into temperature and operating position to make a fair comparison to an SSL which has data for multiple temperatures. The SSL is not affected by operating position.

## **Correlated Color Temperature (CCT) Requirements: All Indoor Luminaires**

The CCT of a fluorescent lamp is affected by operating temperatures within the luminaire. If the requirement for SSL is to include relevant temperature measurements, then fluorescent fixtures shall also be tested to the same requirements. Maybe fluorescent lamp manufacturers may not perform these tests currently, but this data is needed to make direct comparisons to other high efficiency lighting.

## **Color Maintenance Requirements: Solid State Indoor Luminaires Only**

This is valid only if the color shift falls outside the 7 step ellipse as defined earlier in the document.

Thank you for the opportunity to participate,

Aaron O'Brien  
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Pure Lighting  
Edge Lighting