From: benjamin.chen [mailto:benjamin.chen@ledion-lighting.com]
Sent: Thursday, February 05, 2009 7:42 AM
To: richard.karney@ee.doe.gov; SSL
Subject: Comment on Energy Star Integral Lamp Standardization

Dear Mr. Karney,

Energy Star's effort in standardizing SSL products has been widely recognized and appreciated. As a LED retrofit and downlight manufacturer, we at Ledion Lighting would like comment on some development of the SSL integral lamp standard such as dimming spec. and reliability criteria.

1. Dimming

*In case there is NO external dimmer present, we suggest to include designs with STEP dimming concept (meaning: the LED input current is controlled/dimmed via ON/OFF switch within a short timing, ie. <1.5 seconds)

*Proposed Level of step dimming (4-steps):
*ie. 100%-65%-35%-10%
*ie. 100%-75%-50%-25%

Factors for step dimming:
*Defining accuracy of dimmed current (within ±5% of rated current)
*ie. 100% --> 1,000mA±5%
*ie. 75% --> 750mA±5%...etc.
*Defining color maintenance at dimmed current
*Defining power consumption at dimmed level, to make sure that dimmed light is energy efficient
*Defining luminous efficacy at dimmed level

2. Reliability testing

*All SSL products would require time to reach thermal equilibrium, depending on the capabilities of heat sink, the question is how long?
*Pre-burn in for 24hours @ Ta=25C
*Defining an acceptable range of performance variation in LUMEN, CCT (x,y)? (% variance between initial vs. 24hour later)

*Lamps are usually installed within an enclosed IC-type fixture where almost no free air convection/circulation, reliability testing should define an enclosed space (cabinet with defined dimension and material) for each type of lamp (A, G, P, PS, MR, PAR…etc.)

Ledion Lighting
Benjamin Chen