

-----Original Message-----

From: david [<mailto:ds@ledconsultants.co.uk>]

Sent: Thursday, June 25, 2009 5:06 AM

To: 'Derek Greenauer'

Cc: Karney, Richard

Subject: FW: Jan 16th Request for comments

Please can you confirm receipt of this email?

Hi Derek,

Below are my Responses to the Energy Star draft.

DIMMING :

First, regarding dimming. Most of what I need to say is also stated in the article under the section dimming

<http://www.ledsmagazine.com/features/6/5/8>

I can understand why you have the suggestion of a manufacturers compatibility list for dimmers on a web site. I did this once with an LED product as it was the only answer I had. It was a disaster as people for cosmetic reasons did not want to change their dimmer to a new type as this would be a different style and conflict with the style already set throughout the house. This same problem was found by the M&A contractors who had chosen a brand to install and as such did not want a different style just for the dimmers on new installations. I opened up a can of worms and no one thanked me for it.

Also, I found consumer thinking to be, they do not have this issue at the moment with filament light bulbs and as such do not expect it with any other dimmable lamp source. CFL are not used prolifically with dimmers in living areas to see the problem and LED are set to be 100% of lamp usage with a quicker uptake in dimmable areas than CFL. It was explained to me that consumers never log on to a manufacturers web site to see what dimmer a light bulb is compatible with and I am certain you will not find anyone that has.

It is my belief that technically there is no reason to have anything less than 100% compatibility and if you set a bar based on 100% compatibility, you will encourage the design, development and uptake of these technologies. If you set a bar saying just list what you can be compatible with, where is the goal for performance?

Further, you will be causing large and unnecessary wastage of perfectly good dimmers and also technical conflict between lamp manufactures and

dimmer manufactures. Why should the consumer and environment suffer this not to mention the large increase in cost of a compatible dimmer that may have to be FET based.

POWER FACTOR :

In Regards to power factor. again see the article <http://www.ledsmagazine.com/features/6/5/8> section on power factor and also look at the web site <http://www.led.im/index.php/power-factor.html>

In short, you should have a minimum of $> 0.9PF$ no matter the type, class, power etc. This again is to create the goal driven target.

SIZE:

Again refer to the article in section size <http://www.ledsmagazine.com/features/6/5/8>.

I have attached the independent report which looks into the dimming issue.

Lamps used in electrical tests comparison to RAIS were the dimmable GLS 7W Master LED.

Lamp used in size comparison to RAIS were the GU10 7W Master LED which was not dimmable

Summery.

Clearly the targets for both > 0.9 power factor and 100% dimmer compatibility would be ideal but I understand you can not show a preference to one manufacture. However, it is my belief that these technologies are available now and if not will become widespread. It is in your interest to encourage these technologies to come forward. As such, can I suggest as a minimum you add a comment line in your standard as the Energy Saving Trust made in their standard for power factor?

"Consider raising the Power factor in all classes to equal that in class 2 (>0.9), once it can be demonstrated that the market and technology allows it."

Note class 2 is a lamp with integral driver\ballast.

And for dimmability:

"once it can be demonstrated that the market and technology allows, consider compatibility with a broad range of dimmers (selected by Energy Star) which the product must work with, if it is to be marked as dimmable, .

These dimmers should include dimmers :

Leading Edge Slide or rotary dimmer with separate switch and switch at end of dimmer travel.

Leading Edge Slide or rotary dimmer with switch at end of dimmer travel.

Leading edge pushbutton dimmers

Trailing-edge MOSFET dimmers.

I would suggest finding two different travel limits of each one making a total of 8 dimmer types where possible which should cover the market.

"work" needs to be in the same vane as an ordinary light bulb, not all dimmers turn a filament lamp 100% off from the slider and this is accepted in the market. You use the switch on the dimmer for this and LEDs will be the same. However, they should all dim and dim without strobing or flicker.

In terms of wattage, to avoid dumping power, I found that 6W at 110V of LED could load a dimmer if the power supply is correctly designed.

Kind Regards

David