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October 14,

2002
ICF Consulting
1850 K St. NW, Suite 1000
Washington, DC, 20006

Subj: Energy Star Specification
ATTN: Ms. Darcy Hoffmeyer

Dear Ms. Hoffmeyer,

A few comments regarding the draft specification:

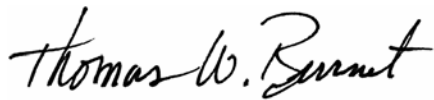
1. There is a direct relationship between LED luminance life and input energy (see the graph I passed out at the UL-STP meeting). An arbitrary maximum of 3 watts per sign means that fewer LED's will be provided to achieve required luminance levels. Therefore, the per lamp LED current must be increased, and the result is reduction in luminance life. At 3 watts per sign, I would expect the minimum luminance to be reached at 2 years (or less). **At 5 watts per sign**, additional LED's can be included at lower per lamp current and lamp life should increase to well over 10 years. A maximum input measurement of 3 watts is not achievable today without seriously compromising life, and the minimum luminance requirement cannot be honestly warranted for the required 5 years.
2. Power factor: Should have limits regardless of lead/lag. **Suggest .7 lag to .4 lead** will encompass efficient designs of reasonable efficacy. V/A ratings of 20 or above are simply poor designs and should not be considered as premium Energy Star products.

Regarding photoluminescent comments:

1. **UL924 is not a "Nationally Recognized Standard"**. The 6th edition lost ANSI status for being out of date. The current 8th edition is filled with convoluted and contradictory language, and has continuously failed to achieve the required ballots in a canvass vote. UL has agreed to a complete rewrite, or 9th edition. Also, we note several comments regarding UL924 becoming the CSA Standard. That is not only untrue, but it is not even under consideration.
2. A PL sign is not a stand-alone product. It must be continuously illuminated by an undefined (and unprovided) source of illumination to a minimum (required) marked level. That "supplied by others" fixture consumes watts. The lobbyists for PL fail to mention that a minimum luminance level striking a PL sign is required to be part of a PL sign

installation. It has been continually noted that the areas above doorways are not deliberately illuminated. UL verified this at an IAC meeting at their RTP Laboratory facility. The incidental luminance measurements are usually in the range of one foot-candle (or less). A PL sign coupled with a twenty-five to fifty watt (charging) source of illumination in order to provide the required level of charging luminance far exceeds the Energy Star requirement. **Further, the result of that 25-50 watt per sign power investment results in a sign that provides 1/2000th of the luminance level required by Energy Star Exits.** I congratulate all involved who understand this issue. As long as the Energy Star label means high performance and low energy consumption, count us in!

Sincerely,

A handwritten signature in black ink that reads "Thomas W. Burnet". The script is fluid and cursive, with the first name "Thomas" being the most prominent.

Thomas W. Burnet

CC: Andrew Fanara – EPA
NEMA Lighting Section members
Dr. Belinda Collins – NIST
Dr. Peter Boyce - LRC