

Hi David,

It seems something blocked ISA email. The comments as below had been sent on Oct 18th.

1. It would be much better to have a glossary of acronyms to explain the full name of all abbreviations in the report for an easy track for the readers.
2. In Table 4 of Page 28, the proposal of lumen efficacy levels should be accompanied with the requirements of color index (for instance $R_a \geq 80$). Practically for a LED, the lumen efficacy can be increased with the reduction of its R_a value. But reaching a high level of lumen efficacy should not be accomplished on the basis of a huge sacrifice of the color properties.
3. In Figure 7 of Page 56, the color of curves in the legend should be re-adjusted to fit those in the plot area.
4. In Page 59, "These exponential curves are the result of the quantum physics of p-n junctions (which is the basis of an LED)..." actually, the degradation mechanism of LEDs is quite complicated. These exponential curves are results of not only quantum physics of p-n junctions, but also degradation of phosphors and encapsulant materials.
5. in Pages 60 and 61, to extrapolate the L70 lifetime, the first 1000 hours were usually removed from the curve fitting calculation, because these data are very likely to be disordered by LED seasoning effect (which has been discussed in IES TM21 and TM28 reports).
6. It is suggested to add a new attachment to regulate the color coordinate testing, and propose adequate requirements on color consistency and color shift of the LED lamps.

Regards,

Crane

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