

SSL DOs and Don'ts

WHAT TO LOOK OUT FOR IN SSL FIXTURES



Avi Mor



Jim Anderson

10 Tips on Specifying SSL Lighting

Avi Mor, a partner at Lightswitch Architectural, and Jim Anderson, director of strategic marketing and innovation at Philips Color Kinetics offer 10 tips for specifying SSL lighting from their more than 50 combined years in the industry:

1. SSL systems are not 100% efficient. Normal system includes a power supply, an LED and optics. Often the LED, itself, is likely not the device limiting efficiency, so test your entire SSL system.
2. Are all parts, including luminaire, driver, driver enclosure, dimming interface, LEDs, and any other products, covered by manufacturer's warranty? Make sure before you specify.
3. Check the LM-79 testing report for any luminaire you specify. Remember LM-80 is not a predictive standard and prescribes testing methodology only, so an LM-79 testing report, which actually measures light output, is necessary for every LED you specify.
4. Manufacturing improvements have reduced intra-LED wafer variation but binning—the process of sorting LEDs into bins based on wavelength, light output and forward voltage—is still a big issue. Not all 3000K LEDs are the same 3000K, as with all lamps.
5. Thoroughly heat test all luminaires and provide test reports to your clients.
6. When dealing with photometric performance for large installations, it's not the system lumens that matter, it's where you put the light. Illuminance, effects, and contrast matter. When using color, see what it will look like first, mock it up!
7. For photometric performance, always check

the useful lumens, illuminance—foot candles on the surface to be illuminated—and/or their effect.

8. To minimize bin variation in light quality use: only one LED bin, use many bins with binning algorithms in both their packages and fixtures, use optical treatments to reduce variation, or calibrate your fixtures to produce the required bin (intensity only).
9. Before specifying, make sure the manufacturer defines and validates the lifetime of their SSL products. Ask for luminaire or lamp lumen maintenance recommendations and at what ambient temperature the maintenance recommendations were tested.
10. Know the end of life policy of the products you specify. Will replacements match and how long will they be available? ■

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State of SSL

BE WARY OF HYPE, BUT GOOD PRODUCTS ARE OUT THERE

Straight Talk About Indoor LED Luminaires

Terry Clark, CEO of Fremont, Calif.-based Finelite, said that while it is still difficult to get LED luminaires right, much of the noise in the market is drowning out the fact that good work is being done to address key issues and that LED technology is ready for some important applications.

"We are trying to cut 10 years off the normal product introduction cycle," he said. "No one has time for qualifiers, venture capitalist funding is changing the dynamics as we go along and early adopters are getting burned."

Clark said LED manufacturers and marketers need to tone down the hype surrounding their products and not overpromise. He cited the U.S. Air Force's April ban on LEDs largely

because of overpromised energy efficiency ratings as an example of how hype can hurt. Clark said that the preponderance of different technologies that must work together to provide quality, efficient LED lighting is more involved than the simple luminaire, LED, optics equation many tout. Sealants, manufacturing processes, electrical components and drivers all can cause premature failure.

Clark said the LM-79 luminaire measurement standard, the LM-80 data test collection and format set, and Energy Star's lighting facts label are good starting points for standards, but noted there is still no standard for how to relate LM-80 data to lumen depreciation for an LED as LEDs don't go out as compact fluorescent and

incandescent bulbs do but rather, lose lumens. He also said the industry needs standards for how to relate LED lumen maintenance to luminaire lumen maintenance, how to measure color quality, how to measure color shift over time, and how to enforce damages for the outrageous claims and hype seen in the market today.

Clark said that the best application Finelite is using LEDs for today is task lighting as LED task luminaires provide the right amount of light exactly where it's needed and are an improvement over fluorescent task luminaires that simply create too much light, too much glare, use too much energy, and are the wrong shape (fat and long instead of small like LED luminaires) for task lighting. ■



Terry Clark