



Are LED retrofits that work with existing ballasts a good idea?

My answer is that I'm not so sure it's a good idea, but I fully expect broader availability of LED-based tubes and lamps that work with existing fluorescent or high-intensity discharge (HID) ballasts. Line-powered LED replacement lamps including A-lamps will be the most broadly installed solid-state lighting (SSL) products in the near term — despite the fact that lighting experts will tell you that integral luminaires are superior in terms of aesthetics, light quality, efficiency, and reliability. Lamps or tubes that work with an installed ballast are compromised to a greater degree in terms of reliability and efficiency.

What prompted this column, you ask? Recent product announcements confirm a trend toward the concept. Lunera Lighting has announced LED lamps designed to work with compact fluorescent and metal-halide ballasts (p. 16). Cree recently announced LED tubes that work with existing ballasts, following similar announcements from others including Philips lighting and Luxul Technology (<http://bit.ly/Sx5Wl0>).

The allure of a ready market is just too much of an enticement for SSL manufacturers. Plug-and-play LED lamps enable facility managers to gradually transition to LED technology by simply stocking LED lamps or tubes rather than legacy products. The LED replacements will pay off through energy savings and longer life — presumably.

The LED products that work with ballasts sound at first like a win-win situation. And I won't suggest that the idea of installing such a product is a terrible decision. In some cases, it may be a good decision and for some organizations the only path toward SSL, given the cost of comprehensive building retrofits.

Still, building managers and owners or businesses that buy the LED replacements need to understand the full consequences

of the choice. The existing ballast does represent an additional point of failure. Proponents of the technology will tell you that state-of-the-art ballasts will last virtually as long as LED lamps, especially since the ballasts operate at far lower temperatures while supplying a lesser power load to LED lamps.

But what are the chances that the fixture, into which you install a new replacement lamp or tube, also has a state-of-the-art ballast? I'd say near zero. Had facility management upgraded a building's fluorescent lighting recently, for instance, they wouldn't already be considering an LED tube or lamp. More likely that existing ballast is five, ten, or fifteen years old, perhaps nearing end of life.

There are other issues with such retrofits as well. Some existing ballasts have a noticeable hum. Fluorescent tube fixtures may have older, brittle sockets that may not safely restrain a heavier LED tube. Indeed, companies that in the past have questioned the safety of ballast-compatible tubes are now selling the technology, so discerning what is reliable and safe is not straightforward. My guess is that companies such as Philips and Cree have done their due diligence and there won't be huge issues with the replacements.

The subject is worthy of further investigation. We will have a deeper feature for you in the next issue of the magazine. Meanwhile, as this issue goes to press, we are preparing for Lightfair International. Given the destination in Las Vegas, I'm betting that we see even more replacement products that work with existing ballasts on the exhibit floor. Better than one billion installed fluorescent sockets in the US alone offers strong odds for success.

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