

# keeping technology straight.

by Michael Lane LC



Above: even though T12 and T8 lamps fit in the same sockets, mixing them up can have bad results. Photo courtesy Philips Lighting.

So you've upgraded to T8 lamps and electronic ballasts, life is good right? Until one day you find that there are 34 watt T12 lamps in the T8 fixtures and you wonder, is this a problem? We got that question not to long ago, unfortunately we get that question more often than you may think.

To find out what happens to the watts and light output we ran the 34 watt T12 lamp on a T8 instant start electronic ballast and found that the system used 41.5

watts. Wow, that's great energy savings compared to the T8 lamps on the same ballast at 58.5 watts! But, the light output tells more of the story. The T12 produced 284 footcandles while the T8 produced 457 footcandles, a 29% reduction in energy with a 38% reduction in light levels.

What isn't told by these numbers is what detrimental effects running the T12 lamp on the T8 electronic ballast will have over time. We know that the T12 lamp is a 430 ma lamp while the T8 lamp is a 265 ma lamp. So running a 430 ma lamp on a 265 ma ballast will under drive the T12 lamp by approximately 38% (our test showed a 43% reduction in watts and 35% in light output from the normal output of the T12 on a EE mag ballast - see chart below).

We know that the T12 lamp is a Rapid Start lamp while the majority of T8 ballasts are In-

stant Start. According to one of the lamp manufacturers - "the lamps are not getting enough current to warm the cathode (Rapid Start operation), so each time the lamp is fired, the emissive paste is impacted (sputters or is blasted off the cathode), ultimately losing all of the paste prematurely." Sounds like short lamp life!

The moral of the story is: don't use T12 lamps on T8 ballasts. Inform your maintenance staff never to put T12 lamps in the T8 fixtures. Just because you have a stock of T12 lamps doesn't mean you should use them. Be smart, only use T8 lamps on T8 ballasts.

The footcandle numbers were measured in our integrating tube - see our Spring 2005 LDL Newsletter for more details.

Lamp	Ballast	Watts	Light Output
34WT12	EE Mag	73.2	440
34WT12	T8 Electronic IS	41.5	284
32WT8/735	T8 Electronic IS	58.5	457

## new solar led lights invading region.



Above: solar lighting marine light Photo courtesy Carmanah.

Metro bus shelters in Seattle are going solar. Carmanah Technologies, a Victoria, B.C., company, just got a contract to provide up to \$400,000 in solar-powered LED systems to light some shelters in the next two years. The solar powered lights require 90 percent less energy than conventional incandescent bulbs and can operate up to 100,000 hours before replacement, the company says. No digging or permits are required for installation. The company describes cloudy Seattle as a "challenging" place for solar lighting but says it is confident the

system will work.

Other PV powered LED lighting systems have been installed in other transit systems in the region, including Portland and Amtrak. At least one regional airport has investigated solar lighting for its runways. PV/diode systems have been used for years in tunnels in the Cascades.

Mike Nelson, Director of the WSU Northwest Solar Center will present more details on the solar lighting that has been installed and is planned for our region. See our Events pages for more details.