



Shop Tech Talk March 2011



Saving Money by Upgrading Fluorescent Fixtures

First let's look at the physical differences between the old T12 tube and the newer T8 tube. Simply put both tubes are available in the same 4 foot and 8 foot lengths and both have the same socket at each end but the diameter of the T8 is 1" (8/8) and the diameter of the T12 is 1.5" (12/8). The T designation simply shows that the fluorescent bulb is a tube type.

Ballasts

The T12 bulbs operate using a magnetic ballast and the T8 bulbs use an electronic ballast.

The T8 electronic ballast is more energy efficient than the T12 magnetic type.

The T8 electronic ballast uses high frequency, solid state circuitry to operate and it does not make a loud humming sound or cause light flickering, commonly found with the T12 magnetic ballast.

T12 tubes on a T8 ballast will shorten the lifespan of the ballast

T8 tubes on a T12 ballast will shorten the lifespan of the tubes

Electricity Consumption

According to the "Philips Lighting Guide to Fluorescent Lamps" for comparable 48 inch lamps, a T8 produces 2600 design lumens versus a T12's 2520 lumens. However, the T8 does this using 32 watts versus the T12's 40 watts, a 20% saving

So even though the T8 won't necessarily increase your lighting it will lower your electricity bill!

Light Depreciation

All fluorescent bulbs dim as they get older.

The rated lumen depreciation of T12 fluorescents is about 10 percent after 3,000-4,000 hours of operation and 20 percent after 7,000 hours.

For T8 lamps, running off electronic ballasts, the loss is even slower, 10% total after about 7,000 hours of use. That's a two-year period if the lights are on 10 hours a day.

All fluorescents have a "burn-in" period, during which they are much brighter. This burn-in period isn't exact, but their lumens decrease at a high rate for a short time, and then settle in to a steady, lower rate.

So the bottom line is that the upgrade to T8 will save you electricity and your bulbs will stay brighter, longer.

There can be Government and State grants to help you pay for the upgrade. Also, free lighting surveys of your plant's needs are available. To navigate these waters and make you a pain-free presentation and recommendation, I can recommend Rick Edwards at Rick Edwards Electric, here in Henderson, 252-438-4856. He will measure your lighting effectiveness now and make a spreadsheet of his recommendations and offer suggestions as to the best way to proceed, all at no charge. Now that's service.

Energy Efficient Lighting Manufacturers in our area

In Burlington,NC

<http://www.atlaselectric.com/about.asp>

In Henderson,NC

<http://www.optimumlighting.com/>

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