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A Short Guide to Lamp & Ballast Disposal

The most efficacious lamps in use today are fluorescent and high intensity discharge (HID) lamps that contain small amounts of mercury (measured in milligrams) necessary for efficient light generation. Because of the mercury content, the United States Environmental Protection Agency (EPA) and individual States regulate the disposal of mercury-containing lamps. States may have more stringent regulations than the US EPA.

The disposal of lamps as solid waste is regulated under the Resource Conservation & Recovery Act (RCRA). Under RCRA, lamps are tested using the Toxic Characteristic Leaching Procedure (TCLP) to determine whether the lamp waste is:

- Subtitle C: Hazardous Waste (40 CFR Parts 261, 262) , or
- Subtitle D: Municipal & Other Non-hazardous Waste (40 CFR 258)

Since the 1990 date of lamp regulation under RCRA, GE and other lamp manufacturers have greatly reduced mercury content in lamps. GE developed Ecolux® lamps that have over 85% less mercury content than the older lamp designs. All GE Ecolux lamps pass TCLP, most have a green etch monogram, and all have the suffix "ECO" added to the Catalog Product Description. The end user may use manufacturer's data for RCRA hazardous waste determination.

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How to Overcome Organizational Resistance to the Higher First Cost of Environmental Initiatives



We are all aware that the decision made by others to use products that have a greater impact on the environment affect us all. This awareness and efforts to do less harm to the environment have organizations waving the "green" flag. But, is this enough to overcome the higher cost of environmentally conscious products?

Ultimately, overcoming resistance to higher environmental "first costs" boils down to the willingness of companies to spend more initially to curb environmental impact and pay less life cycle costs vs. paying a lower initial cost for products with higher life cycle costs. Yet, many facilities managers and staff don't look beyond first-cost numbers or understand the life-cycle cost of what they purchase for their facilities. Furthermore, they think that by having the lowest initial cost, they are providing a service to those who are paying the bills. But, they do not take into account the many other variables associated with that decision.

Even if companies have environmental initiatives and money, their dysfunctional organizational structures may impede the advancement of these very initiatives. This is mostly due to safeguards put in place to control overspending within the very departments that have the skill and expertise to make environmentally positive changes.

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Total Harmonic Distortion (THD): A Lesson for Lighting Harmony

It's got to be THD at less than 10 percent! Many lighting designers and engineers I consult with everyday are writing master specifications, which include a requirement for THD to be at or less than 10 percent. But what does Total Harmonic Distortion really mean and what is the real impact to project design and cost?

According to Wikipedia, the online encyclopedia for all things defined, "Total Harmonic Distortion of a [signal](#) is a measurement of the [harmonic distortion](#) present and is defined as the ratio of the sum of the powers of all harmonic components to the power of the [fundamental frequency](#)." Lesser THD, for example, allows the components in a loudspeaker, amplifier or microphone or other equipment to make a violin sound like a violin when played back and not a cello or simply a distorted noise.

As a musician, I typically have learned about harmonics in terms of chords, distortion and found them useful in tuning guitars at various frets across the neck of the guitar.

For those of us in the lighting and electrical world, THD refers to the Harmonic Distortion present with most electrical equipment, and more specifically now, the distortion present with electronic ballasts. THD is the measurement of the distortion created from the equipment's current draw. True resistive loads, such as an incandescent light bulb, do not have THD. Equipment containing coils and capacitors, such as motors, drives, fluorescent lighting and HID lighting, have some measure of THD.

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- GE Employees

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