

Going Green - New standards and regulations 2012-2014

Welcome to 2012, the year lighting efficiency takes center stage. From federal regulations to emerging standards affecting bulbs, lighting systems and controls, the next 12 months and beyond will present electrical contractors and their customers with change and choice.

100-watt (W) lamp - The most immediate effect is the enactment of new efficiencies for general-service incandescent lamps. The Edison bulb, as we know it, was set to begin its initial **phase-out** this month with the traditional 100-watt (W) lamp; the enforcement of this ban is effectively pushed back until **September 2012**. Last-minute Congressional wrangling over implementation of the 100W incandescent phase-out has created murkiness, but the fact is that the availability of the phased-out lamps will be limited to lesser known manufacturers and may be subject to quality and performance issues. Though consumers may still find 100W incandescent products on the market, they won't be from the big three major lamp manufacturers and other well-known companies.

75W incandescent lamps & 60 and 40W lamps - Barring further Congressional action, 75W incandescent lamps will **no longer be sold starting in 2013**, and 60 and 40W lamps will follow in **2014**. As directed in the U.S. Energy Independence and Security Act of 2007, lamps must be at least 30 percent more efficient than their predecessors. It's a mandate for manufacturers and consequently a mandated choice for consumers.

Regardless of whether the lamps are officially banned or not, the lighting manufacturers have been hard at work producing replacements for years, and more-efficient products will dominate the shelves at authorized dealers and major retailers. For instance, newer halogen--based incandescent lamps already meet the 30 percent less energy threshold. Exemptions include appliance lamps, colored lights, three-way lamps and 19 other "specialty" lights.

The U.S. Department of Energy (DOE) estimates that compliant lamps could save consumers nearly \$6 billion by 2015. Upgrading 15 inefficient incandescent lamps in the home could save an estimated \$50 per year. **Alternatives, such as compact-fluorescent lamps (CFLs), will expend approximately 75 percent less energy than incandescent, while light-emitting diodes (LEDs) have been measured to be up to 85 percent more efficient when properly installed.**

Instead of watts, start thinking of lamp brightness—how much light a lamp emits (lumen output). For example, a lamp that gives you about 1,600 lumens will provide the level of brightness of a 100W lamp and expend no more than 72W.

This year (2012), all lamp packaging must list lumen output, estimated yearly energy cost, life, light appearance (cool to warm) and energy used. It will look similar to nutritional labeling, but instead feature energy performance.

Fluorescent lighting:

The Dept. of Energy (DOE) is currently looking at efficiency standards for **general--service fluorescent lamps (GSFL)**. First up are amended and tighter conservation standards slated to go into effect in **mid-July** for manufacturers and importers.

Tubular fluorescent lighting - Affected **tubular fluorescent lighting** includes 4-foot medium bi-pin, 2-foot U-shaped, 8-foot slim line, 8-foot (high output), 4-foot miniature bi-pin (standard output), and 4-foot miniature bi-pin (high output). So what disappears?

T12 fluorescents - Though they will not be prohibited, **T12 fluorescents**, in most cases, will not meet the new standards. The ever-popular T8 and T5 lamps will.

Some fluorescent bulbs are exempted: 4-foot medium bi-pin lamps or 2-foot U-shaped lamps rated less than 28W and 8-foot high-output lamps or slim line not defined in ANSI C78. Cold temperature, impact-resistant and other special purpose lamps are excluded, as well.

Energy Star revises its lighting standards:

The U.S. Environmental Protection Agency (EPA) has made its Energy Star certification program **more stringent in 2012**.

Residential Light Fixtures RLF and V4.2 & Solid-State Lighting Luminaires SSL and V1.3 - In April 2012, Luminaires V1.1, will replace the Residential Light Fixtures (RLF, V4.2) and Solid-State Lighting Luminaires (SSL, V1.3) specifications. V1.1 updates standards for Energy Star-qualified lighting fixtures. For example, fluorescent lamps will **need to increase efficiency 30 percent** above past qualified standards. **In 2013, performance requirements will increase to 40 percent.** The DOE added, "Fixtures will continue to meet other strict performance requirements that ensure quick start-up and high quality light output as well as reduced toxics in the fixture materials."

Other federal lighting standards being considered:

Probe-start metal halide (MH) lamps - The DOE has determined it will be analyzing high-intensity discharge (HID) lamps for their energy usage. Outlined in the Federal Register, the DOE states such standards would lead to "a migration from less efficient **probe-start metal halide (MH) lamps** to more efficient pulse-start MH (PMH) lamps and high-pressure sodium (HPS) lamps." There has already been an initial comment period. Based on data gathered, the DOE estimates cumulative energy savings over a 30-year analysis period (2017–2046) of at least 11.4 quads—the equivalent to the electricity consumption of 57 million U.S. homes in one year. No immediate deadline for the standard is yet in place and, as such, the directive is "tentative."

Controls and lighting systems remain a major lighting industry response to achieve even greater efficiency gains beyond lamp advances. The DOE is considering whether federal standards of such products are necessary. Through a current request for information, the DOE is reaching out to the National Electrical Manufacturers Association (NEMA) and others. NEMA, ANSI and other standards do exist. The department says it is "evaluating whether federal test procedures for luminaires/lighting systems could be based on existing industry rating systems and test procedures such as NEMA's LE 6 rating system and EPA's Energy Star luminaire specifications." The DOE may ascertain that mandating nothing more than a standard performance label will suffice.