

## The Future is LED Lighting!

LED (**Light Emitting Diodes**) are the latest and most exciting technological advancement in the lighting industry. LEDs are small, solid light bulbs which are extremely energy efficient and long lasting. LEDs operate differently than traditional incandescent light bulbs. This makes LEDs far more rugged and durable than traditional incandescent light bulbs (the ones originally invented by Thomas Edison and their offspring are still in use today!)

LED technology also offers many additional advantages over incandescent, neon and compact



fluorescent lighting devices - such as exceptionally longer life span (**60,000 hours**), enormously lower energy usage (**90% more efficient**), reduced maintenance costs and higher safety. LEDs are currently being used for a wide variety of applications such as: residential lighting, aerospace, architectural lighting, automotive, aviation, broadcasting, electronic instrumentation, entertainment and gaming, industrial automation and controls, the military, traffic and safety & transportation.

LEDs are extremely energy efficient and consume **up to 90% less** power than incandescent bulbs. Since LEDs use only a fraction of the energy of an incandescent light bulb there is a dramatic decrease in power costs. Also, money and energy is saved in maintenance and replacement costs due to the long LED lifespan.

Because of the low power usage of LEDs, they are becoming extremely popular for light sources in remote areas that use solar panels.

Although LEDs have a higher initial cost than incandescent and compact fluorescent light bulbs, the cost is quickly recouped over time in lower electricity costs.

LEDs have a lifespan of up to 60,000 hours compared to 1,500 hours for incandescent bulbs. An LED light will last over 7 years (constant use) before needing

replacement. On average, LED

bulbs last 10 times as long as compact fluorescent bulbs, and 133 times longer than typical incandescent bulbs. Long lifespan of LEDs will dramatically reduce maintenance costs and lower long-term operating costs compared to traditional incandescent and fluorescent tubes.



**LED lifespan scenarios:**

- **50,000 hours powered 4 hours/day = 34 year lifespan**
- **50,000 hours powered 8 hours/day = 17 year lifespan**
- **50,000 hours powered 24 hours/day = 6 year lifespan**

LEDs are solid state lighting devices that utilize semiconductor material instead of a filament or neon gas. An LED light is a tiny chip encapsulated in an epoxy resin enclosure, which makes LEDs far sturdier than traditional incandescent light bulbs or fluorescent tubes. Since LEDs don't use fragile components such as glass and filaments, LEDs are able to withstand shock, vibration and extreme temperature.

**And the Wizard Says...**

Improved safety may be LED's most important benefit! LED lights generate virtually no heat therefore they are cool to the touch and can be left on for hours without incident or consequence if touched. **LED's produce 3.4 btu's/hour, compared to 85 for incandescent bulbs.** In comparison, incandescent lighting expels 90% of the energy it consumes via heat, making the bulbs hot to the touch. LEDs reduce the potential for safety risks such as burns and fires. LEDs are made from non toxic materials, unlike fluorescent lighting that uses mercury that may pose a danger to the environment. LED's are also recyclable and considered "green" or Earth-Friendly.

LED lights are offered in a variety of base colors such as Red, Green, Blue and Amber. Because traditional incandescent light bulbs use filters to produce colors, they are extremely inefficient. LEDs can be blended together to produce millions of color options.

Here at Electrical Connections, we know LEDs are poised to replace traditional incandescent light bulbs. LEDs are rapidly becoming the preferred lighting solution of both professionals and residential users. LED technology is continually advancing - producing brighter LED bulbs. The U.S. Department of Energy hopes to reduce the electricity used for lighting by 50% by converting to LED based light sources.

LEDs are currently used for a wide variety of different applications such as: residential lighting, aerospace industry, architectural, automotive, broadcasting, electronic instrumentation, entertainment and gaming, the military, traffic and transportation. Since LEDs are focused lights they prove best at specific lighting tasks such as desk lamps, reading lights, night lights, security lights, spot lights, accent lights and lighting for signage.



Call Electrical Connections today to let us upgrade your lighting to LED right away!