

# LED Top Things You Didn't Know About

- \* A light-emitting diode, or LED, is a type of solid-state lighting that uses a semiconductor to convert electricity into light. Today's LED bulbs can be six to seven times more energy efficient than conventional incandescent light and cut energy use by more than 80 percent.
- \* Good quality LED bulbs can have a life of 25,000 hours or more – meaning they can last more than 25 times longer than traditional light bulbs. That is a life of more than three years if ran 24 hours a day, seven days a week.
- \* Unlike incandescent bulbs, which release 90 percent of their energy as heat – LED's use energy far more efficiently with little wasted heat.
- \* From street lights, traffic signals and vehicle brake lights to TV's and display cases, LED's are used in a wide range of applications because of their unique characteristics, which include compact size, ease of maintenance, resistance to breakage, and the ability to focus the light in a single direction instead of having it go every which way.
- \* LED's contain no mercury, and a recent Energy Department study determined that LED's have a much smaller environmental impact than incandescent bulbs. They also have an edge over compact fluorescent lights (CFL) that's expected to grow over the next few years as LED Technology continues its steady improvement.
- \* Since the Energy Department started funding solid state lighting R&D in 2000, these projects have received 58 patents. Some of the most successful projects include developing new ways to use materials, extract more light, and will focus cutting by improving manufacturing equipment and processes.
- \* The first visible –spectrum LED was invented by Nick Holonyak, Jr., while working in GE in 1962. Since then, the technology has rapidly advanced and costs have dropped tremendously, making LED's a viable lighting solution. Between 2011 and 2012, global sales of LED replacement bulbs increased by 22 percent while the cost of 60-watt equivalent LED bulbs fell

by nearly 40 percent. By 2030, it's estimated the LED's will account for 75 percent of all lighting sales.

- \* In 2012, about 49 million LED's were installed in the U.S. – saving about \$675 million in annual energy costs. Switching entirely to LED lights over the next two decades could save the U.S. \$ 250 billion in energy costs, reduce electricity consumption for lighting by nearly 50 percent and avoid 1,800 million metric tons of carbon emissions.

Source: <http://energy.gov/articles/top-8-things-you-didn-t-know-about-leds>