

Energy Saving Automated Stairway Lights

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INCANDESCENT LIGHT

Incandescent lamps are a widely used, well-known, and simple lighting technology. These types of lamp work on the principle of incandescence, which produces light by heat. When the electric current is passed through the thin metal filament, the filament is heated, glows, and produces light. Incandescent lamps are commonly used in desk lamps, table lamps, hallway lighting, closets, accent lighting, and chandeliers. They provide good color rendering and, in fact, serve as the color standard by which all other lamps are measured. Incandescent lamps are easily dimmable.



Figure 1. Incandescent light used in stairway

CFL (COMPACT FLOURESCENT LAMP)

A compact fluorescent lamp (CFL), also called compact fluorescent light, energy-saving light and compact fluorescent tube, is a { HYPERLINK "https://en.wikipedia.org/wiki/Fluorescent_lamp" \o "Fluorescent lamp" } designed to replace an { HYPERLINK "https://en.wikipedia.org/wiki/Incandescent_light_bulb" \o "Incandescent light bulb" }; some types fit into { HYPERLINK "https://en.wikipedia.org/wiki/Light_fixture" \o "Light fixture" } designed for incandescent bulbs. The lamps use a tube that is curved or folded to fit into the space of an incandescent bulb, and a compact { HYPERLINK "https://en.wikipedia.org/wiki/Electronic_ballast" \o "Electronic ballast" } in the base of the lamp.



Figure 2. CFL light used in stairway

LED (LIGHT EMITTING DIODE)

An LED light bulb is a solid-state lighting (SSL) device that fits in standard screw-in connections but uses LEDs (light-emitting diodes) to produce light. LED light bulbs are a more environmentally-friendly alternative to incandescent bulbs.

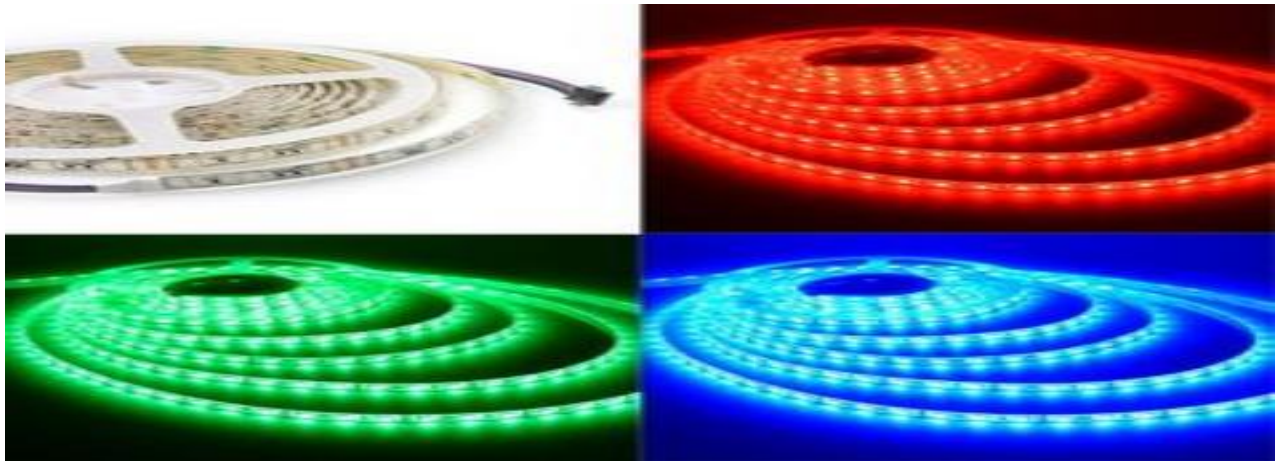


Figure 3. LED light used in stairway

Electricity is an essential resource in almost every sphere of life now. Life without electricity would be impossible to imagine. We must conserve electricity so that we can conserve these resources. Over the years, advances in technology have brought about innovations in how to light our homes and commercial buildings. In the beginning, all we had was the standard, incandescent light bulb. Now we have compact fluorescent lamps (CFL) and light emitting diodes or LED for short. We can find out what saves more energy by looking at their differences.

incandescent light bulbs of 40 watts or more, although sale of existing inventory will continue, and bulbs rated just under 40 watts probably will be available.

A comparison of a 40-watt bulb and alternatives that produce the same amount of light:



Incandescent bulb



Compact fluorescent lamp (CFL)



Light-emitting diode (LED)

Energy used	40 watts	11 watts	7 watts
Lifespan*	1 year	9 years	22 years
Price per bulb	\$1-2	\$4-6	\$10-25
Annual cost to operate*	\$4.82	\$1.32	\$0.84

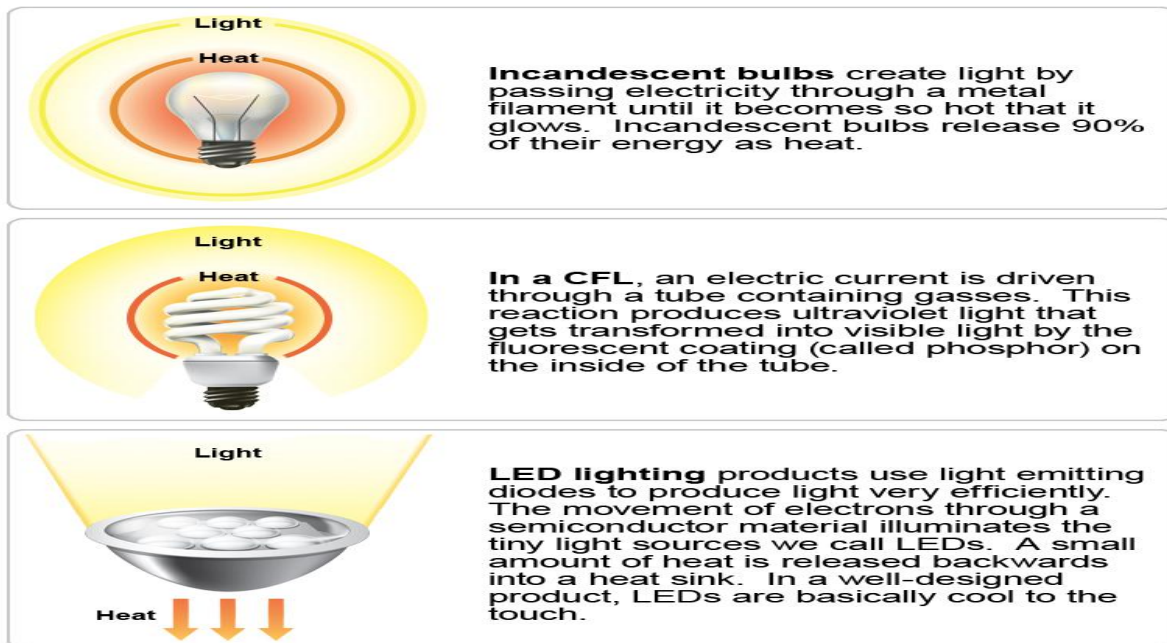


Figure 4. Comparison of 3 Light bulb

Tables

Smart Step: Positive Technology through Motion-Activated Stairway Safety Lights provides a method of individually lighting each step of your stairwell. The stair lighting system is fully automatic so as you step the stairwell, the lights are turned on by themselves. The lights will also turn off automatically when the person is already passed by with the help of RGB lights.

An RGB LED is an LED module that can produce almost any color using these three primary additive colors: Red, Green and Blue. Each RGB LED draws approximately 50 mA when it is set to full brightness and powered at 5 V. This means that for every 30 LEDs you turn on, your LED strip could be drawing as much as 1.5 A. These strip lights consume considerably less energy than conventional incandescent lighting. Lighting controls can help save energy and money.

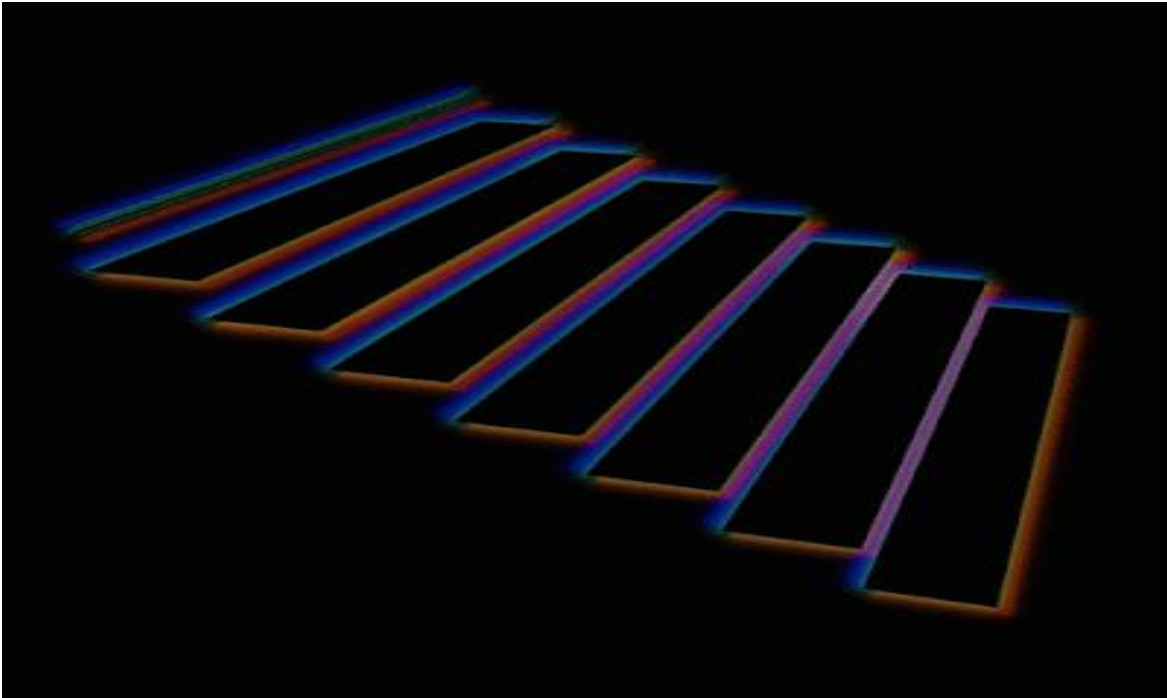


Figure 5. LED light (RGB) used in stairway

There are several benefits of lighting controls. Include improved energy efficiency, responsible power use and increased security and safety. Conserving energy produces a higher quality of life. Reduced emissions result in cleaner air quality. In addition, it helps create a healthier planet and helps sustain the resources we already have.