

What are LED lights?

LED lights are also known as solid state lighting. They are electric lights used in light installations that produce light utilizing in at least one light-emitting diodes (LEDs). Led lights are your basic electric or light bulbs that you most likely see on a daily basis. They are essentially more proficient than most fluorescent lights. Also, unlike most fluorescent lights, regular usage of the light switch on and off function does not contribute to a reduction in its lifespan. Also unlike most fluorescent lights, once switched on, led lights come to full brightness with no warm-up delay and their light yield only diminishes continuously over the lifetime of the LED.

How does a LED light work?

LED lights produce their lights through a process known as the electroluminescence. Switching on a semi-conductor diode will enable electrons reunite with holes which leads to a discharge electrical energy in light form. This effect does not involve any movement of the necessary parts in the production of electric light which contributes to the extended life span of LED lights.

The correlated Color temperature or CCT as it is better known as, serves as a measurement for the light color of LED lamps and it is measured in Kelvins.

Some of the most common colors of LED lights include; warm or soft white (it is the color of traditional light bulbs) and it ranges from 2,700 – 3,300 kelvins, natural or daylight LED lights which range from 3,300 kelvins to around 4,000 kelvins and cool white / moonlight/ xenon lamp light color that ranges from 5,000 kelvins to beyond.

LED LIGHTS EFFICIENCY

ENERGY

One of the main points of LED light efficiency is in its energy consumption traits. Normally, the output of energy in any light source is in a form of heat. Therefore, the higher the light and heat emitted, the more efficient the light is said to be. With the LEDs of today, efficiency is about 50%. Contrasted with incandescent lamps which is at 3% and fluorescent lamps at 20% on an average.

Light is easier to manage with LEDs than Traditional lamps because traditional lamps are known to give off light in an omni-directional way. This means emitting light in all directions. LEDs naturally emit light in a uni-directional way. Simply meaning in a single direction. To explain in layman terms, and Omni-directional light will emit its energy towards the sky alone. Reflections are then used to direct the light towards different angles. This exhausts lots of energy.

The data to find when comparing the energy efficiency of different lighting applications is known to be luminous efficacy. Luminous efficacy is all about the amount of light emitted per unit of power (watts), which is consequently consumed by a bulb. Currently and on an average, most commercially applied LEDs have an efficacy of 107 lm/W for a warm white light, and 130 lm/W for a cool lighting. This statistics propels LEDs over other types of lights. An example is

incandescent lights which is measured at 15 lm/W, and fluorescent lamps which produce 60-70 lm/W. The efficacy of a single LED is significantly different from the efficacy of a LED lamp. The efficacy of LED lamps can be greatly improved by better design and better use material qualities.

Most LED light usage will indefinitely result in the reduction in overall energy efficiency of the facility or community making use of. It. The energy saving could reach a peak of 90% on an average.

QUALITY OF LIGHT

Apart from the energy, the quality of light is also worth a look. LEDs offer great quality of light and renders the light in different individual visual preferences in terms of CCT. The CCT which is the correlated color temperature has a wide range of options such as a warm amber glow, warmer white, a cooler white light(similar to moonlight), multicolor for led strip lights, and so many more.

The lights are converted from a blue LED to a white spectrum of colors. A search on the internet for Amazon led lights will provide a lot of options to pick from. The most common led lights found on Amazon are red strip lights. They're quite colorful and used indoor, outdoor or for any DIY projects.

LIFESPAN OF LED LIGHTS

When appropriately ventilated and installed, led lights do not easily burn out. However, notwithstanding proper installation and maintenance, the brightness of led lights fades over the long haul. The life span of led lights are estimated by two attributes- its degree of diminishing after a thousand hours of usage and when its brightness will hit seventy percent of its expected worth.

For top quality LED lights, their expected percentage of decrease is three percent after the first thousand hours of usage and gradually 20 percent decrease over 30- 50 thousand hours of exploitation.

LED lights have an average life expectancy of fifty thousand hours. As an amazing example, Led strip lights are rated to keep burning brilliantly over a period of 17 years!

Advantages of LED Lights

LED (Light-Emitting Diode) Lights offer a plethora of benefits over traditional lights sources. Such includes; lower electricity consumption, much longer lifetime, higher durability, no ultraviolet and infrared radiation, low heat and smaller size.

1. LOW MAINTENANCE COST

At first look, the initial price of traditional lamps are quite cheaper than LED lamps. But despite the affordability of acquisition, maintenance brings about a different cost. Comparing maintenance and light quality makes LED take the lead. The power absorbed by traditional lamps to emit a certain expected amount of lumens is high. Comparing this to the lumen gotten from LED with little absorption of power makes a difference. This leads to maintenance. It'll cost you more to maintain a traditional lamp that sucks a lot of power. This means it is prone to damages and weariness. LEDs however, make use of less energy and requires less maintenance. This also means less electricity bills to pay despite the long usage hours.

2. GO GREEN

As mentioned, LED lights absorb less energy and produces a good light quality. It provides high lumens with long work hours. LED lamps contain zero mercury vapors in it. They are completely safe for your home, environment and are easily disposable as unharmed waste.

It also has no harmful Ultraviolet and a little amount of infrared rays. They are not harmful to both humans and objects that are sensitive to UV rays

By cutting back on your energy, it helps you go green with your environment. LED lamps emit little heat, therefore giving your air conditioner less working time.

3. LONGER LIFESPAN

LED lights are quite known for their highly extended and lasting period of usage. The average LED has a capacity of about 50,000 to 100,000 working hours. Some LED also have a 30,000 to 60,000 working hours. Comparing this figures to the years you can make use of them tells you how little you'd need to change them. This is a good point to consider for business owners. It lowers your maintenance cost for both labor and replacement of parts for at least 2 to 3 years respectively.

Unlike other lamps, LED lights lifespan is not determined by the switch button. It has no moving parts. It is also known as a solid state lighting. The dimming capability of LEDs is quite spectacular. They are able to operate at literally any percentage of their rated power, whether at 0% or at a 100%. They get more efficient with reduction of power. This in turn, improves their lifespan.

4. BETTER SAFETY MEASURE

Using LED comes with the benefit of safety. Although mostly underrated, the heat produced by light is an important factor. It is a contributor to hazards. The very little heat emitted by LED lamps makes it generally safer. This is because it consumes less power and can efficiently operate on a low-voltage power system. In the event of a power burst, or electrical hazard, LED lamps pose little to no threat.

5. SMALL AND ADAPTABLE

The actual LED device is significantly small. 5mm are the most common sizes. However, small devices can be less than a tenth of a single mm². They are intensively bright despite their tiny size.

Their small size makes them immensely adaptable to an abundance of LED light application models. It could be lighting applications we know of such as flashlights, led strip lights, domestic lightings, traffic lights, commercially attributed usage, and even a major stadium lighting. It could even be a lighting application yet to be invented.

6. VERSATILE USAGE

The features on LED lamps makes it quite flexible with various uses. One of which is the low voltage it operates on. This makes it suitable for outdoor lightning. It is more suitable for houses in front of the ocean, and also flood zones to avoid electrical hazards.

They also work well in any season or temperature. Be it cold, hot, dry, or humid, without any extreme degradation.

One of the most popular type of LED Lights are the red strip lights. They are always in demand and can be used for most home or external activities.

Led strip lights

LED strip lights are LED lights attached on the surface flexible strip of circuit board. The fixture of the light diodes on a surface is called SMD (surface light- emitting diodes) They are also known as ribbon or LED tape lights. LED strip lights were used traditionally for backlighting, decorative lighting projects like home DIY projects, task lighting and so on. However, during the modern times, there has been a significant increase in luminous efficacy and power of these SMDs have improved the usage of LED strip lights in projects such as high luminescent task lighting, set and costume design, indirect lighting applications and even in agricultural activities like growing plants.

These lights are available in a variety of colors, shapes, sizes, power levels and quantity of SMDs.

They are developed to suit both your indoor or outdoor projects and can be used for a wide range of installations and applications. They mostly come with adhesive backs so they are attachable to the walls or other surfaces you may wish to place them on.

Besides their wide ranges of uses, they are also extremely portable and can be recharged with a USB device or some batteries.

The popularity of Amazon LED lights are not limited to LED strip lights alone. LED fairy lights are also at the top of the Amazon LED lights list.

They are small sized but also produce radiant light. They are the proverbial small but mighty! They are captivating lights that can be used almost wherever. They are mostly used for decorative purposes like Christmas tree projects. They are made of tiny Light diodes or bulbs attached to thin and flexible metal wires that can be bent around decorations or spaces and are equipped with timers or plug in adapters and are majorly powered by batteries. These lights are handy, portable, easy to work with and surely the fairy dust to spark your décor to life!

Solar is the new rush these days and luckily, Amazon LED lights also are inclusive of solar powered LED lights.

LED solar are lighting applications consisting of a LED lamp, solar panels, battery or inverter, and a charge controller. The system works in a manner to provide the LED lamp power from the solar charged battery. Using solar LEDs is a great way to be eco-friendly due to the energy saved. It requires very little maintenance and it's very safe compared to traditional lamps.

LED lights have been useful over several generations. Their limited usage has been modified by modern technology. Now, instead of just lighting up your homes, you can use several types and colors of LED Lights to decorate, make spectacular costumes and as well aid plant production. Well, let there be light but let there be several uses of light!