

THE
BENEFITS
OF LED
LIGHTING



VONN

THE BENEFITS OF LED LIGHTING

Compared to traditional lighting, LED Lighting technology has an enormous amount of benefits.

LEDs usually use about 25%-80% less energy than conventional lighting, and they last 3-25 times longer. This feature will help cut down energy and lighting costs.

The usage of LEDs will affect the overall energy consumption of any building. It will also help regulate healthcare facilities, including hospitals, due to the massive potential for energy savings with their continuous operations and high-energy consumption.

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COST COMPARISON BETWEEN LED, CFL AND INCANDESCENT

CFLs are a temporary solution to energy-efficient lighting, arriving on the market when the first-generation LED bulbs had a narrow and focused light beam and cost too much for many consumers.

Recent developments in LED technology have addressed these issues. However, LEDs have proved to provide more light, and are mounted within diffuser lenses that spread the light across a wider area. Advancements in manufacturing technology have driven the prices down to a level where LED lighting is more cost-effective than CFLs or incandescent bulbs. This trend is continuing, with LED bulbs being designed for more applications while the prices keep going down over time.

The original 'sticker shock' of the LED bulbs are no longer a deterrent to their widespread acceptance by consumers. The following comparison charts illustrate the value of the latest LED bulbs when compared with CFLs and incandescent bulbs for overall efficiency as well as cost-effectiveness.

	LED	CFL	Incandescent
Light bulb projected lifespan	25,000 hours	10,000 hours	1,200 hours
Watts per bulb (equiv. 60 watts)	8.5	14	60
Cost per bulb	\$5	\$2	\$1
KWh of electricity used over 25,000 hours	212.5	350	1500
Cost of electricity (@ 0.10 per KWh)	\$21.25	\$35	\$150
Bulbs needed for 25,000 hours of use	1	2.5	21
Equivalent 25,000 hours bulb expense	\$5	\$5	\$21
Total cost for 25,000 hours	\$26.25	\$40	\$171
Energy Savings over 25,000 hours, assuming 25 bulbs per household			
Total cost for 25 bulbs	\$656.25	\$1000	\$4275
Savings to household by switching from incandescent bulbs	\$3618.75	\$3275	\$0

SOURCE: 2021 EARTHEASY.COM

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EQUIVALENT WATTAGES & LIGHT OUTPUT OF LED, CFL AND INCANDESCENT

Many different models and styles of LED lighting are available in today's marketplace. When choosing LED lighting, keep in mind the following: Estimate desired wattage: read the package to choose desired illumination level.

For example, a 3W LED is equivalent in output to a 45 W incandescent. Choose between warm and cool light: new LEDs are available in 'cool' white light, which is ideal for task lighting, and 'warm' light commonly used for accent or small area lighting.

Standard base or pin base: LEDs are available in several types of 'pin' sockets or the standard "screw" (Edison) bases for recessed or track lighting. Choose between standard and dimmable LEDs: some LEDs are now available as dimmable. Note also if your LED lighting will work in an enclosed light fixture: some do not.

Light Output	LEDs	CFLs	Incandescents
Lumens	Watts	Watts	Watts
450	4-5	8-12	40
750-900	6-8	13-18	60
1100-1300	9-13	18-22	75-100
1600-1800	16-20	23-30	100
2600-2800	25-28	30-55	150

SOURCE: 2021 EARTHEASY.COM

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COMPARING FEATURES OF LED, CFL AND INCANDESCENT

The lighting industry has come a long way in energy-efficient lighting technology. While CFL and Incandescent lighting remain on the market, the advantages of LED lighting are driving big companies to make the switch and adopt more energy-efficient lighting.

When CFL first came to the market, they became popular because of their 25%-35% energy-saving features. However, LED lighting can cut energy consumption by 75%, making it the best solution for your lighting needs. With almost zero ray emissions, LEDs are much safer than any conventional lighting. They contain less potentially hazardous materials and chemical elements, helping reduce the impact on the global environment.

	LEDs	CFLs	Incandescents
Frequent On/Off Cycling	no effect	shortens lifespan	yes
Turns on instantly	yes	slight delay with some CFLs	yes
Durability	durable	fragile	fragile
Heat Emitted	low (3 btu's/hr)	medium (15 btu's/hr)	high (85 btu's/hr)
Sensitivity to high temperature	some	yes	no
Sensitivity to low temperature	no	yes	no
Sensitivity to humidity	no	yes	some
Hazardous Materials	none	5 mg mercury/bulb	none
Replacement frequency (over 25k hours)	1	2.5	20+

SOURCE: 2021 EARTHEASY.COM

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KELVIN COLOR TEMPERATURE SCALE CHART



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COLOR RENDERING INDEX



With CRI 70 lighting, the fruit colors look dull and lack gloss. Lights with CRI 80 render colors well, and the fruits look better. With a high CRI 90, a lighting source illuminates the fruit in its vibrant and true color, making them more attractive.

OF BENEFITS
 TO YOUR LIGHTING
 SOLUTIONS

10 BENEFITS OF LED LIGHTING

Led lighting has been around for several years, but if you haven't already tapped into the plethora of benefits on offer from this type of lighting technology, here are ten reasons that you most definitely should!



- 1. Impressive Lifespans**
LED lighting products have impressive life spans, often lasting in excess of 20,000 hours.
- 2. Operational whatever the weather**
LED lighting is also incredibly robust, with no detrimental impact on performance in hot or cold weather. This makes them ideal for both indoor and outdoor applications.
- 3. Low Voltage**
LED lighting can also be run on a low voltage power supply without any dimming or dips in illumination levels.
- 4. Low levels of infrared light**
LED lighting produces very low levels of infrared light and little heat, meaning that they create close to zero UV emissions.
- 5. Durable in the harshest conditions**
LED lighting is able to withstand the toughest conditions, with many types of LED lighting being used in cold, hot or areas that are subjected to high levels of pollution.
- 6. The most energy-efficient lighting solution**
LEDs use less power, with an estimated energy efficiency of 80%-90% when compared to traditional lighting.
- 7. Kinder to the natural environment**
LED lighting is free from toxic chemicals often found in traditional lightbulbs. Substances such as mercury are used in the production of non-LED bulbs, making them impossible to recycle, unlike their LED counterparts.
- 8. Deliver light more efficiently**
Designed to focus illumination in a specific location, LED light achieves higher efficiency than conventional lighting by delivering more light where needed.
- 9. Perfect brightness**
Unlike traditional lightbulbs which take a few seconds to warm up, LED lighting reaches full brightness as soon as the power source is turned on. The bulb's lifespan is not affected by the number of times you flick the switch.
- 10. A variety of types to choose from**
LED technology can be found in a wide range of lighting products, including standard LED bulbs, light panels, outdoor lighting and emergency lighting, so there is an LED model for any lighting need.

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