

Light Bulbs: Know the Different Types

Source: HGTV.com

Fluorescent, incandescent, halogen and tungsten — learn where each bulb works best.

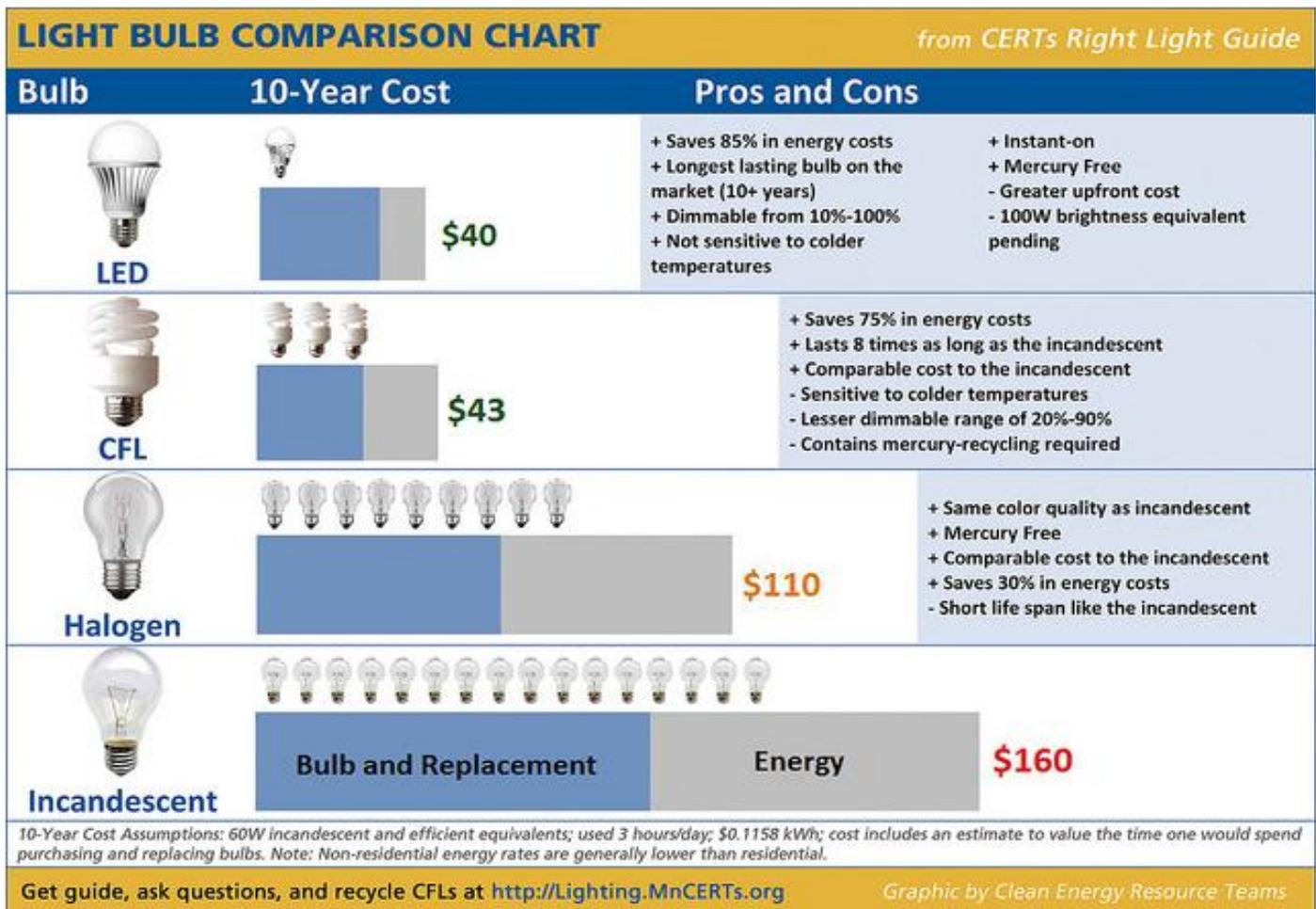
Each light bulb has its pros and cons and certain bulbs work better in different spaces of a home. Take a deeper look at the different light bulbs to see where each should be used.

Incandescent is the most commonly used light bulb and usually the least expensive. This type of light has a warm, inviting quality and is very complimentary to skin tones and psychologically appealing. Incandescent bulbs usually last between 700 to 1,000 hours and can be used with a dimmer; however, they're not as energy efficient as other options.

Halogen bulbs are a variation of incandescent. They give the closest approximation of natural daylight, known as "white light." Colors appear sharper under halogen light and the bulbs can be dimmed. They're a little more energy efficient than incandescent bulbs, but are more expensive and burn at a higher temperature. Most often halogen bulbs are used in under-cabinet lighting, pendant lights and recessed cans. Remember not to use bare hands when changing the halogen bulb. The smallest residue of oil from a human hand can rub off on the bulb, creating an atmosphere where the bulb warms too quickly when the lamp is turned on, which can cause the bulb to explode.

Compact fluorescent bulbs (CFLs) consume a quarter of the energy that incandescent bulbs do and last 10 times longer. Unlike the old fluorescent lights, CFLs are quiet, instant-on and have warmer, color-corrected tones. They can be used anywhere you would use a typical incandescent light bulb. CFLs contain trace amounts of mercury, a harmful substance. Although the bulbs contain far less mercury than other household items, care needs to be taken to prevent breakage. Also, when CFLs burn out, they should be recycled.

LED, which stands for "light-emitting diode," is a lighting technology that is long-lasting and extremely energy-efficient, but they're not ready to supplant all other bulbs yet. For one, they provide only directional light, not diffused light, making them ideal for under-counter task lighting, but not general room illumination. To overcome this, new models consist of large arrays of LEDs clustered together, but at prices from five to six times higher than CFLs, the bulbs are not for everybody.



Light Bulb Comparison Chart

Lamp type	Energy-saving incandescents (halogen)	Compact fluorescent lights (CFLs)	Light emitting diod (LEDs)
Energy savings compared with regular incandescents	25%	75%	75% - 80%+
Purchase cost	\$	\$\$	\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$
Five-year est. total cost (bulbs + energy)	\$29 (mostly energy \$)	\$10 (mostly energy \$)	\$24 (mostly bulb \$)
100-watt equivalent available?	Yes	Yes	Not yet. Only up to 75-watt equivalent
Lamp life (hours)	1,000 - 3,000	8,000 - 10,000	25,000+
Expected life span (at 1,000 hrs/yr; about 2.8 hrs/day)	1 to 3 years	8 to 10 years	25+ years
Dim well?	Yes	Most no	Some yes/ Some no
Color shift warmer when dimmed?	Yes	No	No
Okay for frequent switching?	Yes	No	Yes
Color temperature options	Warm only	Warm to cool	Warm to cool
Ability to make colors look true to life (color quality or CRI)	Excellent	Very good	Very good
Okay for enclosed fixtures?	Yes	Some yes	Some yes
How much heat does the bulb give off?	Lots of <i>radiant</i> heat	Moderate <i>radiant</i> heat	Moderate <i>conductive</i> heat
Works well in cold temperatures?	Yes	Some yes	Yes
Contains mercury?	No	Very small amount	No

Compact Fluorescent Light Bulbs: Change a Light Bulb and Change the World Save Energy, Money and the Environment with Compact Fluorescent Light Bulbs

Source: Larry West, former About.com Guide

If you want to change the world, start by changing a few light bulbs. It is one of the best things you can do for the environment—and your budget.

According to the Union of Concerned Scientists, if every U.S. household replaced just one regular incandescent light bulb with a compact fluorescent light bulb, it would prevent 90 billion pounds of greenhouse gas emissions from power plants, the equivalent of taking 7.5 million cars off the road. And the U.S. Environmental Protection Agency says that by replacing regular light bulbs with compact fluorescent light bulbs at the same minimal rate, Americans would save enough energy to light more than 2.5 million homes for a year.

Reasons to Switch to Compact Fluorescent Light Bulbs

On top of that, replacing one regular light bulb with an approved compact fluorescent light bulb would save consumers \$30 in energy costs over the life of the bulb.

Compact fluorescent light bulbs use at least two-thirds less energy than standard incandescent bulbs to provide the same amount of light, and they last up to 10 times longer. Compact fluorescent light bulbs also generate 70 percent less heat, so they are safer to operate and can also reduce energy costs associated with cooling homes and offices.

The only real drawback to using compact fluorescent bulbs is that each one contains about 5 mg of mercury, a toxic heavy metal that can cause serious health problems if inhaled or ingested over a period of time or in large enough doses. As a result, many environmentalists and other experts recommend recycling compact fluorescent bulbs to make sure they don't end up in landfills.

How Much Can You Save by Using Compact Fluorescent Light Bulbs?

For most people, switching from incandescent to compact fluorescent bulbs offers a lot of opportunity for energy and cost savings. Lighting accounts for 20 percent of the electric bill in the average U.S. home, and the average home has approximately 30 light fixtures. (Calculate your personal energy and cost savings with this handy online calculator, and find out how much you will be helping the environment.)

To save the most energy and money by using compact fluorescent light bulbs, the U.S. Environmental Protection Agency recommends replacing standard bulbs in areas where lights are used frequently and left on for a long time, such as family rooms, living rooms, kitchens, dining rooms, and porches.

Choosing the Right Compact Fluorescent Light Bulbs

To make sure you get the same amount of light when replacing standard bulbs with compact fluorescent light bulbs, check the lumen rating on the light you are replacing and purchase a compact fluorescent light bulb with the same lumen rating. (A lumen rating is the measure of light the bulb puts out.)

Wattage varies greatly between standard light bulbs and compact fluorescent light bulbs. Compact fluorescent light bulbs typically use about one-quarter of the wattage used by standard bulbs to produce the same amount of light. So to replace a traditional 60-watt bulb, look for a compact fluorescent light bulb that is about 15 watts.

Compact fluorescent light bulbs are available in many different sizes and shapes to fit in almost any fixture—from three-way lamps to dimmer switches—for both indoor and outdoor use. Compact fluorescent light bulbs also come in a variety of color temperatures, which helps determine the color and brightness of the light each bulb provides. (Learn more about the brightness, color and light quality of compact fluorescent light bulbs.)

Keeping It Simple

None of this is as daunting as it may seem. But to make it really simple, the environmental group Environmental Defense has put together an easy-to-use web site that lets you search for the compact fluorescent light bulbs according to where you want to use them or by shape, brightness, color of light or other features.

The site also features user reviews of specific bulbs, and side-by-side photos of energy-saving compact fluorescent light bulbs with incandescent bulbs to help you determine whether the fluorescent bulbs will fit your light fixture.

With all of the choices now offered by compact fluorescent technology, saving energy, saving money, and protecting the environment is as easy as changing a light bulb.

Which Type of Light Bulb is Better for the Environment?

Source: Philforhumanity.com/types_of_lightbulbs.html

The era of conventional light bulbs, also known as incandescent light bulbs, is about to run out soon. This is because laws are being passed throughout the world to ban these types of light bulbs for more efficient light bulbs.

For instance, the new compact fluorescent light bulbs (CFLs) use significantly less electricity when used. This is mainly because CFLs produce a lot less heat compared to incandescent light bulbs, and the generation of heat is basically the loss of energy. Even though CFLs are more expensive than incandescent light bulbs, if it believed that CFLs are more cost effective when factoring in their longer life spans and lower energy consumption. If this is true, then there is no need to ban the traditional incandescent light bulbs; because the free market will automatically obsolete the least cost effective type of light bulb.

The only problem with CFLs is that they contain an extremely toxic substance called mercury. If a single CFL breaks, then it could be very costly to clean up. For instance, a carpet or rug would need to be thrown away and that could cost thousands of dollars, however using a disposable wet rag is all that is necessary to clean mercury off of tile or cement. Furthermore, because CFLs contain mercury, they are not allowed to be thrown away with the regular trash in most places in the world, and proper disposal for CFLs is not well known or available everywhere. As a result, CFLs should not be considered environmentally friendly, even though they use less electricity. In fact, a lot of scientists and environmentalists are against CFLs, at least until CFLs are created without extremely toxic materials such as mercury.

The third and least popular type of light bulbs are light emitting diodes (LEDs). LEDs supposedly use less electricity than CFLs and incandescent light bulbs; however LEDs are currently much more expensive and harder to find. LEDs also have the added benefit of containing no toxic substances. Furthermore, LEDs supposedly last significantly longer than CFLs and incandescent light bulbs too. Hopefully with further scientific advances and larger scales of mass production, the price of LEDs will become competitive.

Therefore, LEDs are the most energy efficient and environmentally friendly light bulbs. As a result, politicians should stop trying to ban the old traditional light bulbs but instead help decrease the costs of LEDs.

Though not available for light bulbs, another friend to the environment is photoluminescent lighting. It absorbs and re-radiates photons, and is most commonly used for exit signs in office buildings. It is a cost-effective and eco-friendly alternative to the traditional forms of lighting used for emergency signage.