



Compact Fluorescent Light Bulb



Why do compact fluorescent lights cost more than incandescent bulbs?

The price relates to the costs of developing the new compact fluorescent technology. Recently, the price of high-quality compact fluorescent lights has decreased. As the number of lights sold increases, the overall price of the lights will continue to decline.

Will compact fluorescent lights really help me save energy and money on my electric bill?

Yes. A 23-watt compact fluorescent light provides the same amount of light as a 100-watt incandescent bulb.

Let's just compare the costs of the bulbs first and let's assume that you will use the light for 10,000 hours. You will need only one compact fluorescent light bulb that costs an average of \$5, but you will need about 10 incandescent bulbs since incandescent bulbs only last about 1,000 hours each. The incandescent bulbs may only cost you about \$5 but the electricity to run it will cost about \$99 versus only \$23 to run a compact fluorescent light bulb.

Bulbs plus electricity cost about \$27 when using compact fluorescent lights and \$104 when you use standard incandescent bulbs. Using a compact fluorescent light could save you \$77.

Why aren't compact fluorescent lights as small as regular incandescent bulbs?

A compact fluorescent light includes a lamp and a ballast or transformer. The incandescent bulb has no ballast. While compact fluorescent lights have been larger than their incandescent equivalent bulbs, the newest lights are less than one-half inch larger than the equivalent 60-watt incandescent bulb. In the future, manufacturers promise even smaller lights. For now it is wise to measure your fixture before you shop for a compact fluorescent light.

Where should I use my compact fluorescent lights?

The best places for compact fluorescent lights are in frequently used fixtures that are on for at least three hours at a time. Fixtures that are difficult to reach also are good places to put compact fluorescent lights.

Will the light from the compact fluorescent lights be the same as from an incandescent light?

Not exactly. Fluorescent light is from a linear source, which means it is spread out. Though there is less glare from fluorescent lights, the light cannot be directed as well as an incandescent light. This means that compact fluorescent lights are good for area fixtures, but not so good for spotlights. At startup, they take about 1.5 minutes to reach full brightness. For most users, this is a minor inconvenience.

Where are some places that compact fluorescent lights should not be used?

Because of electronic interference, compact fluorescent lights should not be used on some dimmers, in "touch" lamps, photocells or with certain electronic timers. Most compact fluorescent lights will now work with electronic controllers.

Can I use compact fluorescent lights in three-way lamps?

There is no danger in doing this, but you will get light only in the middle of the three "on" positions. Compact fluorescent lights specifically labeled as "three-way" are now available at retailers.

Will compact fluorescent lights work where it's cold? Where it's hot?

Always read the package for the manufacturer's recommendations, but, generally, compact fluorescent lights can be used in the 20° F to 140° F range. Many new products will start at temperatures to -20° F, though the light output may be somewhat reduced at very low temperatures. When compact fluorescent lights operate at temperatures above 140° F, there may be reduced light output and premature ballast failure.

Will they work where it's damp?

Do not install compact fluorescent lights where they will be directly exposed to water or snow. You can install compact fluorescent lights in sheltered exterior places. Some compact fluorescent lights have ventilation holes to keep them cool. Do not install that type of compact fluorescent light where moisture or water can get in the holes.

How long will compact fluorescent lights last?

That depends on what type of compact fluorescent lights you purchase. Most one-piece units should last 10,000 hours. The lamp part of a two-piece compact fluorescent light should last 10,000 hours also, but the ballast should last three to five times longer. A year has 8,760 hours. So, if you use a one-piece compact fluorescent light for four hours a day, it should last for seven years.

Is it true that compact fluorescent light bulbs contain harmful mercury?

Compact fluorescent lights contain a very small amount of mercury, significantly less than in fever thermometers. This small amount of mercury slowly bonds with the phosphor coating on the lamp interior as the lamp ages, prohibiting its entry into the atmosphere. Even breaking a fluorescent bulb is not a significant health risk because the amount of mercury vapor released is so small that it dissipates into the air with a minimal chance of inhalation. Using CFLs reduces the amount of mercury entering the environment by 75 percent. They are not regulated as hazardous waste.

What is the proper way to dispose of burned-out compact fluorescent light bulbs?

Go to earth911.org or call 1-800-clean-up. Online, enter your zip code, press "GO," click "Household Hazardous Waste," then "fluorescent light bulb disposal." Most residential recycling programs are not yet available; however there is one in Colorado Springs.

CFL Light Quality

Does the light produced by CFL bulbs look like the light I'm used to?

Most ENERGY STAR-qualified CFL bulbs produce light that is a good match to standard incandescent bulbs. Some manufacturers label these bulbs "Soft White." Light from bulbs labeled "Cool White," "Bright White" or "Daylight" will be whiter and/or bluer than the light from incandescent bulbs, but these choices are preferred by some people. Color temperature ratings help you select appropriate products.

What is "color temperature?"

Color temperature is a rating that distinguishes whether a CFL bulb puts out light that has a yellowish tinge (like familiar incandescent lighting), or light with a whiter or bluer tinge (such as a "cool white" or "daylight" bulb). ENERGY STAR-qualified products that don't specify a color temperature will be a good match with standard incandescent lighting.

"Correlated Color Temperature" (CCT), is an important measure of the color of light produced. The CCT value is available for all light bulbs, including CFL bulbs, and helps you choose the appropriate bulb for your application.

CCT is measured in degrees Kelvin (K). Imagine a piece of metal being heated. As its temperature increases, the color of the metal will gradually shift from red to orange to yellow to white to bluish-white. The color of light is measured along this scale. This table lists the typical color temperature of various light sources.

CCT (Degrees Kelvin)	Light Source	
1,500	Candle	Warm
1,800	Sunlight at dawn	Warm
2,000	High pressure sodium light	Warm
2,700	Conventional incandescent light	Warm
2,800	"Warm White" fluorescent light	Warm
3,000	Halogen light	Warm
4,000	"Cool White" fluorescent light	Neutral
5,000	Sunlight at midday	Cool
6,000	Mercury vapor light	Cool
6,500	"Daylight" fluorescent light	Cool

Warm color temperatures tend to enhance red and orange colors, adding a yellow tint to white items, and are typically used in homes and restaurants. ENERGY STAR-qualified bulbs that aren't labeled otherwise have CCTs from 2,700 K to 3,000 K, a good match with most incandescent bulbs. Manufacturers often label products in this CCT range as "Soft White."

Neutral color temperature lights do not bring out any particular color and are common in retail stores and offices. CFL bulbs designed in this range are sometimes labeled "Bright White" or "Cool White." ENERGY STAR qualified CFL bulbs in this range must list the CCT on the packaging.

Cool color in 5,000° K is considered the ideal light for studying and reading. "Daylight" is a common name for this light.

CFL Specialty Bulb Options

CFLs also come in many specialty bulb configurations. The UV CFL reduces ozone and kills viruses and bacteria while providing as much light as a 100-watt incandescent bulb but only using 23 watts of energy.

