

BULB SWAP

Compact Fluorescent Light Bulbs (CFLs) Frequently Asked Questions

What is a CFL?

Compact Fluorescent Light Bulbs are smaller versions of standard fluorescent bulbs that can directly replace standard incandescent bulbs. They consume between 5 to 40 watts, and their color and brightness are comparable to standard incandescent bulbs.

How do CFLs work?

CFLs consist of two parts - a gas-filled tube and a magnetic or electronic ballast. The gas in the tube glows with ultraviolet light when electricity from the ballast flows through it. This in turn excites a white phosphor coating on the inside of the tube, which emits visible light throughout the surface of the tube. Incandescent bulbs work differently. Most of the electricity they use heats a tungsten filament until it glows white hot. As a result, incandescent bulbs generate far more heat than a fluorescent light.

Why are CFLs more energy efficient?

CFLs are more energy efficient because they use less energy to provide the same amount of light. Fluorescent bulbs use discharge technology, which uses energy to create an arc of excited mercury vapor across the bulb. Less energy is needed to maintain this arc than to keep an incandescent filament burning. To provide less energy to the bulb, the bulb is designed to operate on high frequency electronics that reduce the current (energy) used by the bulb.

The following table compares bulbs, and illustrates how they can save you money:

	25 Watt CFL	100 Watt Incandescent
Cost of Bulbs	\$14.00	\$0.50
Bulb Life	1642.5 days (4.5 years)	167 days
Annual Energy Cost	\$5.91	\$21.90
No. of Bulbs Replaced in 4.5 years	0	10
Total Cost	\$40.60	\$103.55
Savings over Life of Bulb	\$62.95	0

Why are CFLs less expensive to use in the long-term?

CFLs last so much longer - the average life expectancy of a standard incandescent bulb is 750 hours, while the average life expectancy of a CFL is 10,000 hours. This means that you would buy at least 13 incandescent bulbs to get the same bulb life as 1 CFL.

Standard Bulb



Out with the Old

- Short bulb life
- Consumes **more** electricity
- Produces unwanted **heat**

Upgrade for **FREE**

CFL



In with the New

- Uses **75%** less energy
- Lasts **10-20** times longer
- Runs **cooler**
- Provides **soft** natural light

save money *By* saving energy

Where do I buy them?

Generally, you can buy CFLs wherever you buy standard incandescent light bulbs. Try home and building supply centers, grocery stores, hardware stores, and wholesale warehouses.

Are there any dangers associated with using CFLs?

No, there are no dangers if they are used and disposed of properly.

Do CFLs contain mercury?

CFLs contain a very small amount of mercury sealed within the glass tubing - an average of 5 milligrams - about the amount that would cover the tip of a ballpoint pen. By comparison, older thermometers contain about 500 milligrams of mercury. It would take 100 CFLs to equal that amount.

Mercury currently is an essential component of CFLs and is what allows the bulb to be an efficient light source. No mercury is released when the bulbs are intact or in use. Many manufacturers have taken significant steps to reduce mercury used in their fluorescent lighting products. In fact, the average amount of mercury in a CFL is anticipated to drop thanks to technology advances and a commitment from members of the National Electrical Manufacturers Association in the United States.

What precautions should I take when using CFLs in my home?

CFLs are made of glass and can break if dropped or roughly handled. Be careful when removing the bulb from its packaging, installing it, or replacing it. Always screw and unscrew the bulb by its base (not the glass), and never forcefully twist the CFL into a light socket. If a CFL breaks in your home, follow the clean-up recommendations below. Used CFLs should be disposed of properly.

What should I do with a CFL when it burns out?

Consumers need to drop the items at Tynes Bay Public Drop-off. DO NOT place broken or unworking CFLs in the garbage since CFLs should not be disposed of in an incinerator.

How should I clean up a broken fluorescent bulb?

The following steps can be performed by the general public:

1. Open a window and leave the room for 15 minutes or more.
2. Carefully scoop up the fragments and powder with stiff paper or cardboard and place them in a sealed plastic bag. Use disposable rubber gloves, if available (i.e., do not use bare hands).
 - Wipe the area clean with damp paper towels or disposable wet wipes and place them in the plastic bag.
 - Do not use a vacuum or broom to clean up the broken bulb on hard surfaces.
3. Place all cleanup materials in a second sealed plastic bag and take the bag to Tynes Bay Public Drop-off. Wash your hands after disposing of the bag.
4. If a fluorescent bulb breaks on a rug or carpet:
 - First, remove all materials you can without using a vacuum cleaner, following the steps above. Sticky tape (such as duct tape) can be used to pick up small pieces and powder.
 - If vacuuming is needed after all visible materials are removed, vacuum the area where the bulb was broken, remove the vacuum bag (or empty and wipe the canister) and put the bag or vacuum debris in two sealed plastic bags in the outdoor trash or protected outdoor location for normal disposal.

Do CFLs really provide the same light as a standard incandescent light bulb?



Yes, the brightness and color is comparable. Some brands of CFLs are better than others, and you may have to shop around a bit until you find the quality that you like.

Why are CFLs a funny shape?

CFLs are available in a variety of styles or shapes. Some have 2, 4, or 6 tubes, while some have a circular tube. New versions have a spiral-

shaped tube. The size or total surface area of the tube(s) determines how much light it produces. Other types are encapsulated in glass globes to look more similar to conventional incandescent light bulbs.

What is the wattage equivalent between a standard incandescent light bulb and CFL?

Watt Incandescent		Watt CFL
	25 w =	5 w
	50 w =	9 w
	60 w =	15 w
	75 w =	20 w
	100 w =	25 w
	120 w =	28 w
	150 w =	39 w
		

Where do CFLs work the best?

CFLs are ideal for rooms where lighting is left on for long periods of time, such as the kitchen or living room. You may see a slower payback in areas where the light is often turned on and off, or where they are on for only a few minutes. Because CFLs do not need to be changed often, they are ideal for hard-to-reach areas.

Can I put CFLs on a dimming switch?

Yes, but not all CFLs are designed for dimming switches. Make sure you buy one specifically for a dimming switch.

Do CFLs work in 3-way switches?

Although most CFLs fit into an existing 3-way light socket, only a few special models can light to more than one level. Make sure to buy one specifically for a 3-way switch.

Can I install CFLs outdoors?

CFLs operate within a specific temperature range and can be damaged by rain. Therefore, while CFLs work sufficiently outdoors, make sure to install them in enclosed fixtures to minimize the impacts of temperature, rain, and double check the temperature range given on the package.

“The Greenrock Bulb Swap” is an educational event coordinated by Greenrock to promote the use of CFLs.

Greenrock’s Mission - Our goal is to encourage and empower individuals and companies to do their part in making Bermuda socially, economically and environmentally sustainable for future generations.

Greenrock’s Value Proposition - We act as a catalyst using various techniques to encourage companies and individuals to take action in order to meet the objectives required for sustainable development in Bermuda.

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