

Compact Fluorescent Bulbs (CFLs)

fact sheet



The significant energy and cost saving benefits of CFLs are increasingly prompting consumers to replace existing, traditional bulbs in homes and offices with this newer lighting technology. Many public utilities also promote the use of CFLs because of their energy advantages. As a result, the popularity of CFLs continues to grow, yet many of their characteristics are not commonly known.

CFL Key Features

- **Longevity:** CFLs have a life-span 10-12 times longer than regular incandescent bulbs.
- **Dollar Savings:** CFLs provide the same light output using up to 75% less energy than incandescent bulbs. And due to the longevity of CFLs, consumers save on the costs of replacement bulbs.
- **Safety:** CFLs generate far less heat than incandescent bulbs.
- **Lumen Output:** CFLs produce the equivalent amount of light at a lower wattage than incandescent bulbs.

How do CFLs work?

- CFLs consist of two parts: a gas-filled tube and an electronic ballast. When electricity from the electronic ballast flows through the CFL tube, the gas in the tube glows with ultraviolet light. This in turn heats up a white phosphor coating on the inside of the tube, emitting visible light throughout the surface of the tube.

Where can I use a CFL?

- CFL bulbs can be used in **lamps, ceiling fixtures** and more. They come in a variety of shapes and sizes and are specifically designed to take the place of regular incandescent bulbs.
- Most CFLs can be used in enclosed **recessed fixtures**; if not, the marking on the plastic base of the CFL will specify "not for use in totally enclosed recessed fixtures."
- CFLs can be used in **bathrooms**. However, if conditions are excessively wet (i.e., the bulb is directly exposed to water), CFLs should not be used.
- If there is direct exposure to water, the CFL should be within an enclosed fixture.

THE TRUTH ABOUT CFLS

Where can't I use a CFL?

- CFLs can work with mechanical timers only. **Digital timers** may cause interference with the electronic ballast.
- Fixtures with a **photocell** (motion sensor or light sensor) may also cause interference, leading to possible problems with the bulb's performance.
- Non-dimmable CFLs cannot be used with a **dimmer**. Only dimmable CFLs are designed to be used with dimmers.
- Using CFLs with **garage door openers** is not recommended, as excessive vibrations may damage the internal circuitry and render the bulb inoperable.
- CFLs may not hold up to the stress of power surges. So using them in areas such as **workshops** may not be advisable.

Choosing a CFL

Because CFLs produce the equivalent amount of light at a lower wattage than incandescent bulbs, a 13-15W CFL will produce the same light output as a 60W incandescent bulb, and a 23W-26W CFL will replace a 100W incandescent bulb. Please see the chart below for more common equivalencies.

CFL wattage	Incandescent wattage
7-9	40
11	30
12	50
13-15	60
20	75
22-26	100

How do I install a CFL safely?

- To install or remove a CFL, it should be held by the base, and not by the glass. The glass of a CFL is fragile and can easily be cracked. If the glass is cracked, it may shatter during operation.
- A CFL can be used base up, down or sideways unless the marking on the plastic base or packaging expressly states a specific position.
- CFLs will not last as long if used base up. Typically, the heat that rises from the tubes will flow back to the ballast, thereby wearing down the internal components and shortening the bulb life.

"End-of-life" of a CFL

CFLs have unique "end-of-life" characteristics. In certain circumstances, a CFL may emit smoke, a plastic-like odor or a popping sound at the end of its life. This is a common occurrence in all brands of CFLs and is not considered dangerous. The plastic base may become discolored, charred or deformed, this is a sign that the heat is escaping as intended in the design of the bulb. All Globe screw-based CFLs are designed with special flame retardant plastic that do not burn and are UL certified.

For more information on end-of-life of CFLs please visit the ESA website by following the link below:

http://www.esasafe.com/pdf/Safety_Alerts/07-03-AL.pdf

THE TRUTH ABOUT CFLS

Mercury in CFLs:

CFLs contain a very small amount of mercury – about 1/5 of that found in a watch battery. CFLs do not emit mercury when they are in use, intact, properly stored, handled, and/or installed.

Product	Amount of Mercury	Number of Equivalent CFLs
Compact fluorescent bulb	an average of 5 milligrams	1
Watch battery	25 milligrams	5
Dental amalgams	500 milligrams	100
Home thermometer	500 mg – 2 grams	100 - 400
Float switches in sump pumps	2 grams	400
Tilt thermostat	3 grams	600

(Chart 1 taken from Mercury and energy efficient lighting fact sheet released by Energy Star)

For more information on Mercury in CFLs, please visit the Energy Star website by following the link below:

http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf

Disposing of a CFL

CFLs for homes are not legally considered hazardous waste according to the EPA. Should a CFL break, sweep up the debris and place it in a plastic bag. Clean the area with a damp paper towel and put the used towel in the plastic bag as well. Like paint, thermostats and other potentially hazardous household items, CFLs should be disposed of properly. Check with your municipality to see if it has a hazardous waste disposal program. If none exists, dispose of CFLs in a regular waste container. For additional information, please visit www.lamprecycle.org.

For more information on the safety of Compact Fluorescent lamps, please visit Health Canada's website by following the link below:

http://www.hc-sc.gc.ca/hl-vs/alt_formats/pdf/iyh-vsv/prod/cfl-afc-eng.pdf