



# ENERGY E-TIPS

## Compact Fluorescent Lighting

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Household Lighting accounts for 11 percent of total energy usage in the average American home. One technology now marketed for household use is Compact Fluorescent light bulbs (CFLs), which can reduce your energy use by 50 percent to 75 percent. Most major retailers offer these energy-efficient bulbs to consumers, and this ENERGY E-TIPS issue takes a closer look at these bulbs.



### How does it work?

In a Compact Fluorescent Bulb, electric current flows through the coiled tubing containing the inert gas (argon and mercury vapor). The mixing of those elements produces invisible ultraviolet light, which reacts with a powder-like fluorescent coating, and creates the visible light.

While CFLs use more energy than incandescent bulbs when they are first turned on, they use about 75 percent less energy while in use. Because of this, it is recommended to use these bulbs in fixtures that are used for longer periods, and not in areas where a light is quickly turned on and off.

In previous CFL models, the ballast (the electronic parts that regulate current in the bulb) created a buzzing noise in some bulbs. Today, most CFLs use electronic ballast, which does not buzz or hum.

### Why is the wattage different?

Some manufacturers use light output (lumens) to describe the output of the bulb. Most manufacturers mark on the packaging the equivalent wattage of incandescent bulb that the CFLs light will match. The following table gives equivalent wattage of CFL and traditional bulbs.

How Much Light Do I Need?		
Incandescent Bulbs (watts)	Minimum Light Output (lumens)	ENERGY STAR Qualified Light Bulbs (watts)
40	450	9 to 13
60	800	13 to 15
75	1,100	18 to 25
100	1,600	23 to 30
150	2,600	30 to 52

### Which type of CFL should I choose?

Energy Star has produced a valuable chart on their website to help the consumer make a decision about which type of CFL to put in many types of home lighting fixtures. That chart can be found here:

[http://www.energystar.gov/ia/products/lighting/cfls/downloads/How\\_To\\_Choose\\_FINAL\\_VERTICAL.pdf](http://www.energystar.gov/ia/products/lighting/cfls/downloads/How_To_Choose_FINAL_VERTICAL.pdf)

## Complaints about CFLs in Use

While most consumers enjoy the long life and monetary benefits of CFLs, there are some consumers who have been less than impressed with the overall performance of CFLs. First, sometimes the bulbs do not always last for the 5-7 years as promoted in literature and on the bulb packaging. In other instances, there is buzzing noise that is irritating to the consumer. Sometimes, that buzzing can cause disruptions in other electrical components in the home (such as telephones and televisions). These complaints sometimes make the consumer leery of purchasing more CFL bulbs.

However, many organizations have lists of CFL products that have been tested and shown to be effective. Energy Star labeled bulbs have been tested and retested, so look for that label when purchasing CFL bulbs.

Another thing to consider is to make sure you are following the recommended practices. Energy Star lists several ways to get the most out of your CFLs at

[http://www.energystar.gov/index.cfm?c=cfls.pr\\_cfls\\_about#get\\_most](http://www.energystar.gov/index.cfm?c=cfls.pr_cfls_about#get_most), including:

- Do the twist. – Screw in your CFL by holding the ballast (the white plastic part), NOT the glass tubing.
- Don't flip too fast. – You will maximize the lifetime savings and effectiveness of your CFLs by keeping them on for 15 minutes or more at a time.
- Choose 3 for 3. – Only use bulbs labeled as three-way on three-way sockets.
- Do not dim a non-dimmable. – Only use bulbs labeled as dimmable on dimmer switches.
- Check your controls. – Most photocells, motion sensors and electric timers are not designed to work with CFLs. Always check with the manufacturer of the control for compatibility.
- Give them air. – CFLs are sensitive to extreme temperatures, so place your CFLs in open fixtures indoors. Using them in enclosed fixtures indoors can create a hot environment that reduces the lifetime of your bulbs.
- Protect them outside. – Protect bulbs from the elements by placing them inside enclosed fixtures outdoors. For colder climates, look at the packaging for optimal operating temperatures.

## Watch out for the Mercury

One common concern with CFLs is the presence of mercury, and the damaging effects that, if released, can occur in the water supply and aquatic life (human consumption of fish is a main reason for mercury poisoning). Please remember to dispose of CFLs correctly, and not just throw them out with the trash. In Arkansas, ADEQ lists Household Hazardous Waste collection sites here:

[http://www.adeg.state.ar.us/solwaste/branch\\_recycling/hhwcc.htm](http://www.adeg.state.ar.us/solwaste/branch_recycling/hhwcc.htm).

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