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Energy Saving Tips from your local Energy Expert

CHOOSING ENERGY EFFICIENT LIGHTING

Did you know: Energy efficient lighting saves consumers money, creates jobs, and benefits the environment. At a time when families are struggling with high energy costs, efficient lighting will save the average American family \$50-100 every year on their electric bill (about \$12 billion nationwide), and save enough energy annually to power all the homes in Pennsylvania and Tennessee.

Choosing an LED lightbulb

Many different models and styles of LED bulbs are emerging in today's marketplace. When choosing a bulb, keep in mind the following:

- **Estimate desired wattage** - read the package to choose desired illumination level. For example, a 3W LED is equivalent in output to a 45 W incandescent.
- **Choose between warm and cool light** - new LED bulbs are available in 'cool' white light, which is ideal for task lighting, and 'warm' light commonly used for accent or small area lighting.
- **Standard base or pin base** - LEDs are available in several types of 'pin' sockets or the standard "screw" (Edison) bases for recessed or track lighting.
- **Choose between standard and dimmable bulbs** - some LED bulbs, such as the, are now available as dimmable bulbs.
- **Choose high quality bulbs or they will die prematurely** - do not buy cheap bulbs from eBay or discounters. They are inexpensive because the bulbs use a low-quality chip which fails easily.
- **Look for certifications** - including FCC and UL.

The common styles of LED bulbs include the following:



Diffused bulbs

In this style LED bulb, clusters of LEDs are covered by a dimpled lens which spreads the light out over a wider area. Available in standard Edison bases, these bulbs have many uses, such as area lighting for rooms, porches, reading lamps, accent lamps, hallways and low-light applications where lights remain on for extended periods.



Diffused high power bulbs

Designed for standard household use, these bulbs produce light equivalent to a 100-watt incandescent bulb. The EvoLux (pictured), and ZetaLux (pictured above) are the first UL Listed and FCC approved LED light bulbs for general household illumination.



Track Lighting

Available in MR-16 (pin base), LEDs are ideal for track lighting. LEDs do not contribute to heat buildup in a room because no matter how long they remain on, they do not get hot to the touch. Also, because they are 90% more efficient than incandescents, and last 10 times longer than CFLs, the frequency of changing bulbs is greatly reduced.



Recessed Downlight and Spotlight bulbs

LEDs are now available for standard recessed lighting pots and housings. For PAR 16 and PAR 20 cans, measure the can diameter and read the bulb dimensions to be sure it will fit. The light output and color quality are similar to incandescent downlights, but draws only about one-fifth of the power. Also, because they are 90% more efficient than incandescents, and last 10 times longer than CFLs, the frequency of changing bulbs is greatly reduced.



Outdoor Floodlight LEDs

Typically, security lights and outdoor floodlights use energy sucking halogen bulbs. Some people use CFL bulbs instead, and find they die quickly if installed in motion -activated switches. LED bulbs are great replacements: they are energy efficient, and will last up to 50,000 hours even when flicked on and off frequently. However, they are not as bright as halogen bulbs.

Choosing a CFL

CFLs come in many shapes and sizes. When purchasing CFLs, consult the seller for recommendations and consider the following:

- **Choose your preferred light quality**

CFL bulbs have a Kelvin or 'K' number listed on the packaging. CFLs with K numbers between 2700-3000 give off a soft bright light like incandescents. CFLs with K numbers between 3500-6000 give off a bright light. As you go up the K number scale the light gets bluish and closer to daylight.

For example:

Approx. 2700K = Warm White (looks just like incandescent)

Approx. 5000K = Cool White (white/blue, bright light)

- **Choose the shape.** CFLs are available in a variety of shapes to fit a range of lamps and lighting fixtures. See below on this page for the most popular CFL shapes.

- **Match lumens** to the incandescent being replaced. Lumens indicate the amount of light being generated. (Watts is a measure of energy use, not light strength.) To compare lumens and watts see chart below:

Incandescent Watts.....	CFL Watt range... ..	Lumen Range
40	8 -10	450
60	13 -18	890
75	18 - 22	1210
100	23 - 28	1750
150	34 - 42	2780

CFL Models

CFLs are available in a variety of styles or shapes. Some have two, four, or six tubes. Older models, and specialty models, have separate tubes and ballasts. Some CFLs have the tubes and ballast permanently connected. This allows you to change the tubes without changing the ballast. Others have circular or spiral-shaped tubes. In general, the size or total surface area of the tube determines how much light the bulb produces.

The following CFL bulb models come with standard sockets for easy installation in most common household applications.

Spiral Lamps

These bulbs are designed as a continuous tube in a spiral shape which has similar outside shape and light casting qualities to a standard incandescent bulb. Spiral CFL bulbs are made in several sizes to fit most common fixtures.



Triple Tube Lamps

These CFLs have more tubing in a smaller area, which generates even more light in a shorter bulb. They pack high light output into a very small space and can be used in fixtures designed for incandescent bulbs, such as table lamps, reading lamps, open hanging lamps, and bare bulb applications.



Standard Lamps

These are spiral lamps with a dome cover. They are designed to give the appearance of the traditional light bulb for consumers looking for the more familiar light bulb appearance. The glass diffuser provides a quality of light similar to the 'soft-white' type of incandescent bulbs.



Globe Lamps

This shape is commonly used in bathroom vanity mirrors or open hanging lamps, and bare bulb applications. Bathroom vanities usually require multiple bulbs, which generate radiant heat. The CFL globe will reduce this heat buildup while saving energy. The glass diffuser provides a soft-white light.



Flood Lamps

These lamps are designed to be ideal for recessed and track lighting fixtures, indoors and outdoors. They provide diffused, soft, white light, and generate less heat than will an incandescent flood or a halogen bulb.



Candelabra

The screw-in torpedo-shape and the small-base of this bulb is designed for smaller light fixtures throughout the house, from chandeliers to sconces. To use a smaller candelabra-based bulb in a regular socket, you can use a socket reducer.

