

# Compact Fluorescent Basics

## Fighting Fluorescent Phobia

The biggest misconception that still stigmatizes fluorescent light sources pertains to their color rendering. Many consumers still associate fluorescent with having an unflattering green cast. They are probably thinking of products they've seen at the cool end of the spectrum, or fluorescent lighting in institutional settings. You can combat these negative associations from fluorescent's aesthetically impaired past by educating your customers about lamp color and color rendering.

The Color Rendering Index (CRI) is a rating scale up to 100 that rates a light source's ability to accurately convey true color. Light sources with a low CRI will make objects and skin tones appear washed out and dull. Lamps with high CRI ratings bring life to a subject and make colors more vivid. Many CFLs have CRI ratings that exceed 80, which is considered excellent.

Lamp color, on the other hand, is based on a color temperature scale with a measurement called Kelvin. A warm color of light would be in the 2000K to 3000K range and would make reds, oranges and yellows more dominant. Light sources with a color temperature in the 4000K range would feature more blue or cool tones. The variety of color temperature options and CRI ratings for fluorescent light sources have improved dramatically thanks to advances in the types of phosphors used. So now your customers can see themselves in their best light without sacrificing energy savings.



<b>Color Temp</b>	Warm	Neutral	Cool	Daylight
<b>Kelvin Range</b>	3000K	3500K	4100K	5000K
<b>Effect &amp; Mood</b>	Warm & Friendly	Inviting & Comfortable	Clean & Organized	Bright & Alert
<b>Application</b>	Homes & Restaurants	Showrooms & Reception Offices	Office & Hospitals	Galleries & Jewelry Display

## Light Bulb Anatomy

### FLUORESCENT

How it works: Fluorescent lamps are phosphorous-coated tubes filled with a low-pressure mercury vapor. Light is produced by passing an electric arc between tungsten cathodes at opposite ends of the tube. This causes the mercury vapor to generate a radiant energy.

#### Tri-Phosphor Coating

This mixture converts ultraviolet light into visible light with superior color rendition and a high efficacy averaging 60 lumens per watt.

#### Electronic Ballast

These high-tech devices enable the lamp to light up immediately with no flickering or noise. Solid-state circuitry allows for three-way, dimmable and photocell models.



#### Compact Fluorescent Tube

An alternative to traditional linear tubes, these smaller-tubes have been configured into new shapes to reduce their size and increase their light output.

## What Is Energy Star?



Celebrating its 10th anniversary this year, Energy Star® is a government-backed symbol for energy efficiency, jointly managed by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE). The label was created to help consumers easily identify products that save energy and help to protect the environment.

Energy Star manufacturer partners may place the label on products that meet the high energy efficiency guidelines of the program. To keep up with technological advances, Energy Star reviews the guidelines for each product category and tightens them as necessary to ensure that, generally, only the top 25 percent of products in each category can earn the label.

# Beneficial Bulbs for Every Room

Energy Star recommends putting energy-efficient bulbs in the five most-used lamps or fixtures. Since these areas of the home have the highest energy use for lighting, these “high five” are good places to start—with plenty of options to suit most applications.



## Kitchen

Recessed lighting, whether used for general illumination or above sinks and stovetops, can take R30 or R40 fluorescent reflector lamps. The fact that these bulbs last up to 10 times longer than incandescents means fewer trips up the ladder to change them. For under-cabinet lights or surface fluorescent fixtures, install Energy Star-rated products that accept linear T8 lamps with electronic ballasts to ensure peak efficiency.

Bulbs will likely be visible in pendants over kitchen islands or a table, so compact fluorescents with a familiar “A” lamp style are best. Because dimmable compact fluorescents are available, the light level can adjust to accommodate tasks or mood-setting entertaining.



## Bathroom

Incandescent bulbs in standard theatrical-style vanity strips can be replaced with globe-shaped compact fluorescent sources. Color rendering is important in this room, so choose bulbs that have a CRI of 80 or better. Consumers are also most comfortable with color temperatures at the warm

end of the spectrum in bathrooms, so 3000K would be an appropriate choice. Fluorescent sources provide sufficient light for activities such as shaving or applying makeup without casting harsh shadows.



## Bedrooms

The average home’s bedrooms as a whole—including master, guest and children’s rooms—account for 10 percent of its energy used for lighting. Bedside table lamps or swing-arm wall sconces will benefit from spiral CFLs, particularly those models that offer three-way settings and dimming capability.

Tiffany lamps are enhanced by fluorescent sources because they create even illumination behind the colorful glass. Flush mounts with ventilation are also conducive to these sources because there are no visible “hot spots.” Since the fluorescent sources themselves are cool to the touch when in operation, there is less to worry about when they’re used in a child’s bedroom.



## Living Room

Here, too, recessed lighting can benefit from the use of R30 or R40 fluorescent reflector lamps. If line voltage track lighting is used instead or in addition, those fixtures can take R20 or R30 fluorescent reflector lamps.

Portable lamps—table or floor—are great candidates for spiral CFLs, which maximize light output with their unique shape and exposed tubes. New mini spiral models have petite tubes and smaller ballasts for tighter spaces without sacrificing efficacy. Spiral CFLs are also available with candelabra bases for use in chandeliers, although this type of light source is best in shaded applications.



## Outdoor

Spiral CFLs are available in bug light versions for use outdoors. Torpedo-style fluorescents, which come with standard screw-in or candelabra bases, can replace flame-shaped incandescent bulbs that are visible behind the panels of exterior lanterns.

Outdoor fixtures benefit greatly from energy-efficient light sources because they are usually left on for extended periods of time, so the cumulative wattage saved is significant. For this same reason, the long life of these bulbs makes a big difference, requiring fewer bulb changes and less maintenance.