



Randall Whitehead says-

## Here's what you need to know when selecting the right LED bulb:

Nowadays LEDs are the way to go. What has greatly improved, since LEDs were originally introduced, is the color quality of the light. All LEDs start out as a blue white light, but they can be filtered to create many colors...including a very warm incandescent quality of light. When people are out looking for LED bulbs they need to be aware of three things: color temperature, color rendering index and lumen output.

**Color Temperature-** all lights emit a hue of illumination. This is measured in degrees Kelvin. For example, daylight is 5000° Kelvin and incandescent light is 2700° Kelvin. Dimmed incandescent is 2400° Kelvin and candlelight is 2200° Kelvin; so the higher the number the whiter (cooler) the light becomes. When people are looking at the box of an LED light bulb they should check out what the color temperature is to make sure that they're getting a warm incandescent quality of light or whatever color that that works for them.

**Color Rendering Index (CRI)-** this compares the quality of light to incandescent. Incandescent has a CRI of 100. People want to pick a product that's closest to 100. Much of the LEDs on the market are in the 80 to 85 CRI range. This tends to flatten out colors. Look for an LED product that has a CRI rating of 90 to 98. Soon, TM30 will greatly expand upon the concept of color rendition.

**Lumen (lm) output-**this tells you how much light you will be getting from a light source, a 40 W incandescent bulb produces 500 lm, a 9 W fluorescent produces 500 lm, and depending on the manufacturer a 9.5 W to a 12.8 W LED can produce 489 to 575 lm.

LED lighting now comes with a **Lighting Facts** label on the box that gives you all of this information, including a little thermometer-like icon the tells you where in the color temperature range a particular product sits. It's like the same kind of information label that you would have a box of cereal that tells you such things as calories, vitamins, sugar content, etc. Often, the CRI rating is missing from the label. If it doesn't have one assume that the CRI is less than optimal. Adding the label is something that's voluntary for the manufacturers, see won't see it on all bulbs.

Randall Whitehead, Your Lighting Doctor

1212 Eighteenth Street San Francisco, California 94107

Web: [randall.lighting](http://randall.lighting) Email: [rdw@randallwhitehead.com](mailto:rdw@randallwhitehead.com) Twitter: @randallighting Blog: [lightmakesright.com](http://lightmakesright.com)