

LED LIGHTING MADE SIMPLE

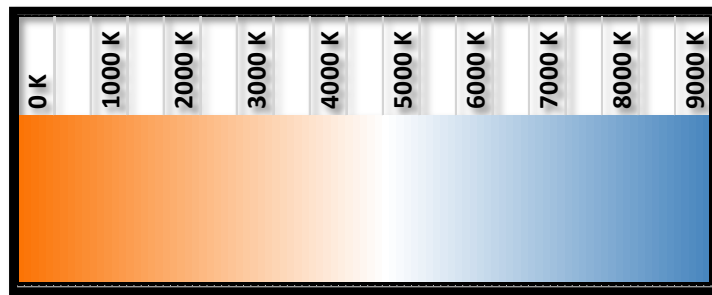
Light-emitting diode (LED) bulbs have many benefits. They use less energy. They last longer than incandescent, fluorescent and compact fluorescent (CFL) bulbs. They look a little futuristic, but they will not explode.



The “Big 3” for LED lighting are Color Rendering Index (CRI), Color Temperature, and Lumens per Watt. This guideline explains all three.

Color Rendering Index (CRI) is a quantitative measure from 0 to 100 of a light’s ability to reproduce the colors of various objects faithfully in comparison with an ideal or natural light source. The mid-day sun has a CRI of 100. Most LED lights have a CRI of 80 or greater. That means that an object as viewed in your home will look very similar in color under the lighting of the sun. This is an important thing to keep in mind so that the colors that you love in your home are seen the same when you turn your lights on at night.

The Color Temperature is the actual color of the light emitted by the light source. The graph below shows the correlating temperature colors and simplistic equivalents. The typical office lighting is between 3500 Kelvin, or K, and 4500 K. At 4500 K, you begin to see a blue tinge to the lighting. This can be uncomfortable for some. Typically, temperatures greater than 4500 K are specified for laboratory or hospital settings.



Finally, Lumens per Watt is a measurement of light output (lumens) per power consumed (Watts). You want this ratio to be as high as possible. The table below shows basic information about different bulbs that are available for installation in your home. While the LED bulb usually costs more up front, the savings over the life of the bulb more than compensate for the extra up front.

Specification	60 Watt Incandescent	10 Watt, 4' Fluorescent T-12	50 Watt Halogen Bi-Pin Base	13 Watt CFL Bulb	32 Watt, 4' Fluorescent T-8	9.5 Watt LED Bulb
Lumens	850	2600	1200	800	2800	800
Watts	60	40	50	13	32	9.5
Lumens / Watt	14.2	65.0	24.0	61.5	87.5	84.2
Life Span (hrs)	1,000	20,000	2,000	8,000	20,000	25,000
Price / Bulb	\$0.50	\$2.00	\$2.50	\$4.00	\$2.00	\$5.00