

PURPOSE

The first step in choosing the right light is to identify the purpose it will serve.

Omnidirectional light sources distribute light uniformly in all directions and are ideal inside shaded lamps, wall sconces, post lights, and porch lights.

Common **directional light sources** include those used for accent lighting, floodlights or track lights, and downlights. With these lamps, you may need a specific angle of light. You will find this angle on the side of the lamp packaging, noted as the “beam spread” or “beam angle.”



OMNIDIRECTIONAL



DIRECTIONAL

OUTPUT

Many people are used to estimating light output based on electricity use. Now, because more efficient light sources like LEDs can generate similar light levels using fewer watts, we should compare lamps based on **lumens**, which is the actual unit used to measure light output.

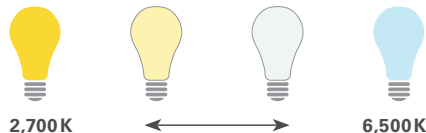
Instead of looking for something that consumes 60 W or more, you will look for a lamp that produces about 800 lumens. As the chart below illustrates, **the higher the number of lumens, the greater the amount of light.**

LUMENS →		LUMENS 450	LUMENS 800	LUMENS 1100	LUMENS 1600	
		DIMMER ←		→ BRIGHTER		
↑ LESS EFFICIENT	💡	STANDARD INCANDESCENTS	40 W	60 W	75 W	100 W
	💡	NEW HALOGEN INCANDESCENTS	29 W	43 W	53 W	72 W
	💡	CFLs <i>Save up to 75%</i>	9 W	14 W	19 W	23 W
↓ MORE EFFICIENT	💡	LEDs <i>Save up to 77%</i>	8 W	13 W	17 W	N/A

CORRELATED COLOR TEMPERATURE

When it comes to getting the color quality you want from your lighting, there are two basic concepts to consider. The first is **correlated color temperature (CCT)**, measured on the Kelvin scale (K). CCT refers to how warm or cool the light appears and influences how cool or warm a space will appear. Americans tend to prefer lamps with a warmer CCT for their homes, typically in the 2700 – 3000 K range, but it is largely a matter of personal preference.

It is important to choose a color temperature you like, then keep your lamp purchases close to that color temperature to maintain consistency.



COLOR RENDERING INDEX

Another very important issue to consider is how a lamp renders color. The color fidelity or accuracy of a light source is currently measured by the **color rendering index (CRI)**, which has a maximum value of 100.

Lamps measuring 90 CRI or above will provide excellent color rendering for your home’s interior.



DIMMING

Dimming allows you to easily adjust light levels — and it saves energy! If your application calls for it, make sure the lamps you purchase are clearly labeled “dimmable.”

If you are replacing track lights, downlights or accent lights, you should be aware that some components designed for older, less efficient light sources can cause dimmable LED lamps to flicker or dim poorly. Make sure all the components you select are marked as compatible with each other! You might also look for products labeled “flicker free” or “plug and play.”

Searchable databases, such as ENERGY STAR and Lighting Facts, provide consumers with a great source of information to determine broad compatibility of products.

LIFE

LED lamps last much longer than traditional light sources, but like any appliance, some are better than others. High-quality LED lamps used in the home should easily last five years or more. This is currently an industry standard, and lifetime is expected to increase in future products.

When choosing LED lamps, look for at least 10,000 + hours (or at least 9.1 years) of rated life and a warranty of at least five years. A lamp that has a five-year warranty, and is a higher-quality product may cost a bit more initially, but they are much more likely to deliver better-quality lighting and more savings over time.



ENERGY STAR



LIGHTING FACTS

Lighting Facts Per Bulb

Brightness **820 lumens**

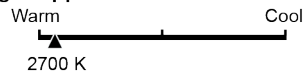
Estimated Yearly Energy Cost \$7.23

Based on 3 hrs/day, 11¢/kWh
Cost depends on rates and use

Life

Based on 3 hrs/day **1.4 years**

Light Appearance



Energy Used **60 watts**

The Lighting Facts Label, found on the packaging of most lamps, helps consumers compare products. Information can also be found through manufacturers' websites and in product specification sheets.



**CHOOSING THE
RIGHT LIGHT**
LIGHT BUYING GUIDELINES

UC DAVIS
UNIVERSITY OF CALIFORNIA

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