

E-Conservation Home Energy Management Series

READING THE LIGHTING LABEL: HOW TO PURCHASE LIGHT BULBS

Much has changed in the area of lighting, including how consumers purchase light bulbs. In the past, consumers bought bulbs based on watts (i.e. 75 watt bulb, 100 watt bulb). The more the watts, the brighter the light would be. Wattage is not a measure of brightness, however. Instead, wattage is a measure of the amount of energy used to power the bulb. The higher the watts, the more energy used. New energy efficient lighting has changed our approach to purchasing because new bulbs use considerably fewer watts (energy) to create light. The amount of watts used for newer bulbs does not indicate the amount of light provided by the bulb. Understandably, this change has led to confusion among consumers about how to purchase the right bulb for the preferred amount of light.

The new way to purchase light bulbs is not by how much energy is used (watts) but, instead, by how much light is emitted from the bulb. How much light a bulb provides is measured by lumens. The higher the number of lumens, the greater amount of light output. It actually makes much better sense.

So how do consumers know how many lumens they need? Below is a chart to help decipher the wattage of a typical older incandescent bulb and the amount of lumens you should look for when replacing that bulb.



INCANDESCENT BULB WATTS	LUMENS PRODUCED
100 watt bulb	1600 lumens
75 watt bulb	1100 lumens
60 watt bulb	800 lumens
40 watt bulb	450 lumens

In addition to light output there are a number of other items for consumers to consider when purchasing bulbs. To help consumers even more, the Federal Trade Commission has created a new packaging label for light bulbs. This is designed much like nutrition package labels and it provides valuable information for consumers on brightness, average yearly costs of using the bulb, life expectancy of the bulb, light appearance, watts used and whether or not the bulb contains mercury.



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Lighting Facts Per Bulb	
Brightness ①	870 lumens
Estimated Yearly Energy Cost ②	\$1.57
Based on 3 hrs/day, 11¢/kWh Cost depends on rates and use	
Life ④	5.5 years
Based on 3 hrs/day	
Light Appearance	
Warm Cool	
⑤	2700 K
Energy Used ⑥	13 watts
Contains Mercury ⑦	
For more on clean up and safe disposal, visit epa.gov/cfl .	

- 1. BRIGHTNESS:** This refers to the amount of light output. The higher the number of lumens, the greater the light output.
- 2. ESTIMATED YEARLY ENERGY COSTS:** This monetary figure is based on a specific number of hours used at an average cost of electricity. This number is an estimate. It may increase or decrease depending upon the amount of time the bulb is in use and the cost of electricity in the user's location.
- 3. ENERGY STAR:** The EnergyStar logo will appear on the label if the bulb has earned this rating. Not all bulbs will meet this standard.
- 4. LIFE EXPECTANCY:** This number is an indication of how long the bulb should last if used for a specific period of time each day. As with costs, this is an average and the number will change based on actual use.
- 5. LIGHT APPEARANCE:** This information is expressed as a number with a K behind it. This number stands for Kelvin (named after Lord Kelvin), and relates to the bulbs color temperature. The lower the number, the warmer the light color produced. The higher the number, the cooler the light produced. To help put light color and temperature into perspective, candlelight is near 1800K, a 75 watt incandescent is around 2800K, a cool white around 3500-4000K, an overcast sky is near 6000K, and a clear sky is 10,000K and above.
- 6. ENERGY USED:** This information tells consumers the amount of energy (measured in watts) the bulb uses when in operation.
- 7. CONTAINS MERCURY:** If the bulb contains mercury, it will be clearly stated on the label. Additionally, the label will provide information on where consumers can find out more about clean up and disposal of these bulbs.

SOURCES: Allen, K. (2009). Lighting. Univeristy of Florida, Institute of Food and Agricultural Services.

U.S. Department of Energy. (2013). Energy 101: Lumens. Retrieved from <http://energy.gov/public-services/homes/saving-electricity/lighting>

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