

ENERGY- SAVING HANDBOOK

LIGHTING





Dear Retailer,

Thank you for offering energy-efficient lighting options through Energy Trust of Oregon. You are vital to providing customers with remedies to soothe their “left-the-lights-on fever.” This energy-wasting dilemma strikes when no amount of pleading and prodding can get other members of the house to turn lights off when they leave the room, resulting in money wasted to light empty rooms.

ENERGY STAR® LEDs are the remedy. They use up to 85 percent less energy and can last up to 15 times longer than traditional incandescent bulbs. By working with Energy Trust, you can offer your customers instant discounts on qualifying ENERGY STAR LEDs. Customers simply look for products identified by Energy Trust marketing materials and receive the discounted price at the time of purchase; no coupons or forms are required.

What support will I receive?

A field representative will visit your store monthly to help ensure success by:

- Training your staff on qualifying energy-saving products
- Ensuring all products are in stock and priced correctly
- Providing all necessary point-of-purchase marketing materials
- Conducting educational outreach events—at mutually agreed-upon times—to guide customers to qualifying products
- Making your business searchable by customers looking for discounts on Energy Trust’s website at **www.energytrust.org/lighting**

Our team looks forward to working with your store. Your customers will enjoy products that help them save energy while you enjoy the added benefits of increased sales.

LIGHTING FAQs

What is a light-emitting diode (LED) and how does it work?

LEDs combine several individual small light bulbs (diodes) that generate light by moving electrons through semiconductor materials. Unlike incandescent bulbs, they do not contain filaments or generate a lot of heat. LEDs last up to 15 times longer than incandescent bulbs and are known for being durable. They can take a lot of jarring and bumping and still maintain their ability to function efficiently. Many are dimmable, so they work well for ambient lighting and almost all lighting situations.

Why should I use LEDs?

- Lighting accounts for up to 20 percent of residential electricity use, so switching to LEDs is a great way to lower your energy bills.
- Compared to incandescent bulbs, LEDs use up to 85 percent less energy.
- An LED produces 90 percent less heat than an incandescent bulb and stays cool to the touch at all times, making it a safer option.

Why choose ENERGY STAR?



As more LEDs appear on store shelves, choosing bulbs with the ENERGY STAR label will ensure that you get the best bulb quality and performance. ENERGY STAR bulbs have been tested to meet minimum performance

requirements in the following areas:

- **Color:** Ensures consistent quality over time
- **Light output:** You get the right amount of light where you need it
- **Lifetime:** Extensive testing backs up lifetime claims of 15 to 25 years
- **Warranty:** All ENERGY STAR bulbs have a minimum 3-year warranty

By making a more efficient choice today, you're saving yourself energy, money and time for years to come.

Where can I install LEDs?

There are a wide variety of styles that are designed for use in most fixtures in your home, but be sure to always read the package to confirm the proper application.

Bulb types include:



A-shaped omnidirectional bulbs – shine light in all directions, so they can replace incandescent bulbs in ceiling lights, lamps, wall sconces and more.



Globes – good in fixtures where the bulb is exposed, such as bathroom vanity lights or pendant lamps.



Reflectors – intended for recessed cans, track lighting and even some protected outdoor spotlights.



Candle shapes – can be used in some porch lights, wall sconces and chandeliers.

Do LEDs work with dimmers?

Certain LEDs are specially designed to work with dimmers, but always check the packaging to ensure the bulb you are choosing has this capability. Also, check that your dimmer switch is compatible with the bulb type; not all LEDs are compatible with dimmer controls that were originally designed for incandescent bulbs. Bulbs not designed for these fixture types may have a shorter life.

Can I use LEDs outside?

Yes, LEDs perform well outdoors. Check the packaging to choose a bulb that has been designed and manufactured to withstand the elements.

BULB GUIDE

How do I select a replacement bulb?

To save the most energy and money, replace light bulbs in your highest-used fixtures with energy-efficient LEDs.

Look for lumens instead of watts

A watt is a measure of power consumption. When purchasing a light bulb, what you are really after is light output, which is measured in lumens. A 60-watt incandescent bulb gives you about 800 lumens, while a 10-watt ENERGY STAR LED provides the same 800 lumens using much less power.

	YOU USED TO BUY		YOUR CHOICES NOW	
	LEAST EFFICIENT			MOST EFFICIENT
	Standard Incandescents	New Halogen Incandescents	CFLs	LEDs
				
450 lumens	40 W* \$5.09/yr**	29 W \$3.69/yr	10 W \$1.27/yr	5 W \$0.64/yr
800 lumens	60 W \$7.64/yr	43 W \$5.48/yr	13 W \$1.66/yr	10 W \$1.27/yr
1100 lumens	75 W \$9.55/yr	53 W \$6.75/yr	16 W \$2.04/yr	15 W \$1.91/yr
1600 lumens	100 W \$12.74/yr	72 W \$9.17/yr	20 W \$2.55/yr	19 W \$2.42/yr (limited availability)

*Energy use

**Average Oregon energy cost per year, based on three hours of use per day

LEARN FROM THE LABEL

Most light bulb packages now have lighting facts labels, like the one shown below, that tell you what you need to know about the bulb, much like nutrition labels on food. To save energy costs, find bulbs with the light output (lumens) you need, then choose the one with the lowest watts.

It's as easy as 1, 2, 3...

1. Choose the bulb based on brightness

2. Look for a low estimated energy cost per year.

3. Select other features

- *Life*
- *Light appearance*

Lighting Facts		Per Bulb
Brightness	800 lumens	
Estimated Yearly Energy Cost	\$1.20	
Based on 3 hrs/day, 11¢/kWh. Cost depends on rates and use.		
Life	22.8 years	
Based on 3 hrs/day		
Light Appearance		
Warm		Cool
		
Energy Used		10 watts

HOW DO I CHOOSE THE BEST COLOR?

ENERGY STAR qualified bulbs can produce varying shades of white light. The shade of white light is identified as “light appearance,” which is measured in Kelvin (K). Lower Kelvin numbers mean the light has a softer, warmer color, while higher Kelvin numbers mean the light has a brighter, cooler color.



- Works well in most settings
- Emits softer, yellower light that enhances warm colors
- Emits white to bluish-white light
- Identified as “bright white,” “daylight,” or “natural”

Consider these recommendations:

- Living room
- Bedroom
- Dining areas
- Kitchen
- Bathroom
- Garage or other work areas

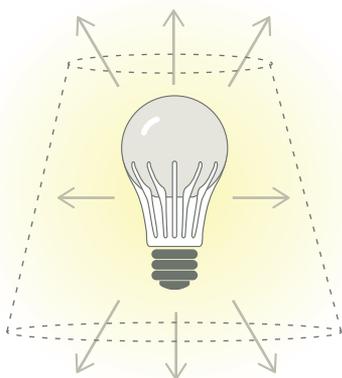
WHAT IS OMNIDIRECTIONAL LIGHT?

LEDs were first used as “directional” light sources, which means they emitted light in a specific direction, making them a great choice for spotlight applications, like recessed cans and track lighting. Now manufacturers are engineering LEDs to be “omnidirectional,” meaning they shine light evenly in all directions, like a traditional bulb.

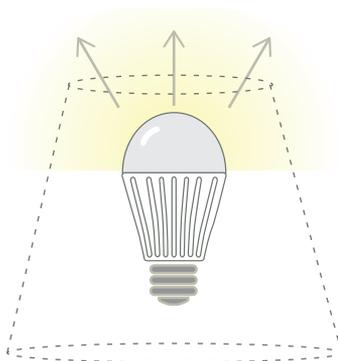
ENERGY STAR LED bulbs meet very specific requirements for omnidirectional light, so they can be used for a wide variety of applications. As the graphic demonstrates, a general purpose LED bulb that is not ENERGY STAR certified may not distribute light in all directions.

If you are using an LED in fixtures where you need even light in all directions, such as table lamps, ceiling lights or outdoor porch lighting, make sure your bulb is ENERGY STAR certified and labeled “omnidirectional.”

Omnidirectional Light Distribution Comparison



- ENERGY STAR omnidirectional bulbs emit light evenly in all directions

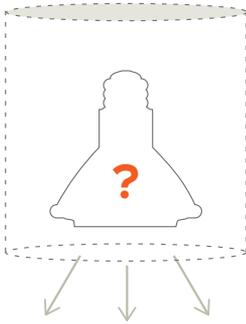


- LEDs that are not omnidirectional will not distribute light evenly in all directions

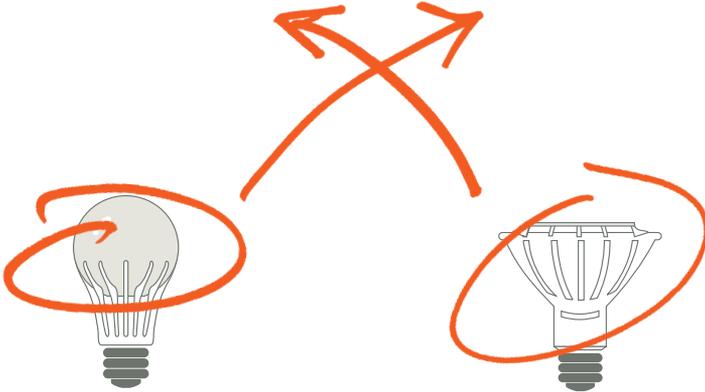
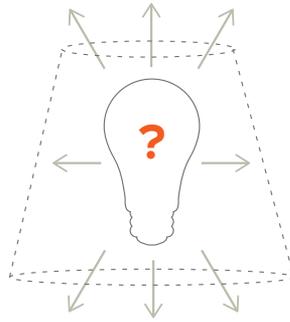
LED BULB STYLE CONSIDERATIONS

LEDs are becoming more versatile than ever for use at home and are available in omnidirectional and reflector styles. See if you can tell which bulb belongs in each fixture:

Recessed Can



Lamp Shade



Omnidirectional

- Use in lamps
- Light shines in multiple directions

Reflector

- Use in recessed cans, track lights and spotlights
- Light shines in only one direction

BULB RECYCLING

While manufacturers and consumers alike are shifting toward LEDs, many households are still using CFLs. Once a CFL burns out, it's important to recycle the bulb properly.

Can I recycle my CFLs?

Yes. Like batteries or any other potentially hazardous household products, CFLs should be properly recycled at the end of their life. Many retailers—including The Home Depot, Lowe's and Ikea—accept CFLs in their stores for free recycling. Also check with your local solid waste agency for additional recycling options.

Can I recycle my LEDs?

Check with your local recycler to see if they accept LEDs. Because LEDs do not contain any mercury, you can also safely throw them away with your regular trash.

Do CFLs contain mercury?

Yes, CFLs contain a trace amount of mercury (4mg or less). This small amount of mercury—equivalent in size to the tip of a ball-point pen—is necessary for the bulb to function correctly.

How should I clean up a broken CFL?

- Open windows to allow the room to ventilate.
- Sweep up—don't vacuum—all of the glass fragments and fine particles.
- Place broken bulb pieces in a sealable plastic bag and wipe the area with a damp paper towel. Put the used paper towel in the plastic bag as well and throw the sealed plastic bag away.

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Energy Trust of Oregon is an independent nonprofit organization dedicated to helping utility customers benefit from saving energy and generating renewable power. Our services, cash incentives and energy solutions have helped participating customers of Portland General Electric, Pacific Power, NW Natural, Cascade Natural Gas and Avista save on energy bills. Our work helps keep energy costs as low as possible, creates jobs and builds a sustainable energy future. 1/17