

## What the Package Can Tell You...

### What type of light source will the dimmer dim?

- ▶ Specific types of dimmers are made for incandescent bulbs, compact fluorescent bulbs, and light emitting diodes.

### How much longer will the bulb last if dimmed?

- ▶ Average lifespan (in hours) increases for most bulbs when dimmed, but actual length varies.

**All of these things can tell you how much the lighting really costs!**

### Choose the dimmer that is right for you!

- ▶ People with a limited range of hand motion need a dimmer that works without grasping or twisting.
- ▶ Any dimmer can change the mood of a room and save energy when used the right way.

#### Typical Dimmer Styles

##### Conventional Manual Wall-Box



Rotary



Sliding

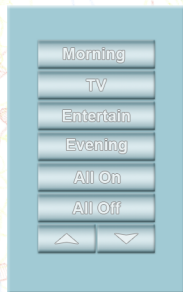


Toggle

##### Portable



##### Programmable/Automated



## WANT MORE INFORMATION?

PLEASE CONTACT YOUR LOCAL EXTENSION OFFICE:



### SOURCES:

Custom Electronic Design & Installation Association. (2009). *Dimming screw-in compact fluorescent lamps: Residential applications*. Retrieved from <http://www.cediacrosspoint.com/white-paper-dimming-screw-compact-fluorescent-lamps-residential-applications.com>

Energy Star. (2006). *Building manual: Lighting*. Retrieved from [http://www.energystar.gov/ia/business/EPA\\_BUM\\_CH6\\_Lighting.pdf](http://www.energystar.gov/ia/business/EPA_BUM_CH6_Lighting.pdf)

Energy Star. (n.d.). The Energy Star choose a light guide. Retrieved from [http://www.energystar.gov/index.cfm?c=cfls.cfls\\_choose\\_guide](http://www.energystar.gov/index.cfm?c=cfls.cfls_choose_guide)

Energy Star. (n.d.). What are LEDs? Retrieved from [http://www.energystar.gov/index.cfm?c=lighting.pr\\_what\\_are](http://www.energystar.gov/index.cfm?c=lighting.pr_what_are)

General Electric Company. (2010). Compact fluorescent light bulb (CFL) FAQs. Retrieved from [http://www.gelighting.com/na/home\\_lighting/ask\\_us/faq\\_compact.htm](http://www.gelighting.com/na/home_lighting/ask_us/faq_compact.htm)

Illuminating Engineering Society of North America. (1999). *IESNA lighting education: Fundamental level* [IESNA ED-100]. New York: Author.

Illuminating Engineering Society of North America. (2008). *Light and Design: A guide to designing quality lighting for people and buildings* [IES DG-18-08]. New York: Author.

Lutron Electronics Company. (2010). Top 10 energy savings benefits of light control. Retrieved from <http://www.lutron.com/Education-Training/LCE/Pages/GreenBenefits.aspx>

National Electrical Manufacturers Association. (2010). *Solid state lighting for incandescent replacement: Best practices for dimming* [LSD 49-2010]. Rosslyn, Virginia: Author.

Russell, S. (2008). *The architecture of light: Architectural lighting design concepts and techniques*. La Jolla, California: Conceptine Print Media.

U.S. Department of Energy. (2008). Future developments in LED dimming controls. Retrieved from [http://www1.eere.energy.gov/buildings/ssl/future\\_controls.html](http://www1.eere.energy.gov/buildings/ssl/future_controls.html)

U.S. Department of Energy. (2008). LED application series: Dimming LEDs. Retrieved from [http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/dimming\\_leds.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/dimming_leds.pdf)

U.S. Department of Energy. (2008). Standard dimming controls. Retrieved from [http://www1.eere.energy.gov/buildings/ssl/printable\\_versions/dimming\\_overview.html](http://www1.eere.energy.gov/buildings/ssl/printable_versions/dimming_overview.html)

U.S. Department of Energy. (2008). *Using light-emitting diodes: Changes in color and efficacy with dimming*. Retrieved from [http://www1.eere.energy.gov/buildings/ssl/dimming\\_changes.html](http://www1.eere.energy.gov/buildings/ssl/dimming_changes.html)

U.S. Department of Energy. (2009). Using light-emitting diodes: Will LEDs solve the dimming problem? Retrieved from [http://www1.eere.energy.gov/buildings/ssl/dimming\\_problem.html](http://www1.eere.energy.gov/buildings/ssl/dimming_problem.html)

Whitehead, R. (2009). *Residential lighting: A practical guide to beautiful and sustainable design* (2nd Ed.). New Jersey: John Wiley & Sons.

Winchip, S. M. (2007). *Sustainable design for interior environments*. New York: Fairchild Books.

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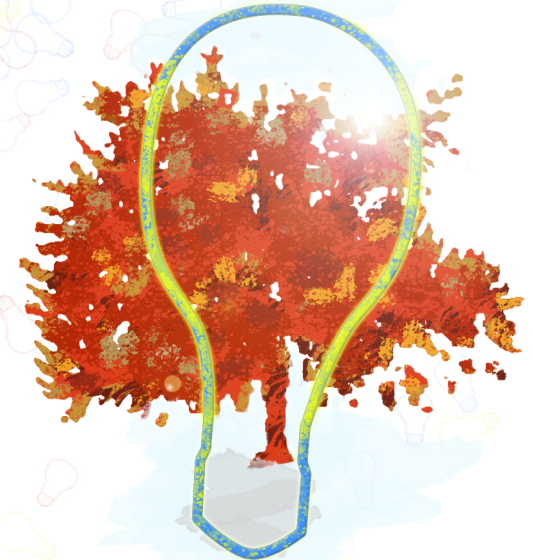
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# Selecting lighting dimmers for your home

CHOOSING DIMMERS IS  
AN IMPORTANT DECISION.



*you*  
can make

Appropriate & Sustainable  
dimming choices!

## Important Information: *Dimming reduces the amount of light produced and energy consumed.*


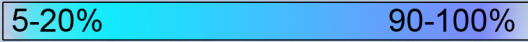

### Purchasing

- To make certain that you are purchasing a quality product, choose products with the Energy Star® logo.
- Be sure to purchase bulbs and dimmers from a reputable manufacturer. Some dimmers may hum, buzz, or cause interference. This is less likely with dimmers manufactured by reputable companies.
- Portable (plug-in) dimming devices have no installation cost. For example, a table lamp may be plugged into a portable dimmer device.
- Dimmers for some light sources may need a special device called a driver.
- Some dimmers may require you to push the dimmer or slide it to the lowest position to turn it off completely.
- Remember! Dimming technology continues to develop. Dimmers are upgraded, just like computers and phones.
- See our fact sheet about Safe & Sustainable Lighting for more information on choosing the right bulb.

## When Thinking of Dimming Effects,

### *Consider...*

- ▶ Color: How will the the color of the light change when dimmed?
- ▶ Range: How evenly will the dimmer dim light from high to low?

	Incandescents	CFLs	LEDs
<b>Color of Light:</b>	Becomes warmer, yellow to more orange to more red	Not as much change as when dimming incandescents	May become more blue
<b>Dimming Range:</b>	 0% 100% Very smooth transition.	 5-20% 90-100% Exact range varies.	 10% 100% Dimmed LEDs do not flicker.

## When Thinking of Dimming Costs,

### *Consider...*

- ▶ Initial Cost: How much will the dimmer cost to purchase?
- ▶ Installation Cost: How much will the wiring and electrician cost?
- ▶ Dimmer Lifespan: How often will you have to replace the dimmer?
- ▶ Energy Savings: How much energy will the dimmer save?

	Incandescents	CFLs	LEDs
<b>Ease of Install:</b>	Very easy	Varies; Easy to more difficult	Difficult
<b>Initial Cost:</b>	Inexpensive... It could be as easy as replacing a switch with an incandescent dimmer	Expensive... Must use a dimmable bulb, ballast, and special dimmer	Expensive... Must use a compatible bulb (diode cluster), driver, and may need a special dimmer
<b>Energy Savings:</b>	Varies; Potentially high	Varies; Potentially high	Varies; Potentially very high
<b>Bulb Life:</b>	2 to 4 times more than non-dimmed	1 to 1.66 times more than non-dimmed	Potentially longer than non-dimmed; LED technology is changing rapidly.

**Caution:** Read all bulb, dimmer, ballast, and driver packages very carefully. Some CFLs and LEDs are not made for dimming.

**Before You Buy:** Some manufacturers publish lists of compatible components. Consult with an electrician, who can advise you about planning and can provide dimmer installation, comply with electrical codes in your area, and make certain that your lighting system is compatible and safe.