

Lighting Options

Approximately 95% of the energy output of a standard incandescent light bulb is given off as heat, while only 5% is given off as light. What are the other options out there?

CFLs: Compact Fluorescent Light Bulbs are a smaller version of the fluorescent tubes everyone is familiar with.

- Use 50 – 80% less energy than incandescent bulbs
- Last up to 10 times longer than incandescents
- Replacing one incandescent with one CFL will reduce CO2 emissions by 700 - 1,000 lbs. over its lifetime
- Can be installed into a standard socket
- Use the “15 minute rule” - the life of the bulb is decreased when a CFL is frequently turned on and off. If you're leaving the room for less than 15 minutes, leave the CFL turned on.
- Can't all be used on dimmers
- Should be covered if used outdoors
- Not recommended for spotlighting
- Contain small amounts of mercury and must be disposed of properly to prevent contamination
- When choosing a CFL, compare Lumens (amount of light produced), not Watts (energy usage), to the current incandescent light bulb

LEDs: Light Emitting Diodes have generally been used in electronic clocks and panels and Christmas lights, but are making their way to the mainstream market.

- Use 50% less energy than incandescent bulbs - are becoming more efficient every year while CFLs are not⁷
- Last up to 133 times longer than incandescents and 10 times longer than CFLs – 100,000 to 1 million hrs¹
- Very durable
- Produce 96% less heat than incandescent lamps
- Replacing one incandescent with one LED will reduce CO2 emissions by over 9,000 lbs. over its lifetime (EcoLEDs brand)
- Do not contain mercury
- Not recommended for flood lighting – they don't have a “lamp”, but have a lens that focuses and directs light
- Can be used with dimmers
- Turn on instantly and don't wear down when turned on and off frequently
- The initial cost is much higher, but LEDs pay for themselves in 1-2 years

Halogen: Typically used in street lamps, but also have other applications.

- More efficient than CFLs
- Last twice as long as incandescent lamps
- Save 20% of the energy of incandescents
- Operate at slightly higher temperatures, and put out UV rays at a slightly higher rate than incandescents

Mercury

One CFL contains enough mercury to poison 7,000 gallons of fresh water, so it is important to dispose of CFLs and fluorescent tubes properly to avoid mercury poisoning or contamination. The best option is to take them to the local hazardous waste collection center. For the Des Moines area, this is located:

Regional Collection Center
1105 Prairie Drive SW
Bondurant, Iowa 50035
(515) 967-5512

www.mwatoday.com/mwa_reg.html

Look for Energy Star CFLs. These have been certified with known mercury levels, and usually have a longer lifetime.

You can also go online and order a bucket to collect your old CFLs and ship it back for recycling when it's full. Visit www.lamprecycling.com for more information.

Dimmers

Another way to increase the efficiency of your lighting is to install dimmers. Dimmers decrease the amount of energy a light bulb is using, and therefore increase the efficiency of any type of bulb you choose to use.

To get the most out of your dimmer, be sure to match the type of dimmer with the specific type of light bulb you are going to install.

Be aware that a CFL may say “dimmable” on the box, but the fine print may say “not to be used with dimmers”.

For more information:

EarthEasy – www.eartheasy.com

Sierra Club – www.sierraclub.org

National Resource Defense Council (NRDC) – www.nrdc.org

Iowa Association of Municipal Utilities – www.iamu.org

Iowa Association of Energy Efficiency – www.iowaenergy.org

Iowa Energy Center – www.energy.iastate.edu

Lighting Research Center – www.lrc.rpi.edu

Sources:

¹Eartheasy.com

²Lutron.com

³Pruitt, Amy, The Lamplighter

⁴Raver, David, RDG Planning & Design

⁵LEDProfessional.com

⁶ScienceMode.com

⁷PESWiki.com

⁸Wikipedia



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