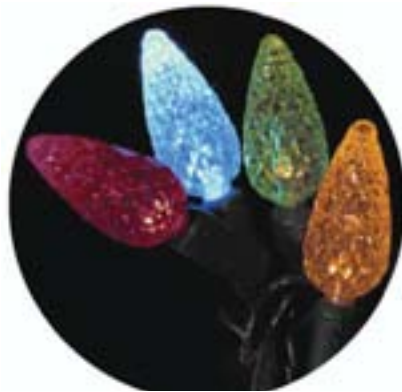




Energy Efficient Holiday Lighting

Many Americans love to decorate during the holidays with strings of lights, and most people currently use standard incandescent C7 lights or mini-lights. However, these use a significant amount of energy and regularly involve costly bulb replacement.

CVEA reminds you that there are better ways to decorate your home or business. Light Emitting Diode (LED) holiday lights and fiber optic trees are two energy-efficient technologies that can reduce your energy costs and still give your home or business the festive holiday look desire.



LED Lights

LED holiday lights are a new application for a mature technology. Each year manufacturers have improved the choices, producing bigger and brighter bulbs and new color options.

LED lights have a number of benefits over conventional lighting:

Energy Efficient– 0.04 watts per bulb; traditional mini-lights use ten times more energy and standard (C-7) bulbs use 100 times more energy.

Long Life Span– up to 100,000 hours or more if used indoors, half that outdoors, and some manufacturers provide from a 5-year to a limited lifetime warranty.

Safety – no chance of combustion from the cool temperature bulbs.

Sturdy Bulbs – the epoxy lenses are virtually indestructible.

Easily Strung – up to 20 strings can be connected end-to-end without overloading a typical household’s electrical circuit.

Lamp Replacement – if a bulb does burn out, the other bulbs will stay lit, so you can easily replace the bad bulb.

LED lights are currently available in strings from 25-150 bulbs with red, green, blue, white, yellow and multi-

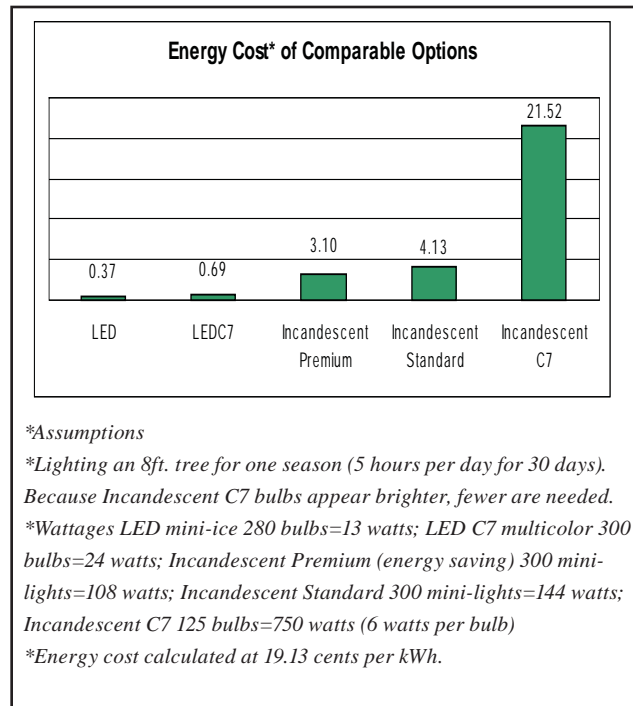
colored bulbs. There are many styles available including mini-ice, ball-shaped, and C7 and C9 (candle-shaped) bulbs.

Costs can vary by color because, rather than painted bulbs, the color is produced by the chemical make-up of the bulb. White and blue are often the most costly.

Also available are icicle-style lamps, strings that change from one color to another, strings with commercial-quality plugs that allow more than 100 strings to be connected, rope lights, and additional holiday ornaments.

Holiday lighting can add a significant cost to your November and December household power bill. With LED lighting, you can have a festive display for much less.

As illustrated on chart below, over time the cost to operate energy-consuming devices overcomes the initial purchase price.



Practice Holiday Electrical Safety This Season

CVEA would like to remind you to remember electrical safety and keep these points in mind as you decorate for this holiday season:

- Only use lights and other decorations outside that are certified for outdoor use.
- Carefully inspect each decoration before plugging into an outlet. Cracked, frayed, loose or bare wires, as well as loose connections may cause electrical shock or start a fire. Replace damaged items.
- Always unplug electrical decorations before replacing light bulbs or fuses.
- Do not mount or support light strings that might damage the cord's insulation.
- Never nail or staple light strings or extension cords.
- Do not overload extension cords – they can overheat and start a fire.
- Never use electric lights on a metallic tree. The tree can become charged with electricity from faulty lights.
- Turn off all electrical decorations before leaving home or going to bed.
- Hot bulbs can ignite dry branches and other flammable decorations. Avoid fire by keeping your natural tree well watered.
- Unplug indoor natural tree lights before watering the tree.
- When decorating outdoors, be careful with ladders! Don't stand higher than the top two steps, and keep them at least ten feet away from overhead power lines.
- Plug outdoor electric lights and decorations into circuits protected by ground fault circuit interrupters (GFCIs). Portable GFCIs can be purchased wherever electrical supplies are sold.
- Use lights and other electrical decorations certified by a recognized independent testing laboratory such as CSA, UL, or ETL.
- Keep all outdoor extension cords and light strings clear of snow and standing water.

Despite a higher initial cost, LEDs are a clear winner over incandescent C7 lights when you compare the cost to purchase and operate a system for five years (and beyond).

Fiber Optic Artificial Trees

Another relatively energy efficient tree lighting strategy is the fiber optic artificial tree. These trees use a single incandescent bulb ranging from 5 to 50 watts, depending on the size of the tree.

Light is transmitted from the single bulb through hundreds of very small fibers and emitted along each branch of the tree. Some trees come equipped with a rotating color wheel that changes the color emitted from the fibers.

Fiber optic lights are cool to the touch, as only



light is transmitted from the fiber and not heat. The incandescent light source is located in the base of the tree with ventilating holes that must not be covered.

The cost for such trees ranges from \$20 for a 2-3 foot tree to over \$200 for the largest trees. Fiber optics are also now used in many other household decorations.

A Note About Wiring

The wiring is a weak link in any system. Improperly attaching light sets with staples, winding wires around nails, and other practices can damage wiring, as can prolonged exposure to sunlight.

Treating the wiring with care will extend the life of any light set and increase safety as well. It is also recommended that you test the system and inspect the wires for defects before putting up your lights.

For current news, purchasing sources, and safety considerations, visit www.energyideas.org/holiday.