

EASY\$ TIP SHEETS

Energy Advice Saving Yukoners Money

Quick Links

[Seasonal Light Emitting Diodes](#)

[Traditional incandescents](#)

[LED Rope or flexible lighting](#)

[Fibre optic cabling](#)

[Safety tips for outdoor lights](#)

Lighting for the Holiday Season

Holiday season lights can be both bright and energy-efficient and can often replace the need for regular porch or yard lighting over the holiday season. Choosing the appropriate holiday lights and lighting controls will ensure your display is as energy-efficient as possible.

Timers and photocells can also save you energy and money by automatically turning lights on at dusk and turning them off at a scheduled time. Be sure the timer is designed for the required amount of wattage.

Seasonal light emitting diodes

Seasonal LED strings are available for sale through many retailers. These energy-efficient light strings are superior to standard incandescent light strings in that they:

- use up to 95% less energy (a string of 70 lights can use as little as 2 watts);
- last up to 7 times longer;
- are more durable, with no filaments or glass bulbs to break; and
- produce very little heat, reducing the risk of fire.

Goal and Summary

Choosing the most appropriate holiday lights to decorate your house can add up to big energy savings over the course of the season. Consider seasonal light emitting diodes (LED), LED rope lighting or fibre optic cabling if purchasing new seasonal lights this year. This Easy\$ tip sheet describes lighting options to help you enjoy the variety of effects, and savings.

Safety tips for your tree

- Keep your tree at least three feet away from heat vents, baseboards and fireplaces.
- Secure your tree so pets and children cannot knock it over.
- Do not use outdoor lights inside, as they burn hotter and can pose a fire hazard.
- Replace broken bulbs and light sets that have cracked or corroded sockets, frayed plugs, bare wires or loose connections.

Real trees

- Keep your tree fresh by sawing off an inch or two from the trunk base at an angle. Immediately place the tree in a water-filled, no-tip stand and regularly check to make sure the tree stand always has plenty of water.
- Unplug lights before watering the tree.
- Keep cords and light sets away from the water.
- Keep a fire extinguisher handy and your smoke detectors in good working order.

Artificial trees

- Make sure your artificial tree is not flammable.
- Keep metallic trees away from electrical cords or plugs.
- Do not use electric lights on metallic trees.

The energy cost of operating one of these strings is therefore a fraction of the cost of conventional holiday lights. When purchasing seasonal LED lighting, look for a product that carries at least a two year warranty.

Traditional incandescent lighting

Traditional screw socket bulbs use either 5 or 7 watts per bulb. With 25 lights per string, that translates to a lot of power — between 125 to 175 watts per string. And unfortunately, most of that energy is wasted. Less than 10% of the power used by an incandescent bulb goes into creating light — the rest is lost as heat. With 5 strings of traditional lights generating as much heat as a small baseboard heater, it's easy to see why they can be a fire hazard on a dry tree. Incandescent bulbs are also expensive to replace, and must be replaced often. Many people find it less expensive to buy whole new strings rather than buy the replacement bulbs. If you are planning on purchasing this type of light, 5 watt bulbs rather than 7 watt will reduce your operating costs by 30%.

LED Rope or flexible lighting

LED Rope or flexible lighting consists of miniature LED lights encased in flexible plastic tubing about 1/2" in diameter. Spaced about 1" apart, the bulbs use approximately 0.067 watts of power or 0.8 watts per foot (compared to 0.5 watts of power — or 5 watts per foot for Incandescent rope lighting) — and are rated to last over 20,000 hours. Available for indoor or outdoor use the bulbs and tubing come in several different colours, and are well suited for decorations or feature illumination.

Fibre optic cabling

Artificial trees that use built-in fibre optic cabling to send light throughout the tree from a single incandescent bulb are gaining in popularity. The heat generated from the single bulb — generally between 5 and 20 watts — is minimal, and branches where hundreds of tiny fibres distribute the light, are cool to the touch. Many trees come with rotating colour wheels that change the colour emitted by the fibres.

Safety tips for outdoor lights

- Use CSA-approved lights, cords, plugs and sockets that are marked for outdoor use or wet locations.
- Avoid using extension cords by installing a separate weatherproof circuit for holiday lighting. Place the circuit under the eaves, with a switch at your door.
- Make sure outdoor circuits are equipped with an approved, weather-proof ground fault circuit interrupter.
- Ensure the circuit breakers and fuses on your holiday lights circuit are no larger than 15 amperes.
- Don't overload circuits. Have no more than 1400 watts on a circuit. If other lights in the house dim when the holiday lighting is turned on

or the plug is very hot when unplugged, your circuit is overloaded. To figure out a circuit's load, multiply the number of bulbs by the watts per bulb, and add any lamps, appliances or other equipment on the same circuit.

- Before you put light strings on a shrub, tree, or your house, check for breaks or signs of insulation deterioration. Frayed cords or loose connections indicate that the wiring is poor. Replace any defective sets.
- Never install lights with the power on. Test lights first, then unplug to install.
- Keep electrical connections off the ground. Use eave clips or insulated staples, rather than nails and tacks, to hold light strings in place.
- Keep wiring clear of metal parts such as ornamental railings and drainpipes, to prevent any risk of shock from an electrical current.
- Do not leave any light sockets empty if you want sections in your light string unlit. This can create a fire hazard, or could be fatal if someone touches the inside of the empty socket. Instead place a burned-out bulb in the socket. This will not affect the other lights on the string.
- Be sure to turn off your holiday lights before going to bed, and never leave lights on when you are away from home, unless they are connected to a timer with a photocell.
- Don't leave your outdoor lights up year-round. Cords and bulbs will deteriorate, reducing their safety and shortening their life.

This Easy\$ tip sheet is provided by the Energy Solutions Centre.

If you have additional questions or comments, please contact the Energy Solutions Centre:

Phone: (867) 393-7063 or toll-free from the communities at 1-800-661-0408 ext. 7063

Mail: Box 2703 (EMR-206),
Whitehorse, Yukon Y1A 2C6

Web: www.esc.gov.yk.ca

