

Electric Space Heating

Space heaters may reduce your bill, but only if the homeowner is willing to tune down their whole house thermostat.

by Michael Lynch

MANY ELECTRIC SPACE HEATERS ADVERTISE THAT they can slash your electric bill in half, but what they don't advertise is that they can also cause that bill to increase significantly.

Whether it's a standard electric space heater you see at the discount store or an infrared model advertised in a newspaper flyer, the thing you need to be concerned about is how much power the unit consumes.

In recent months, homes have been flooded with ads about heaters claiming to heat homes at half the price of conventional methods. These heavily-marketed "new" heaters cost upwards of \$400 and radio ads brag they "can pay for themselves in weeks." However, before consumers rush to their phones with credit cards in hand, it is wise to compare and evaluate the true output and ultimate cost of the advertised heaters against other heating units.

Portable electric heaters fall into three categories. The first design is high-temperature radiant. This style is easily recognized by its glowing-red heating elements and a shiny, mirrored reflector behind the coils. These heaters

do not heat the air in the room, but rather radiate warmth across the area to objects or people.

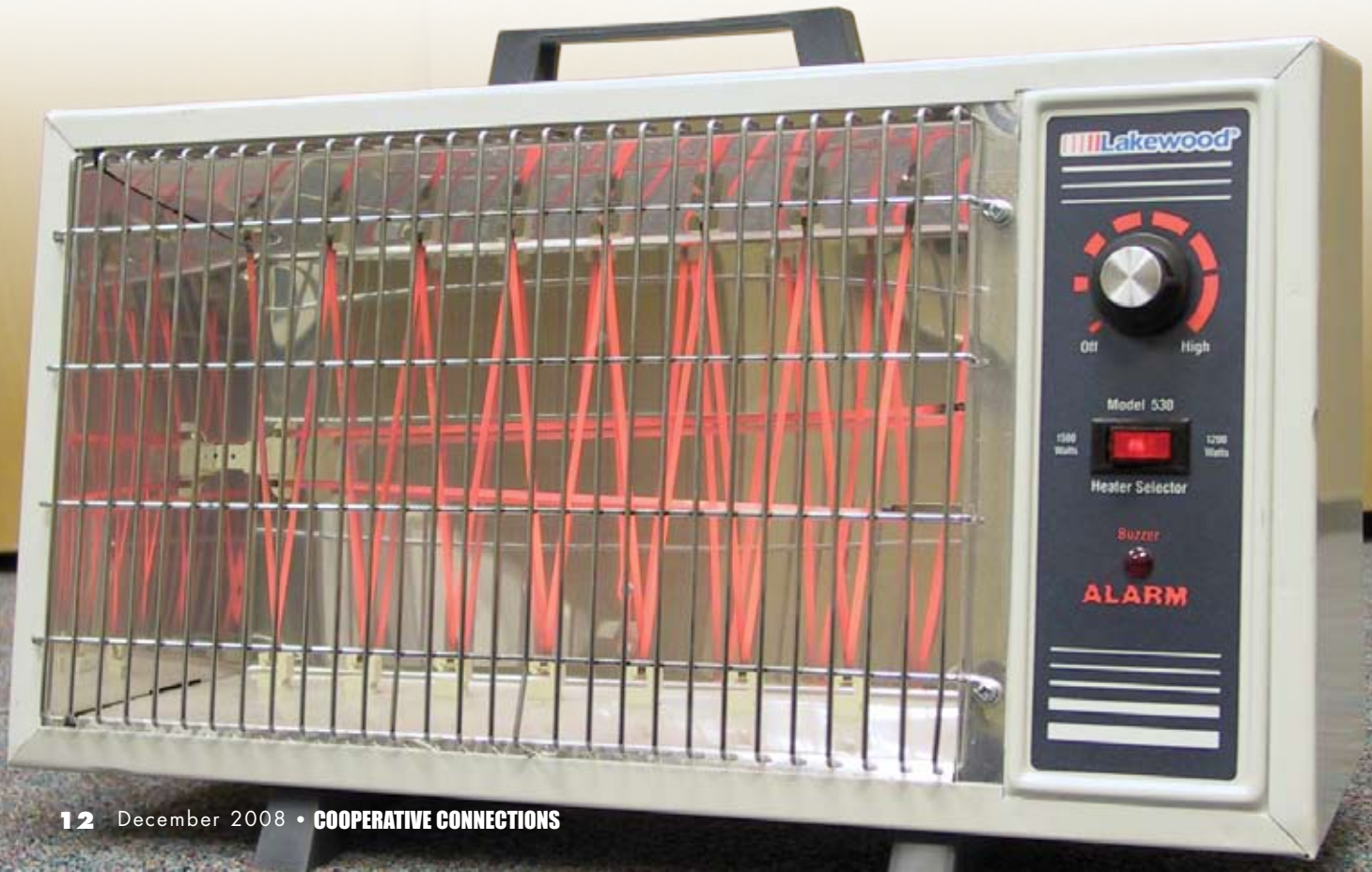
The second style, natural convection, distributes the same amount of heat over a wider surface of the heater allowing the flow of air over the surface, transferring heat to the air.

The last category of space heaters is fan-forced, where a blower pushes air over the heating coils. These heaters warm the air in the room to increase comfort.

Using an electric space heater requires certain precautions to enhance safety.

"Homeowners will want to make sure their circuit can handle the added load. Also, make sure fuses or breakers are properly sized," said Ken Schlimgen, member services manager at Central Electric Cooperative in Mitchell, S.D.

Schlimgen says to avoid using extension cords if possible, but if necessary, ensure the wire size is heavy enough to handle the amperage requirements of your heater. You can find this by dividing the heater's wattage by 120. (A 1,500-watt heater would need at least a 12-gauge extension cord – the lower the number the better.)



Also, look for heaters that have an automatic shut-off device if the unit overheats and a tip-over switch to disable operation should the heater tip over.

Finally, look for Underwriter's Laboratory (UL) approved heaters. Units with this designation meet voluntary safety standards.

The Cooperative Research Network (CRN) noted that all electric space heaters (also called "resistance heating" because electricity passes through a component that resists the flow of electric current) can save money on heating bills if properly used in specific applications.

Calculating the actual cost of operating a space heater is relatively easy. For example, a 1,500-watt unit running for one hour at the national average rate of 12 cents per kwh will cost 18 cents. While this does not seem like a lot of money, applied over a 24-hour period, the operational costs rise to \$4.32. Over a one-month period, that equals nearly \$130.

"Space heaters may reduce your bill, but only if the homeowner is willing to turn down their whole house thermostat," Schlimgen said. With this zone-heating strategy, the central thermostat is lowered and a smaller heater is used for occupied rooms to increase the comfort level. The effectiveness of this strategy however, depends on the home's design. An open floor plan can be difficult to divide or close off certain areas.

"For a short period of time, space heaters can make a small area comfortable, but you need to be careful how much

they are used and where they are located," cautioned Roger Wubbena, applications specialist at East River Electric Power Cooperative in Madison, S.D. "Consumers also need to figure how long it will take to recoup the purchase price of the heater. Despite some energy savings, it can be difficult to make up the investment for a \$400 heater."

Ads for some infrared heaters claim homeowners can lower their thermostat to 50 degrees because the units use less energy to create heat than other sources. However, Schlimgen says this is untrue.

"It doesn't matter where you buy an electric space heater; they all exert the same amount of heat and consume the same amount of energy," said Schlimgen. In other words, a 1,500 watt infrared heater priced at \$400 would produce the same amount of warmth as a 1,500-watt heater costing \$40 at your local hardware store because, as far as your meter is concerned, a watt is a watt. All portable electric space heaters produce 100 percent efficiency due to the amount of heat coming out equaling the amount of electricity going in.

A distinct disadvantage of a plug in heater is that it will not be able to take advantage of special heat rates. Many cooperatives offer special heat rates for heating systems that are measured through a secondary heat meter rather than the home's main electric meter.

Portable electric space heaters can be an excellent way to provide spot heating for a limited amount of time. But, for consumers looking to substantially lower their heating bill, other methods are a better investment. Stopping energy leaks by using caulk, insulation or weather-stripping, installing a more efficient heating system or even installing energy efficient windows prove to be a better alternative.

Remember the old adage, if an advertisement appears too good to be true, it probably is.

Left: No matter where purchased, an electric space heater exports the same amount of heat and consumes the same amount of electricity. While they can be an excellent way to provide spot heating for a limited amount of time, consumers looking to substantially lower their heating bill may want to consider other methods, such as stopping energy leaks. Greg Brooks, Walton EMC

Space Heater Comparisons

TYPE OF HEATER	PROS	CONS	ESTIMATED COST
High Temperature Radiant	Beam warmth directly to people or objects Can provide spot heating Silent heating	Can be large and bulky No fan to circulate air Heat can be wasted on walls/ceiling	\$50-\$400
Natural Convection	No moving parts increases safety and reliability Silent heating Good choice when wanting to use for long periods of time	No fan to circulate air Takes longer to heat a room Heat quickly dissipates when unit is off	\$60-\$80
Fan-Forced	Can be very compact and inexpensive Fast heating Good heat distribution	Fan failure could cause unit to overheat Objects placed near heater could block airflow and cause overheating Could cause room to feel drafty	\$25-\$150