

## Zonal heating to save energy

Any of the three portable heater types described can be used in a home to allow room-by-room variation in temperature. Known as zonal heating, this method can save energy, but only if you lower the setting on the home's central heating thermostat. Then in the occupied room(s), a space heater is used to boost the temperature to a comfortable level. Unused areas of a home must remain at a lower temperature (at least 68 0 F. or less) to achieve any savings.

Of the three styles described above, fan-forced heaters will have the shortest "recovery time" to add heat back to the room. Even so, it will take at least an hour to warm the room and all its contents; even more if the room is large and the temperature was lowered several degrees.

## Furniture or a heater?

As a final consideration, there are a select few heaters that are available in an attractive hardwood cabinet. This fan-forced style sits on the floor and can serve also as a lamp stand or coffee table. They are much more expensive than standard space heaters, and offer no advantage in efficiency. Therefore the consumer must decide if they are shopping for a piece of furniture that will remain in place year-round, or simply for a portable heat source. This also applies to heaters in the form of a fireplace. If the buyer is looking for a heater that will match other furniture in the home, be prepared to pay more.

## Summary

Using a portable electric heater to add warmth in your home or work area can do wonders to increase comfort. Before buying, become familiar with the limitations and advantages of each style of heater. These differences are not about efficiency, but about the method used to transfer warmth to the user. All electric heaters have the same efficiency - 100 percent. There are no losses in the process known as electric resistance heating.

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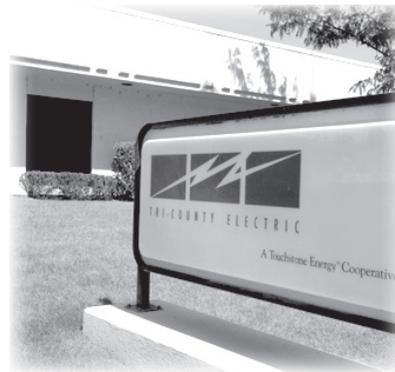
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## CHOOSING AND USING THE RIGHT ELECTRIC HEATER



High-Temp  
Radiant



Natural  
Convection



Fan-Forced

*The Power of Community*



## See through the marketing

This brochure can help you see through the marketing claims of a few heater advertisers who tout their “space-age design” that is supposed to out-perform other electric heaters. Some even claim they “save big money” on your energy bills.

## Efficiency is the same 100% for all electric heaters

All electric heaters use the same method to change electricity into heat. They all have the same efficiency - 100 percent. There are no losses. Whatever the heater’s shape, size or marketing claims, the amount of heat coming out is determined by the amount of electricity going in. This is listed in watts on the nameplate. Therefore, any two heaters with a rating of 1,500 watts on the nameplate will deliver the same amount of heat, no matter what they look like. (Some energy may be used to power a small fan, but this is insignificant for portable-size heaters).

Electric heaters differ in three primary ways in how heat is transferred to the person to be warmed. When choosing a heater, determine which type is best for how and where you will use it as each has its strong points.

## Three main designs

### High-Temperature Radiant

High-temperature radiant electric heaters are characterized by easily visible heating elements, with a shiny reflector behind them. The glowing elements can be either metal coils, wires or a quartz material. Radiant heaters don’t attempt to heat the air, but rely on “beaming” their warmth directly to people or objects in front of them.



Radiant heaters can be a good choice, but only if you understand their strong points and their

limitations. Unlike space heaters which must warm the surrounding air before you feel comfortable, a radiant heater delivers heat instantly to objects in its path. Much like a fan won’t keep you cool unless you are standing in its airflow path, a radiant heater won’t do you much good if you’re not within reach of its warming rays.

For example, a radiant heater works well for those sitting down where the distance between you and the heater will not change. But if you will be moving about, a radiant heater can’t keep you warm if you are beyond its reach. Once the distance exceeds four to five feet for a 1,500 watt unit, the heat will dissipate into the room and you will be at the mercy of the surrounding air temperature.

### Natural Convection

Often seen in a long slender baseboard design, natural convection electric heaters are warm to the touch but not hot enough to burn you. These heaters use the flow of air over their surface (natural convection) to transfer warmth from the heater to the air. Instead of using glowing coils like radiant heaters, convective heaters rely on a much larger surface area in contact with the air. As the air becomes heated, it rises and is replaced by cooler air from the room, creating a cycle of air flow.



On a watt-for-watt equivalent, natural convection heaters put out just as much warmth, but you don’t feel the intense heat as from a radiant design.

The lower surface temperature of convective heaters is an advantage for many applications. The heater can be placed in a room with small children without the fear of accidental burns. This also allows it to be located closer to furniture or near window curtains without the hazard of fire.

### Fan-Forced Heaters

This style is characterized by the use of a fan to push air over the heating coils and into the room. They operate in much the same way as a home’s central furnace. But these “mini furnaces” are commonly rated at 1,500 watts, so they can only warm a modest size room.



Unlike natural convection heaters, this design doesn’t rely on a large surface area to transfer its heat to the air. That is why fan-forced heaters are often smaller in size than other designs.

Fan-forced heaters can deliver a constant flow of hot air, but consider how the fan’s noise will affect your application. If used near an office desk, it could be distracting. At home, it may interfere with the TV’s sound.

A clarification about fans -- some other styles of heaters (like radiant) sometimes use a small fan inside to circulate the air. Don’t let the presence of this small fan fool you; if most of the heat is transferred by radiant energy from the visible coils, it’s a radiant heater.

## Consider safety features

For all three types of heaters, safety features are an important purchase consideration. This is particularly true when used in a garage or outbuilding where combustibles are nearby. A tip-over switch that automatically cuts power is a must, especially on taller upright heaters that might tip more easily. Also, look for sturdy screens or grills that cover the heating elements and keep objects out.

Avoid using an extension cord with an electric heater. If the wire size on an extension cord is smaller than the circuit wires in the wall, this creates a hazard. The smaller cord conductors are not protected by the fuse or circuit breaker in the wall, so they could become overloaded and create a fire.