What is infrared?

Infrared is electromagnetic wave energy. Like light, infrared (radiant) energy travels at the speed of light in a straight line until it strikes an object.

A gas fired infrared tube heater or high intensity heater (normally ceiling suspended) emulates that warmth of the sun by generating radiant energy that converts to useable heat when absorbed by objects in its path. In buildings, objects such as floors, tools and machinery absorb the infra-red radiant energy. This creates a "heat sink" where warmth is stored and re-radiated to warm the surrounding air.

It is not unusual to generate fuel savings of 40% or more compared to forced air heating methods such as unit heaters. In high bay structures, forced air heaters are impractical because warm convective air rises to the ceiling, leaving floors relatively cold. In fact, warm air must stratify from the ceiling downward to keep people warm at the floor level. Consequently, building owners find that their forced air heaters run almost continually, only to find an outrageous monthly fuel bill. By contrast, infrared heaters emit quiet radiant energy to the floors, which absorb and re-radiate heat from the ground up. This translates to warm, comfortable conditions at the people zone and less wasted convective heat at the ceiling. In immense structures such as warehouses and aircraft hangars, or infrared heat is the only practical choice for creature comfort and energy savings.

Infrared heaters do get hot, so proper mounting distances and clearance requirements must be met. However, there are no harmful effects from the radiant heat energy. Unlike the sun, infra-red heaters do not produce ultra-violet rays, only comfortable radiant warmth, like standing by a fireplace or stove.

Every infrared heater manufacturer will say different things about why they feel their product is the best. You may need to sift through the garbage to find out for yourself what makes one appliance brand better than another. Most high intensity infrared heater brands have few differences in performance. The same cannot be said for infra-red radiant tube heaters.

We suggest looking at the criteria specifiers use to determine performance and reliability. These criteria are:

1) Reflector design (the most important factor in radiant efficiency)
2) Control box design (controls should be isolated out of the air stream)
3) Serviceability (easy control access and easy to diagnose problems)
4) Burner design (effects heat uniformity)
5) Emitter tubing (hot rolled? aluminized? heat-treated aluminized?)
6) Couplings (connects the radiant tubes together - how good are they?
7) Local representation (who will be available for service, parts, design help, warranty and other issues into the future?)

See Why Choose Superior Radiant to get our take on why we feel Superior Radiant tube heaters are bar none the best in the industry.

There are no published CSA standards used by any of the infra-red tube heater manufacturers for determining the efficiency of an infra-red tube heating system. With tube heaters, what matters most is how well the heater converts its usable infra-red energy into heat at the floor level (click on the above link to learn more about the importance of reflector design). Note however that all high intensity infra-red heaters are basically 99.9% efficient because they are vent free, the only differences being in the quality of the appliance.

If you search around our site, you'll find many other heater options. Infrared is usually the best choice for high bay open commercial structures such as service garages, aircraft hangars, warehouses, manufacturing plants, etc. However, we have other energy saving products such as our popular Rinnai or Eskebe direct vent wall furnaces - the best choice for condos, apartments, sunrooms, additions, etc. Some people would rather have a forced air unit heater in their garage, rather than infra-red. We offer heaters and solutions for just about any situation.

We're here to help. Call us and we'll do our best to propose the heater or system best suited to your needs. We specialize in what you see on this site.