GENERAL INFORMATION

The major benefit of infrared heating is its ability to transfer heat to a person or object without heating the surrounding air.

As an example, a person doing heavy work requires an air temperature of 66-68°F to maintain the feeling of warmth, but to provide the same feeling of warmth with infrared heating requires an air temperature of only 55-60°F.

Type of Work	Normal Air Temperature	Equivalent Temperature with Infrared Heating
Heavy Work	66-68°F	55-60°F
Light Work	70-72°F	60-65°F
Seated	74-76°F	65-70°F
Swimming Pool	85-90°F	75-80°F

DANGER-HAZARD OF FIRE - AVOID DIRECT CONTACT OF HEATER CASE WITH ANY COMBUSTIBLE SURFACES. ENERGIZED HEATERS SHOULD BE SPACED SO THAT NO COMBUSTIBLE SURFACES EXCEED 194°F (90°C). SEE INSTALLATION INSTRUCTIONS.

FEATURES

Reznor electric infrared heaters are available in a wide variety of fixtures with a choice of metal sheathed (type C), quartz tube (type QT), or quartz lamp (type QL) heating elements. Quartz lamp heaters are more efficient than quartz tube heaters which are in turn more efficient than metal tube heaters.

Where vibration or mechanical shock risk exists, do not use quartz tube or quartz lamp heaters. Use metal sheathed heaters in these instances. Terminal ends must be protected from severe moisture or contaminating vapours. Use heaters with moisture resistant terminal housings (pages 22 and 25) in these environments.

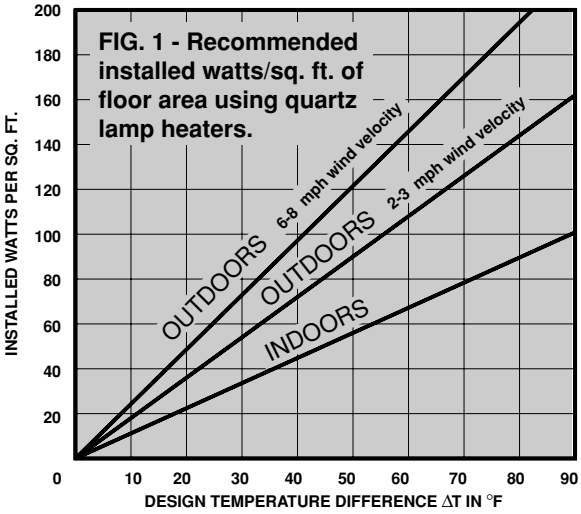
Two fixture types are available. The deep reflector type gives better radiation at greater than normal mounting height.

LIFE EXPECTANCY

The normal life expectancy of a radiant heater depends, in part, on heater watt density and operating conditions. Applications characterized by high ambient temperatures or frequent switching are the most demanding. Note that the heaters are warranted only for defects in material and workmanship. Estimates of life expectancy for a particular application are available on request.

APPLICATION

In general, the application of infrared heaters is complex and allowances must be made for in-field adjustments to output intensity and heater positioning.



Space heating applications are reasonably straight forward. Pay close attention to the energy spread to achieve maximum utilization.

For process heating applications, it may be necessary to run a series of tests to establish the most satisfactory heating method. Your Reznor sales representative can help you to achieve the best results.

ENERGY SPREAD

Use the table below to determine the effective energy spread for the 45°, 60° and 70° fixtures. Proper application of this information will help in establishing an efficient layout for uniform infrared coverage of the product or space.

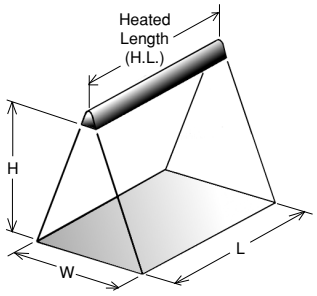


TABLE 1 - RADIANT COVERAGE AT VARIOUS HEIGHTS

SPREAD*	WIDTH (W)	LENGTH (L)
45°	.83H	H + H.L.*
60°	1.15H	"
70°	1.4H	"

* SEE LISTINGS FOR H.L. (HEATED LENGTH)

SELECTION

APPLICATION	Incoloy Tubular Element	Quartz Tube Element	Quartz Lamp Element
COMFORT HEATING APPLICATION			
Arenas	✔		
Assembly areas	✔		✔
Auditoriums	✔	✔	✔
Bathrooms		✔	
Booth	✔	✔	
Bowling alleys	✔	✔	✔
Brooders for chickens, etc.	✔	✔	
Building entrances	✔		✔
Bus stations and shelters	✔	✔	✔
Car washes especially coin operated	✔		✔
Churches (especially rural)	✔	✔	
Drive-ins (restaurants, banks, etc.)	✔	✔	✔
Entrances			✔
Exhibition halls	✔		✔
Factories	✔		✔
Farm animals	✔		✔
Farm sheds	✔	✔	
Garages	✔		✔
Gatehouses	✔		✔
Grandstands			✔
Gymnasiums	✔		✔
Hangars	✔		✔
Hospital emergency entrances			✔
Hotel entrances	✔		✔
Loading platforms			✔
Milk parlours	✔	✔	
Outdoor cafes		✔	✔
Skating shelters	✔		
Ski chalets	✔		
Snow melting (refer to factory)			✔
Spot heating, indoors	✔	✔	✔
Spot heating, outdoors	✔		✔
Stadiums			✔
Subway stations	✔		✔
PROCESS HEATING APPLICATIONS			
Baking (curing) paint on metal	✔	✔	
Baking (curing) paint on plastic or wood		✔	✔
Baking cakes, etc			✔
Blanching vegetables			✔
Boosting temperature in existing ovens	✔		
Broiling chickens, etc.			✔
Conveyorized systems	✔	✔	✔
Curing concrete	✔		✔
Dehydrating	✔		✔
Drying abrasive powder	✔		
Drying concentrates	✔		
Drying gum on powder (e.g. envelopes and textiles)			✔
Drying paint on textiles - heavy	✔	✔	✔
Drying paint on textiles - light		✔	✔
Drying paint or print on paper, plastic		✔	✔
Drying soil, clay, sand, etc.	✔		
Frit drying in ceramic processes	✔		
Ice-prevention in chutes, hoppers, etc.	✔		
Melting snow (in dump sites, etc.) refer to factory			✔
Mirror coatings	✔		
Paper machinery			✔
Peeling apples, etc.			✔
Preheating metal prior to welding	✔		
Silk screen drying			✔
Thawing frozen ore or coal in railroad cars for easier dumping	✔		✔
Thawing ice			✔
Thawing soil			✔
Vacuum forming	✔		

CONTROL OPTIONS

PERCENTAGE TIMERS

Percentage timers (input controllers) are used mainly for pulsing power to metal tubular element type radiant heaters. Where load voltage and current ratings exceed the timer's contact rating, the timer can be used to switch a contactor(s). Percentage timers can not be effectively used on quartz lamp type radiant heaters and have restricted use on quartz tube type heaters.

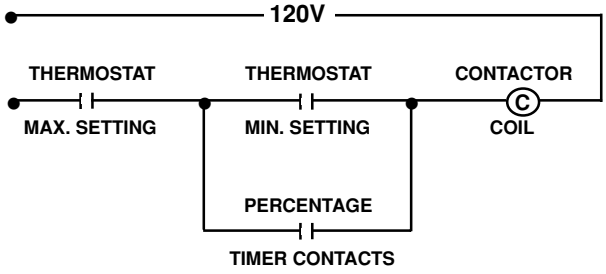
The percentage timer features a synchronous motor driven cam which closes a snap action switch for a percentage of 30 second "on" time. The adjustment knob sets the pointer to an "on" time of 0 to 100%. For instance, a timer set to 50% (mid scale) would allow full voltage to the heater(s) for 15 seconds and no voltage for 15 seconds thus reducing the average heat output. Standard features include a plug-in style mounting, an electrically isolated pilot light and a cycle progress pointer. Check factory for details on ordering.

THERMOSTATIC CONTROL

Thermostatic control is used primarily for indoor applications and consists of an indoor thermostat, or an indoor thermostat combined with an outdoor thermostat. Rooms heated with infrared heaters can normally be maintained at lower temperatures and still be in the comfort range.

Thermostats should be located in the area to be heated but not directly exposed to the heater beam pattern. Thermostats may be shielded by placing a reflective cover over top.

Thermostatic controls can be used in conjunction with a percentage timer for cost efficient space heating. Two thermostats (or one two stage thermostat) are required.



In the above circuit, one thermostat is set at the maximum required room temperature and one is set at the minimum desired room temperature. The input controller is adjusted to provide modulated infrared heat when the space temperature is between the above limits.

STEP AND CONTINUOUS CONTROL

Larger installations may require custom control panels for more sophisticated zone control using staging and SCRs. Consult your nearest Reznor representative to aid you in selecting the proper type of control for your individual requirements.