

SELECT THE RIGHT EQUIPMENT FOR THE JOB



Ceramic Emitter

Blasdel Enterprises is continually discovering new applications for infrared technology and determining which emitters are best suited for the situation. Even when the wavelength is the same, the physical material design of the emitter can affect the way in which heat is delivered to the product.

BEI specializes in applications requiring medium wave technology. Primary emitters are ceramic emitters, COR emitters and ceramic panel heaters. Quartz tube heaters are used when heating narrow or selected areas of a product.

CERAMIC EMITTER

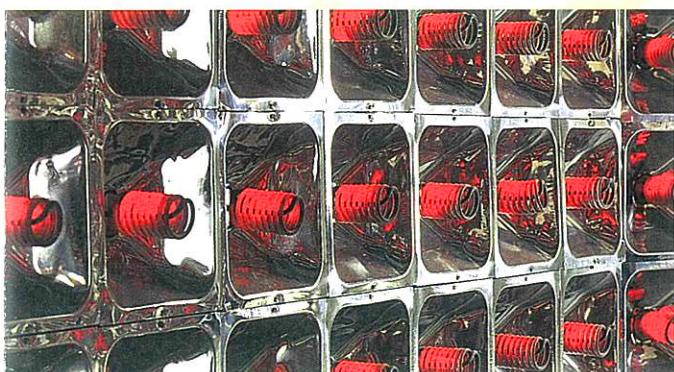
Ceramic emitters are ideal for wood, plastic, and other low temperature substrates. The durable nichrome wire wound around a ceramic core is embedded in a ceramic material and fired in a kiln. These elements, controlled by a Blasdel control panel, can maintain a very even temperature. Full temperature can be attained within five minutes from start-up.

COR EMITTERS

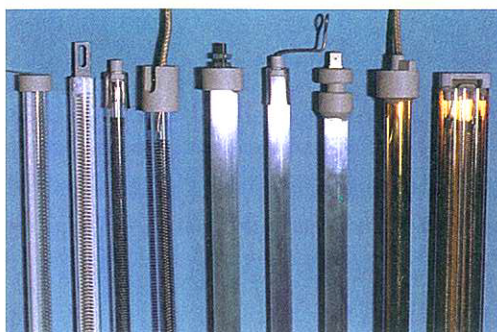
COR emitters are best suited to powder coating, baked liquid coatings, moisture dry-off, softening plastics, compression molding or vacuum forming, degreasing, and paint on plastics, where higher temperatures are required or where cleanliness is critical. Fast start-up, within three minutes, is possible with the COR emitter. Properly controlled, the desired temperature can be accurately maintained.

QUARTZ TUBE EMITTERS

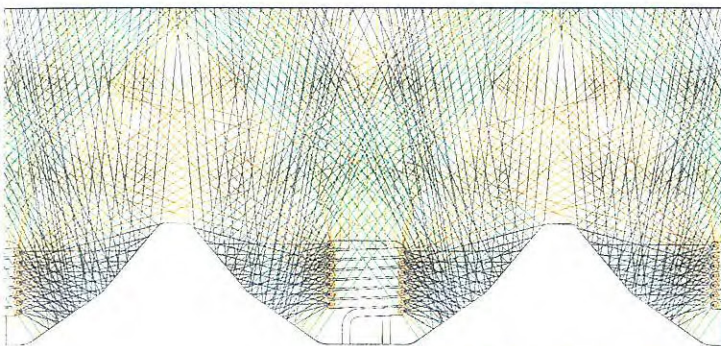
When a fast response is required, medium wave quartz tube emitters are an excellent choice. Generally quartz tube emitters are controlled with SCR or SSR devices such that they are always on to avoid thermal shock to the element but the voltage is modified to change the output of heat. Watt densities can be up to 60 watts/lineal inch. A variety of connectors are available according to the application and environment in which they will be used. Quartz tube emitters have an internal reflector as well as a secondary external reflector. The secondary reflector can focus the infrared heat to a very narrow area while the remainder of the product is virtually unaffected. Average life expectancy of a quartz tube emitter is about 10,000 hours.



COR Emitter



Quartz Tube Emitters



Heat distribution of Blasdel Reflectors
 — DIRECT HEAT
 — CONVECTIVE HEAT
 — RADIATED HEAT

REFLECTORS

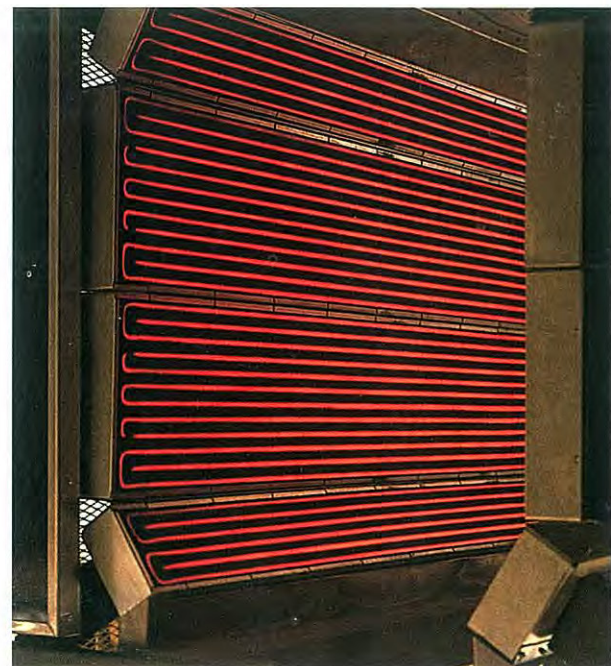
Blasdel reflectors are the key to heating three dimensional objects, producing uniform heat patterns, and promoting maximum energy efficiency. The square design with complex angles results in a square pattern of heat distribution with the emitter 8" to 12" away from the product. This eliminates hot and cold spots commonly found in round or trough shaped reflectors.

The emitter is located in front of the reflector so there is no need for insulating material in the back of the housing. We use solid aluminum reflectors that have been buffed to a high polished finish. Polished aluminum is significantly more reflective than stainless steel which results in a more efficient oven. Disposable aluminum reflectors are also available for simple maintenance or in specialized applications.

CERAMIC PANEL HEATERS

The ceramic panel heater may be constructed with extremely high watt density. The resistance wire is embedded in a quartz plate and then covered with a quartz cloth. Control is achieved by monitoring the internal temperature of the heater with a thermocouple. The ceramic panel heater also requires very little maintenance, as it has no reflector to clean. Panel heaters deliver heat to the product much differently than the standard Blasdel emitter. The lack of a reflector to direct the heat means that this heater has more true direct radiant heat and a high level of convection occurring to transfer the energy. The convection component is very useful in working with reflective products or coatings. It easily overcomes one of the common challenges in utilizing infrared technology.

This heater is ideal for applications involving massive or reflective products and in compressing the footprint of the system. The high watt density can shorten the oven for a given application since it takes the same amount of BTU or KW delivered to the part to complete the process.



Ceramic Panel Heater

CONVEYORS

Blasdel Enterprises, Inc. manufactures a variety of conveyors for use with our ovens or as stand alone units. By purchasing the conveyor with the oven, you are guaranteed that proper consideration has been given to the temperature requirements of the conveyor. Other manufacturers may try to cut costs by decreasing the ratings on the belt resulting in downtime and higher maintenance costs.

Choose from stainless steel wire mesh belts, square mesh flat wire belts, or a variety of woven or rubber compound belts including butyl, Teflon, etc. in a slider bed, roller bed, (powered or gravity) or slat conveyor design.

HIGH VELOCITY AIR CONVECTION OVENS

High velocity air ovens recirculate air at high velocities to remove solvents and water from coatings and accelerate the cure. In some instances, the part may be processed in an IR oven for final bake. Blasdel Enterprises, Inc. has designed this oven to be a closed loop recirculation system with minimal losses. A small percentage of air is exhausted to remove accumulated solvents or moisture. It is important to keep the humidity level at a minimum. There is no need for air knives or air curtains due to the balanced system. Temperature ranges from ambient to 500°F are available. Insulated side walls are required above 150°F. A PID temperature control system is used for very even heat, end-to-end and top-to-bottom.

FORCED COOLING TUNNELS

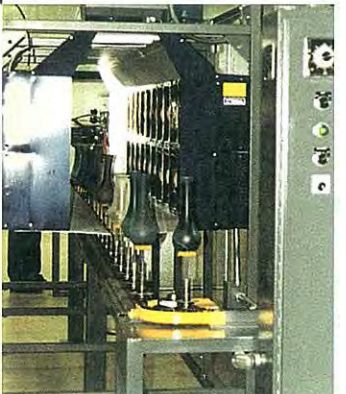
Cooling tunnels may be fabricated as above but with no heating capacity. In the cooling tunnels, two blowers force ambient or outside air in while drawing the heated air from the parts out the opposite end. Simply passing air over a part results in significantly faster cooling. If additional speed in cooling is desired, air conditioning may be added.



High velocity air convection ovens with butyl belt slider bed conveyors



Stainless steel mesh conveyor



Finishing cell with chain or edge conveyor