

## REPLACEMENT HOT ZONES

High Efficiency, Economical  
and Durable

### Features and Benefits

- Four (4) layers of 0.5" graphite felt with 0.060" thick graphite foil hot face provides high thermal value
- Internally tapered graphite gas nozzles are specifically directed at the work load to provide improved cooling rates
- Thin, curved, graphite resistance heating elements for uniform radiant heat up
- Threaded or twist-in element supports make for elements that are sturdy, durable and easily maintained
- Operating temperatures up to 3000°F available
- Temperature uniformity of approximately  $\pm 10^\circ\text{F}$
- Heavy duty hearth of graphite support pins and graphite rails
- Multiple zones of trim control
- Insulation and heating elements are mounted on a heavy duty stainless steel support ring
- Other insulation materials are available upon request
- Fully automated and programmable industrial controls package
- Designed for easy maintenance and minimal downtime
- Full one (1) year Warranty

Solar Manufacturing designs and manufactures vacuum heat treating furnaces and replacement hot zones with a focus on energy efficiency and durability. As a team of specialists with many collective years of experience in vacuum furnace and hot zone design, we are committed to our objectives of providing vacuum



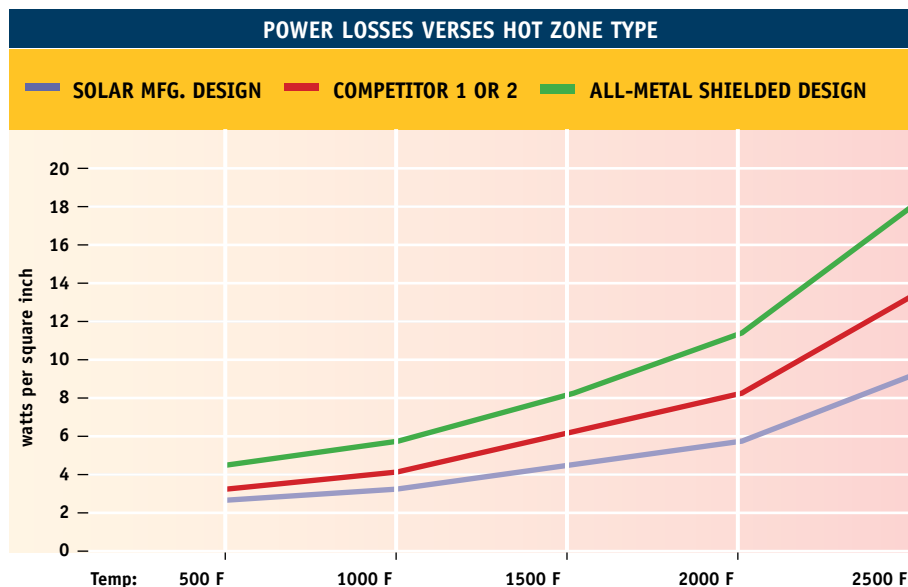
furnaces with the lowest cost of ownership achieved through state-of-the-art materials, high performance operation and robust design.

Solar Manufacturing is part of Solar Atmospheres, Inc., a progressive company and one of the largest independent commercial heat treaters in the USA. This background affords us a distinct advantage in the industry to assist you in choosing the right vacuum furnace or replacement hot zone for your application.

# Replacement Hot Zones

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HOT ZONE COMPARISON	
MANUFACTURER	DESCRIPTION
Solar Manufacturing Design	2" of high purity graphite felt insulation with 0.060" thick graphite foil hot face
Competitor 1	1" graphite insulation board backed by a layer of 1/2" carbon felt
Competitor 2	1-1/2" of carbon felt insulation with 0.015" thick graphite foil hot face
All-Metal Shielded Design	3 molybdenum / 2 stainless steel shields, all metal hot zone



*It is important to understand losses that occur through the furnace hot zone during operation on any vacuum furnace design. The above curve illustrates the efficiency of different hot zones based on various power losses at given temperatures. The table at left defines the configuration of each hot zone design.*



Solar Manufacturing's graphite insulated hot zones are energy efficient, resulting in less power loss when compared to other designs. Where process applications require refractory metal instead of graphite insulated hot zones, years of experience have made our engineers and technicians experts in designing and manufacturing all-metal shielded replacement hot zones.

For a full detailed price proposal with specifications, contact Sales Manager Dennis Hiddemen, 267-384-5040 x 510 or Aftermarket Sales Manager, Bryant Strelecki at x 537.

