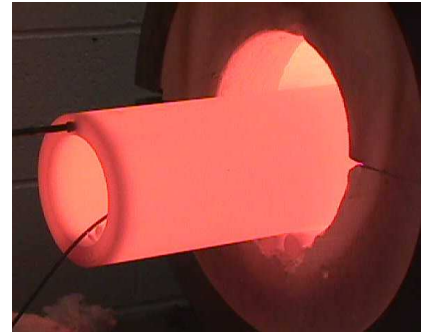


## ISOTHERMAL FURNACE LINERS

An Isothermal Furnace Liners (IFL) is a unique, annular heat pipe that redistributes heat within a furnace to provide a stable, highly uniform temperature profile. In most applications, temperature uniformity of within 0.1°C is attainable over the entire length of the liner. This uniformity simplifies thermal control and stability, providing a precise set point with a single thermocouple and controller. Temperature adjustment is a simple one step process and frequent profile measurements are not necessary. IFLs save energy and increase productivity by extending the usable work zone beyond the original furnace heater length and by eliminating temperature drops associated with end effects. Two or more liners may be used in series to create multiple, individually controlled zones for special effects such as step changes in the temperature profile.

### Applications:

- Temperature Calibration
- Blackbody Sources
- Isothermal Processing of Materials
- Vapor Deposition
- Diffusion
- Annealing
- Vapor Pressure Measurement



**Batch processing of IFLs**

Over a thousand IFLs are currently in use in many critically controlled processes. Standard IFLs for operation to 1,100°C are available in a range of sizes to fit conventional furnace bores for horizontal or vertical applications.

### Benefits:

- Flat temperature profile (isothermal)
- Simplified Temperature Control
- Rapid Temperature Recovery
- Increased Productivity
- Energy Savings

### Custom Designs and Options:

- (1) Flanged Ends
- (2) Extended Inner Pipe
- (3) IFL with Support Rods
- (4) IFL with Thermo Well (external, internal or within the heat pipe)
- (5) Vacuum Retort
- (6) Hemispherical Dome End
- (7) Small Diameter Cavity
- (8) Calibration Wells