

# SIERRATHERM

PRODUCTION FURNACES INC.

## 7500 SERIES INFRARED LAMP FURNACES

The SierraTherm 7500 Series Infrared line of conveyor furnaces are the most responsive and efficient thermal processing systems available for semiconductor and hybrid thick-film processing. Capable of temperatures up to 1000° C, the 7500 series units utilize short wave infrared lamps as the heat source for rapid and accurate processing. High production throughput rates are accomplished with the system's rapid start-up and profiler changeover times not to mention controlled atmosphere capability of 1-3 ppm above source gas purity.



- Fast Response
- Energy Saving Efficiency
- Unmatched Innovation and Performance

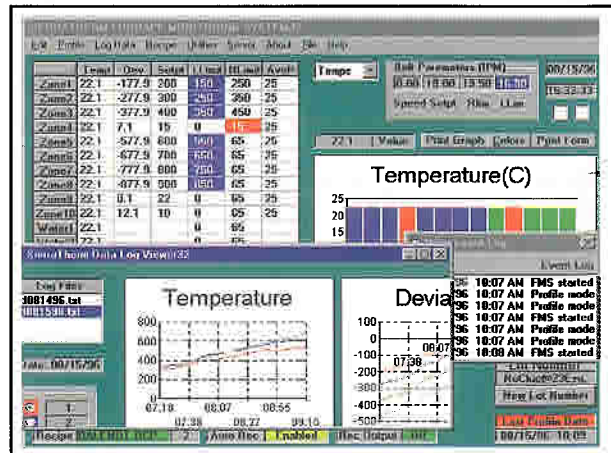
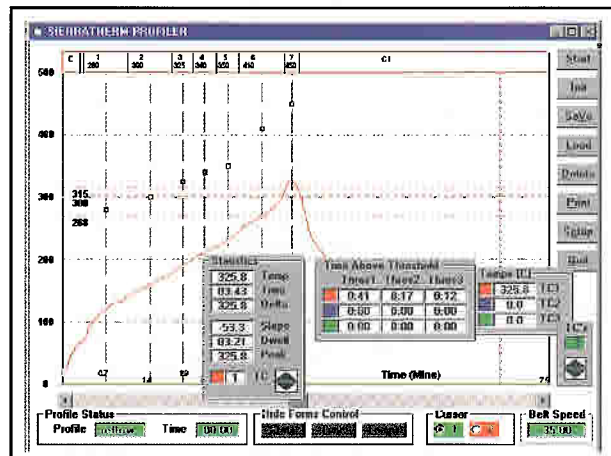
### Advantages

The 7500 Series of furnaces are capable of heat-up and stabilization times to 1000° C in as little as 15 minutes.

The furnace can be shut down when not in use, then rapidly brought back to operating temperatures to provide the most efficient thermal processing systems available. All SierraTherm infrared furnaces can accommodate extremely rapid temperature and atmosphere changes. For example, change over from an air to nitrogen atmosphere is accomplished in as little as 10 minutes.

The SierraTherm 7500 Series is an energy efficient precision thermal processing system which provides unmatched performance by way of:

- Innovative atmosphere distribution and management eliminates thermal shock
- Stable, unsurpassed temperature uniformity control ensures consistent "process" results.
- Atmosphere changes can be accomplished in minutes reducing gas consumption
- Rapid start-up, stabilization and profile change over times reduce energy bills
- Rapid temperature rise rates reduce processing times and therefore save floor space.



ARISING FROM EXPERIENCE





## Applications

The 7500 series infrared line of furnaces are ideal for most electronic assembly applications including:

- Flip-Chip/Solder Bump Reflow
- Package Lid Sealing (glass or metal)
- Lead Frame Attach
- Silver-Glass Die Attach
- Epoxy Curing
- Solar Cell Metallization
- Thick Film Firing
- Brazing
- Hydrogen Cleaning
- Solar Cell Diffusion or Annealing
- Drying

Included as standard equipment on the 7500 Series is the powerful and convenient Windows based MicroTherm PC Control, Profiling, and Monitoring System, first developed and introduced by SierraTherm in 1992.



## Performance Specifications

Maximum Temperature Rating: 1000°C

Normal Operating Temperature: 200-1000°C

Cross-Belt Temperature Uniformity: +/- 1.5°C

Energy Consumption:

for models operating at typical 850°C profiles  
(Typically 25-35% of connected load)

Overtemperature Protection:

Redundant Overtemperature Protection  
in all zones (Maximum 16 zones)

Cooling Modules:

Free and forced Convection/Conduction

Both air and water available as standard equipment

Atmosphere System:

Nitrogen or Hydrogen atmospheres available

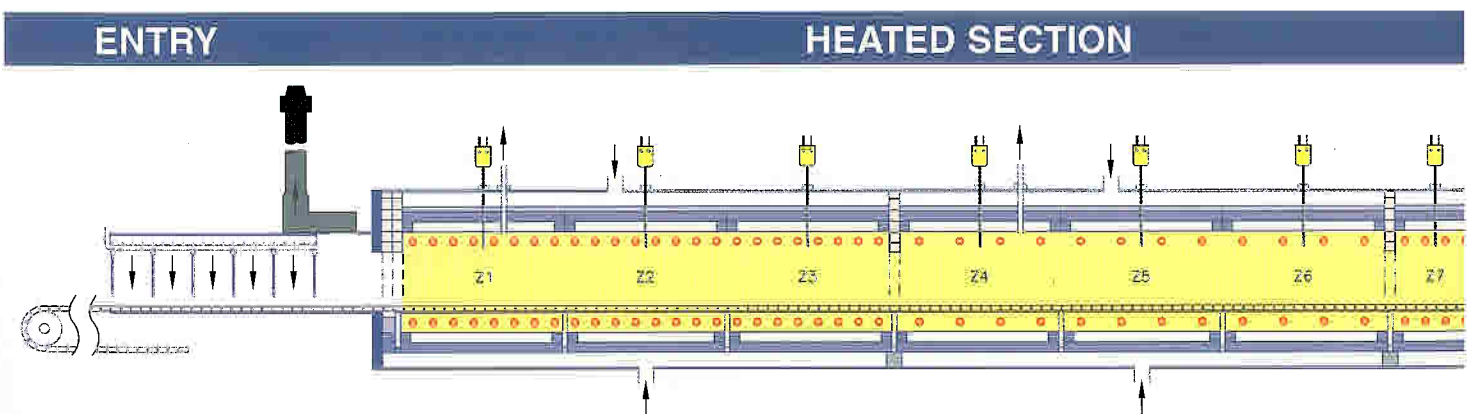
Uniform flow distribution across entire chamber width

Directional gas flow control

Power Supply: 200/240 Volts, 3 Phase, 50-60 HZ

Clearance Above Conveyor Belt: 2/51 (In/mm)

Belt Speed Range: 2-40 ipm



Typical Layout for Flip-Chip

## 7500 SERIES INFRARED LAMP FURNACES



*SierraTherm 7500 Series Infrared furnaces provide unparalleled fast response temperature profiles uniquely suited for a wide range of thermal processing applications including Solar Cell production depicted in this photo.*

### Drive System:

Microprocessor controlled, closed loop, digital feedback, +/-0.1% accuracy  
Mechanical Belt Slip Clutch

### Control System:

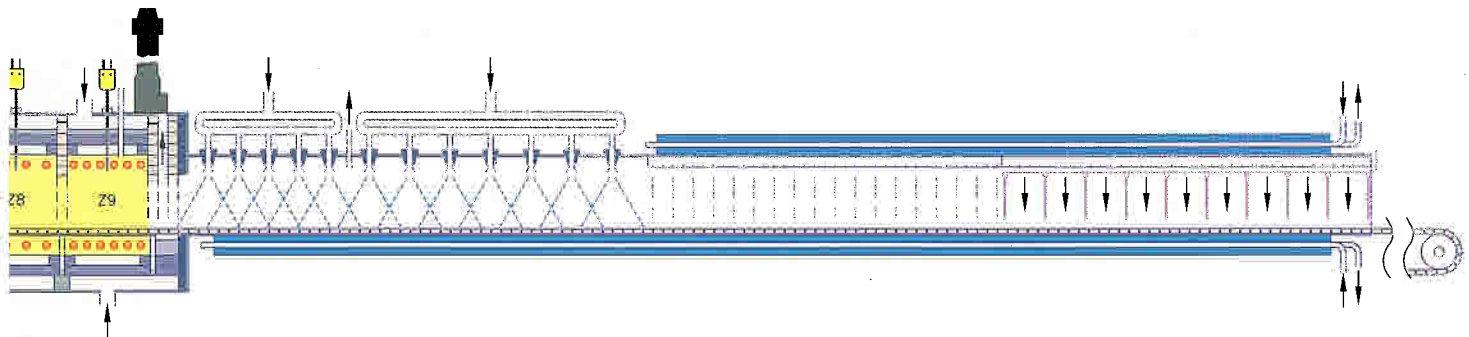
MicroTherm Windows Based PC Control System  
Pentium PC, Super VGA 14" Color Monitor  
3 Port Time Temperature Part Profiler  
SPC Data Logging and Historical Display  
On-Line Help Manual

### Exhaust System:

2" Diameter, Air Powered Venturi Exhauster  
Full Chamber Width Exhausting  
Removable Condensate Collection Trap  
Exhaust Gas Flow Monitor and Control

Performance specifications are based on nominal operating conditions. Actual performance characteristics are dependent on specific processing applications.

## MULTIPLE STAGE COOLING



**Solder Bump Reflow Oven**



# FAST RESPONSE FURNACES

## ORDERING INFORMATION AND SPECIFICATIONS

Type/Model	Heating	Heated Length (in/mm)	Graduated Cooling Length Including Pre-Cooling Length & Exit Gas Curtain (In/mm)	Connected Load/ Operating Load (KW at 230 Volts)
<b>10" Belt Systems +</b>				
7K10-32C43-4A	4	32/813	43/1092	18/4
7K10-64C72-6A	6	64/1626	72/1829	36/11
7K10-96C100-8A	8	96/2438	100/2540	48/15
7K10-120C120-9A	9	120/3048	120/3048	57/18
<b>15" Belt Systems +</b>				
7K15-64C72-6A	6	64/1626	72/1829	48/15
7K15-96C100-8A	8	96/2438	100/2540	66/20
7K15-120C120-9A	9	120/3048	120/3048	84/25
<b>24" Belt Systems +</b>				
7K24-120C120-9A	9	120/3048	120/3048	132/40
7K24-152C135-12A	12	152/3861	135/3429	146/44

\* Cooling sections can utilize a graduated water cooling module or a forced air cooling module as standard equipment.

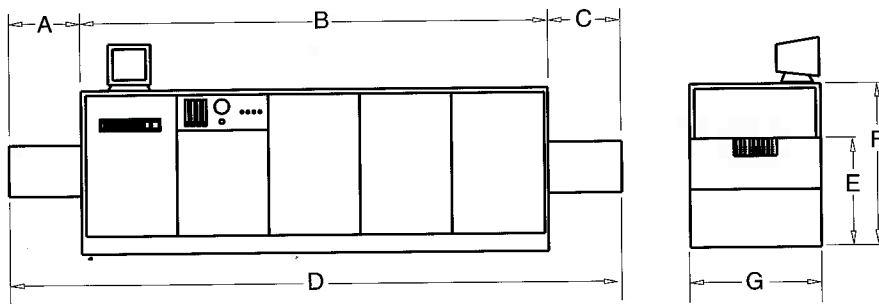
+ Models can be configured with a gas tight nitrogen atmosphere as an option.

Notes: 1. SierraTherm also manufactures custom designed furnaces to meet specific customer requirements.

2. Specifications are subject to change without notice.

3. Furnace models are subject to change without notification.

### DIMENSIONS



Type/Model	A	B	C	D	E	F	G
<b>10" Belt Systems +</b>							
7K10-32C43-4A	18/457	94/2388	18/457	130/3302	36/914	50/1422	36/94
7K10-32C43-4A	18/457	154/3912	18/457	190/4826	36/914	50/1422	36/94
7K10-32C43-4A	18/457	214/5436	18/457	250/6350	36/914	50/1422	36/94
7K10-32C43-4A	18/457	274/6960	18/457	310/7874	36/914	50/1422	36/94
<b>15" Belt Systems +</b>							
7K15-64C72-6A	18/457	154/3912	18/457	190/4826	36/914	50/1422	43/1219
7K15-96C100-8A	18/457	214/5436	18/457	250/6350	36/914	50/1422	43/1219
7K15-120C120-9A	18/457	274/6960	18/457	310/7874	36/914	50/1422	43/1219
<b>24" Belt Systems +</b>							
7K24-120C120-9A	18/457	274/6960	18/457	310/7874	36/914	50/1422	55/1397
7K24-152C135-12A	18/457	384/7722	18/457	340/8636	36/914	50/1422	55/1397

### OPTIONS

- Air Purifier System
- 440/480 Transformers
- Profiling Thermocouples
- Belt Stop Alarm Systems
- Individual Element Monitoring System
- Brush Belt Cleaners
- Ultrasonic Belt Cleaning Systems
- Printers and Plotters
- UPS for belt drive system
- Light Tower
- Part Sensor Alarms
- Air Filtration System
- Oxygen Analyzer
- Hydrogen Safety System
- Combustible Gas Monitor

**SierraTherm Production Furnaces Inc.**

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