

## AT A GLANCE

- Temperature Range up to: 1000 °C
- 2" product clearance
- Belt Speeds: 8 - 80 inches/min
- Alloy Nichrome belt material for long belt life with 1000 °C zone temperatures
- Controlled Atmosphere Capability ( < 8 ppm Oxygen)
- Energy efficient
- Low tension, vibration-free transport system
- Top removable panels allow complete access to the chamber
- PLC for furnace control with Industrial PC for HMI
- Internet link to PLC for factory assistance with customer site
- Color coded graphical user interface with links to factory technical support
- Temperature differentials up to 300 °C between adjacent zones can be achieved
- Easy-access, pull-out electrical drawers equipped with troubleshooting aids and spare parts
- Class 1000 Clean Room Compatible

TP SOLAR

Innovative Furnace Technologies

# TF618X Infrared Furnace



## A Safe, Reliable, Flexible Furnace for thermal processes requiring controlled atmosphere . . . . .

The TF618X provides a safe, repeatable process capability for thermal processes requiring a controlled atmosphere Forming gas atmospheres. The furnace zones can be supplied with 100% N<sub>2</sub> or Forming Gas up to 4%. N<sub>2</sub> is supplied to the baffle areas to isolate the chamber from ambient air . It is capable of heating up from ambient to 950 °C and stabilize with tight temperature control in less than 30 minutes. The heat up rate and rapid cool down capability make this furnace ideal for manufacturing operations requiring multiple profile change -overs or a short production utilization during a single production day.

TP Solar , Inc designs equipment for easy access and low maintenance to ensure overall reliability and highest customer satisfaction.

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# Infrared Furnace Specification Summary



Innovative Furnace Technologies

	Metric Units	English Units
<b>Furnace Configuration</b>		
Overall Length	7000 mm	275 in
Overall Width	1270 mm	50 in
Load Station	600 mm	24 in
Unload Station	600 mm	24 in
Net Weight	TBD	
Shipping Weight (Crated)	TBD	
Parts Clearance	50.8 mm	2 in
Entrance Baffle	400 mm	15.74 in
Heated Length ( 4 Zones)	1524 mm	60 in
Transition Baffle	400 mm	15.74 in
Cooling Length	2286 mm	90 in
Fan Cooling Module	1206 mm	47.5 in
Maximum Temperature (Zones 1 to 4 )	1000 °C	1832 °F
<b>Electrical</b>		
Voltage:	380-480 VAC/3 Ph/50-60 Hz	
Peak Power	120 kw	
Lockable Safety Disconnect	Standard	
<b>Process Atmosphere Gas</b>		
Nitrogen @ 75 psi max	2880 SCFH	
Forming Gas, Non Combustible @ 75 psi max (Furnace Zones Only Plus 1st Transition Tunnel)	1200 SCFH	
<b>Cooling Water Requirements</b>		
Typical Flow @ 70 psi max (di-ionized recommended)	Optional	
Recommended Inlet Temperature	10 - 20 °C	50 - 68 °F
<b>Transport System (Low tension, vibration free)</b>		
Belt Speed	8 - 80 ipm	
Belt Width	18 in	
Speed Control/Accuracy	Closed-Loop / ± 0.5 %	

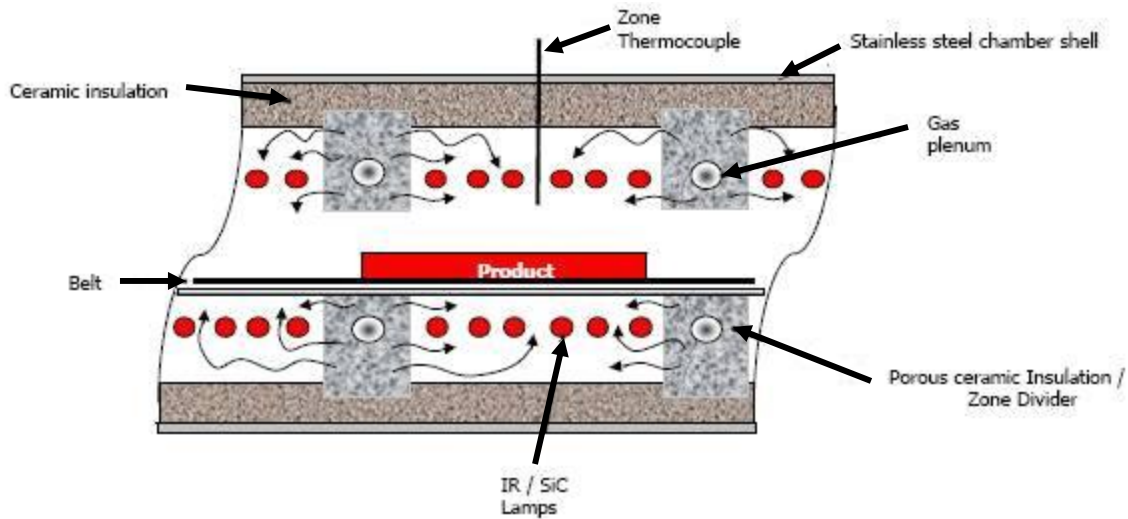
## Standard Features Included in the Base Price

Interface Rollers  
 Oxygen Analyzer  
 Rack-mounted Industrial Computer  
 Light Tower  
 Handshake (Smema Optional)  
 Lockable Safety Interlock  
 Load/ Unload Stations (400mm each)  
 High Voltage Operation 380-480 V / 3 Ph / 50-60 Hz  
 Spare Parts Kit (One Year)  
 Uninterruptible Power Supply (PLC & PC)  
 Water Cooling  
 Element Monitor

Controlled Atmosphere Capability ( < 8 ppm O<sub>2</sub> )

Patent Pending

## Cover Gas Delivery Method



A proven N<sub>2</sub> delivery system enables very low O<sub>2</sub> concentrations within the chamber. N<sub>2</sub> enters the chamber system through multiple flow meters, via multiple internal zone dividers and through end baffles. All N<sub>2</sub> supplies are separately adjustable to compensate for variations in processed product.

## Other Design Features of the TF-618X

- Thicker, less permeable insulation
- Reinforced zone dividers
- Dual exhaust
- Removable top for chamber access

## Applications for the TF-618X

- Co-fired Ceramic Technology for producing electronic packages such as:
  - \* Pin Grid Array (PGA)
  - \* Quad Flat Packs (QFP)
  - \* LAN Grid Array
  - \* Leadless Chip Carriers
  - \* Multilayer Ceramic Inserts (MLC)
- Glass to Metal Seal Technology Applications
- Brazing operations

