

## Laboratory Furnaces

### STANDARD FEATURES

- Maximum Operating Temperature : 1200°C / 1400°C / 1600°C / 1800 °C.
- High density Alumina / Quartz ceramic tubes.
- High accurate test results under uniform temperatures.
- Multiple zone heating as per application of customer.
- Display : 7 segment LED display.
- Accuracy :  $\pm 1^{\circ}\text{C}$ .
- Advanced Refractory interior, used in combination with energy efficient low thermal mass insulation.
- Over temperature limiter with adjustable cutout temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the furnace and load.
- Thermocouple break protection that help preventing thermocouple failure run away.
- Power control through Solid state relay or Thyristor unit that provides low noise operation.
- Outstanding temperature uniformity inside chamber.
- Easy maintenance and operation.
- NABL certified thermocouple

## TUBE FURNACE



Tubular furnaces are designed for sample testing under gas/vacuum atmosphere they are available in customize size and options with water-cooled flange. Maximum design temperature of the furnace is up to 1800°C.

The various applications include ageing, annealing, brazing, calcination, catalyst research, CIM, coating, CVD, degassing, drying, hardening, MIM, mini-plants, pyrolysis, sintering, soldering, sublimation, synthesis, tempering, test fuel cells, thermocouple calibration. Tempsens is ISO and CE certified Laboratory & Industrial furnace manufacturers and suppliers. Tempsens has wide range of tubular furnaces with different tube sizes and Temperature range up to 1800 °C.

### TECHNICAL SPECIFICATION

#### CONSTRUCTION

- Powder coated 2 mm thick Mild Steel cabinet / 304 Grade Stainless Steel (Optional).
- Vacuum formed ultra-high purity alumina low thermal mass insulation with pre sintered fiber insulation board for maximum energy saving design.
- Double shell case with cooling fan to keep low surface temperature and electric components safe.

## TEMPERATURE CONTROL

- Electronic/ Automatic Control.
- Temperature sensing through N/R/B type sensor.
- NABL certified thermocouple.
- Equipped with thermocouples break protection that help prevent thermocouple failure run away.
- Thyristorized power control

## OPTIONAL FEATURES

- Programmable PID controller with RS-232/ RS-485/ Ethernet & Data Logging software.
- Provision for vacuum/ gas purging application (Ar, N2, H2, O2, CO2, etc.) with water cooled flanges.
- Available in standard sizes and as per customer requirements.

| MODEL   | OPERATING TEMP. (°C) | INTERNAL DIMENSIONS (mm) | kW  | HEATING ELEMENT       | CONTROLLING THERMO-COUPLE |
|---------|----------------------|--------------------------|-----|-----------------------|---------------------------|
| TF 1200 | 1200                 | 50 x 200 & 80 x 250      | 2.8 | FeCrAl                | R                         |
| TF 1400 | 1400                 | 50 x 200 & 80 x 250      | 3.5 | Silicon Carbide       | B                         |
| TF 1600 | 1600                 | 50 x 200 & 80 x 250      | 4   | Molybdenum Disilicide | B                         |
| TF 1800 | 1800                 | 50 x 200 & 80 x 250      | 4   | Molybdenum Disilicide | B                         |

## ACCESSORIES

- Hand Gloves.
- Heating Element.
- Crucible.
- Tongs.
- SS Flanges.
- Vacuum pump.
- Gas purging accessories.