

## Laboratory Furnaces

### STANDARD FEATURES

- Maximum Temperature: 1800°C  
Working Temperature: 1750°C
- Dimensions: a) Useful working chamber: 125 mm x 150 mm x 240 mm (H X W X D)  
b) Volume: Approx. 4.5 Ltr.
- SAFETY: Over temperature protection mechanism.
- POWER CONTROL: Power Control (make: Eurotherm).
- THERMOCOUPLE: B type duplex with high purity alumina tube (accuracy of the thermocouples will be 0.4 percent of the actual temperature).  
The Thermocouples are calibrated from NABL certified laboratories.
- POWER SUPPLY: Rated for 1 phase 230V AC, 50 Hz, 4 KW.
- CERTIFICATIONS: The furnace controlling sensor is NABL Certified.

## HIGH TEMPERATURE LABORATORY CHAMBER FURNACE (HTF 1800)



### TECHNICAL SPECIFICATION

#### ❖ INSULATION

- 1800 Degree special grade fiber alumina with multiple layers of vacuum formed ultra-high purity alumina low thermal mass insulation with pre sintered fiber insulation board for maximum energy saving design. The multiple layers of board should be cast with high temperature bonding glue of special design with high alumina ceramic nails for better mechanical support.
- Double layer SS structure with air gap forming to keep outer body temperature below 65 Degree.

#### ❖ TEMPERATURE CONTROLLER

- Microprocessor based automatic digital PID programmable temperature controller (Make: Eurotherm 3016EPC) will be provided for the furnace operation.
- Temperature controller with following specification
  - Inputs: General Range  $\pm 100\text{mV}$  and 0 to 10Vdc (auto ranging) Resolution.
  - Wire output Calibration accuracy:  $\pm 1^\circ\text{C}/\text{F}$
  - Outputs Application: Heating, cooling, process output, alarms or program event Alarms Types Full scale high or low. Deviation high, low, or band. Rate of change Modes Latching or non-latching. Normal or blocking action.

- Communications: Digital Transmission standard EIA 485
- Control functions Control Modes PID or PI with overshoot inhibition, PD, PI, P only or On/Off Application Heating, cooling or process output
- Programmer parameters: 4 programs with 16 segments per program Ramp Rate or Time to Target and dwell (with Hours, Minutes or Seconds (0.1 to 999.9)
- General Display Dual, 4 digits' x 7 segment high intensity LED Supply: 85 to 264V AC, 48 to 62Hz. Dimensions: W×H×D; 48× 48× 150 mm<sup>3</sup>, Power consumption 10watts

#### ❖ **HEATING ELEMENTS**

- Super grade MoSi<sub>2</sub> U-shaped high temperature heating elements with good heat dissipation to ensure rapid heating and better uniformity in each and every corner of the chamber.

#### ❖ **TRANSFORMER**

- Power transformer of reputed make.

#### ❖ **CONTROL UNIT**

- A housing which corresponds to the furnace housing in design and dimensions mainly the following components are installed:

(A) 1 Safety controller for additional protection of heating and insulation.

(B) 1 Thyristor unit for phase-angle firing.

(C) 1 Transformer.

#### ❖ **SAFETY INTERLOCKS**

- The furnace should switch off in case of:
  - (A) Over temperature.
  - (B) Over current.
  - (C) Emergency door opening.