

RAPID TEMP LAB FURNACES 1800°C (3272°F)

The most reliable and widely used lab furnaces available today, the CM 1800 Series Rapid Temp Lab Furnaces offer rapid heating and cooling rates, uniform temperature control, compactness, and sturdy construction for long term use. Configurations are available for virtually any requirement with four basic configurations including front and bottom loading box furnaces, horizontal and vertical tube furnaces. Gas sealed systems, thermal cycling systems, as well as custom designs and specialized control systems are offered.

The 1800 Series furnaces incorporate a graded insulation package using high purity alumina fiber. Due to the low thermal conductivity and light weight of this insulation fast thermal cycling is possible. These furnaces will not hot spot at high temperatures and are resistant to degradation. The double wall shell construction allows the fan cooling feature to maintain reduced skin temperatures while keeping the element terminals cool, extending element life.

Kanthal Super 1900 molydisilicide heating elements are used, offering fast heat up rates and long life in oxidizing atmospheres. These elements are not subject to normal watt loading limitations and are

not affected by thermal shock, therefore heat-up rates are only limited by the capability of the power supply. The electrical resistivity of these elements remains constant over long periods without aging so that individual elements can be replaced without having to match resistance values.

The Rapid Temp Control and Power Supply console includes all components required for immediate installation and operation. Proper control of molydisilicide requires a phase angle-fire SCR, step-down transformer and independent overtemperature instrumentation. Standard control instrumentation includes a multiple segment programmable microprocessor such as Honeywell or Eurotherm used in conjunction with a "Land-Jewell" thermocouple (platinum 40% rhodium versus platinum 20% rhodium).

In addition to offering standard atmosphere options with the tube furnaces, CM also offers a gas-sealed option on our box furnaces for inert atmosphere operation. (The use of inert gas with molydisilicide elements reduces the maximum operating temperature by 100°C. in box furnaces only)



Model 1807 Front Loader



Model 1807 Bottom Loader

USED FOR THESE AND OTHER APPLICATIONS:

- Ceramics
- Glass
- Powders
- Laboratory Research
- Materials Testing
- Thermal Cycling
- Sintering
- Annealing
- Firing
- Calcining

SPECIFICATIONS



Model 1812 FL Gas-Sealed



Model 1830-12 Horizontal Tube

FULL SYSTEM INCLUDES:

- Double Shell Construction
- High Purity Alumina Fiber Insulation
- Kanthal Super 1900 Molydisilicide Heating Elements
- Cubed Chamber for Best Uniformity
- Fan Cooling of Element Terminals
- Type "Land-Jewell" Thermocouples
- Independent Overtemperature Thermocouple and Instrument
- Programmable Ramp and Soak Control
- Phase Angle-Fire SCR Power Controller
- Step Down Transformer
- Ammeter and Voltmeter
- Separate Controls/Power Supply Console
- 10' Interconnecting Wire and T/C Extension Leads

CONFIGURATIONS:

- Front Loading Box Furnace (FL)
- Bottom Loading Box Furnace (BL)
- Thermal Cycling Box Furnace
- Gas-Sealed Box Furnace (FL)
- Horizontal Tube Furnace (HTF)
- Vertical Tube Furnace (VTF)
- Custom Materials Testing Configurations

1800 SERIES FURNACES, STANDARD SIZES (ADDITIONAL SIZES AVAILABLE)

MODEL	1804 FL/BL	1807 FL/BL	1812 FL/BL	1830-12 HTF	1830-10 VTF
Chamber WxHxD IDxL	4 x 4 in 102 x 102 x 102 mm	9 x 8.5 x 12 in 229 x 216 x 305 mm	13 x 11 x 12 in 330 x 279 x 305 mm	3.125 x 12 in 79 x 305 mm	3.125 x 10 in 79 x 305 mm
Door Opening WxH (FL)	3 x 3.75 in 76 x 95 mm	6.25 x 8.5 in 159 x 216 mm	10.5 x 10 in 267 x 254 mm	3.125 in ID Tube 79 mm ID Tube	3.125 in ID Tube 79 mm ID Tube
Outside Dim WxHxD (FL)	11 x 18.5 x 12.5 in 280 x 470 x 318 mm	18 x 26 x 24 in 457 x 660 x 607 mm	22.5 x 29 x 24 in 571 x 737 x 610 mm	24 x 27 x 24 in 610 x 686 x 610 mm	22 x 26 x 21 in 559 x 660 x 533 mm
Heatup Rate Minutes	90	180	180	N/A	N/A
Furnace Weight	75 lb / 20 kg	110 lb / 50 kg	130 lb / 59 kg	105 lb / 48 kg	110 lb / 50 kg
Number of Elements	4	6	6	8	6
Power Supply Dimensions WxHxD	22.5 x 29.5 x 18 in 571 x 406 x 457 mm	22.5 x 29.5 x 18 in 571 x 406 x 457 mm	22.5 x 40 x 18 in 571 x 1016 x 457 mm	22.5 x 29.5 x 18 in 571 x 406 x 457 mm	22.5 x 29.5 x 18 in 571 x 406 x 457 mm
Power Supply Weight	75 lb / 34 kg	175 lb / 80 kg	230 lb / 105 kg	175 lb / 80 kg	175 lb / 80 kg
Power Requirement (Max) KVA	2	7.5	10	6.5	10
Power Requirement (Normal) KVA	1.4	3.5	4.3	3.9	4.8
Standard Voltage Requirement	110 1-Phase	208/240 1-Phase	208/240 1-Phase	208/240 1-Phase	208/240 1-Phase
Service Entrance Current Requirement at 208 Volts	20	60	70	45	60