

TUBE FURNACES 1200°C (2192°F) AND 1550°C (2822°F)

The most reliable and widely used furnaces available today, the CM 1000 Series Tube Furnaces offer controlled heating and cooling rates, uniform temperature control, compactness, and sturdy construction for long term use. Both horizontal and vertical models are available for virtually any requirement in single or multi-zone configurations. Custom designs including tilting and rotating systems, atmosphere and vacuum packages, and specialized control systems are offered.

The 1000 Series furnaces incorporate a graded insulation package using high purity alumina fiber. These furnaces will not hot spot at high temperatures and are resistant to degradation. The rugged steel shell is hinged for easy access inside the furnace.

The 1000K models have a maximum continuous operating temperature of 1200°C (2192°F) and utilize half round heating elements on either side of the process tube consisting of Kanthal A1 wire embedded in ceramic plate heaters. The elements are kept independent of the furnace insulation for more efficient operation and much longer life than vacuum formed element/insulation combinations. The Kanthal A1 alloy in these elements is very durable at high temperatures, due to the formation of a protective oxide layer formed by reaction with the oxygen in air. The 1000K Series Control and Power Supply console includes all components required for immediate installation and operation. Proper control of Kanthal A1 plate heaters requires a zero-crossover SSR, firing indicating light, circuit

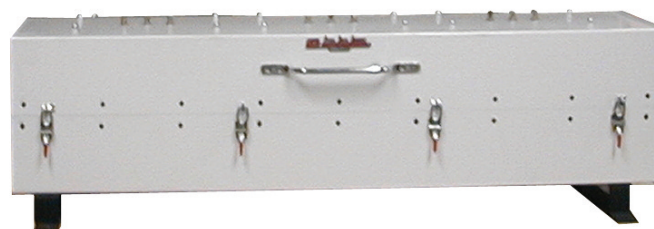
breaker and a multiple segment programmable control such as Honeywell or Eurotherm used in conjunction with a Type "N" thermocouple.

The 1000SC models have a maximum continuous operating temperature of 1550°C (2822°F) and utilize silicon carbide "glow bar" elements on either side of the process tube. These elements are easily replaceable through the sides of the furnace. The 1000SC Series Control and Power Supply console includes all components required for immediate installation and operation. Proper control of silicon carbide elements requires a step-down transformer, phase angle-fire SCR, ammeter and voltmeter, independent overtemperature instrumentation, circuit breaker and a multiple segment programmable control such as Honeywell or Eurotherm used in conjunction with Type "S" thermocouples.

Most 1000 Series furnaces can be equipped with atmosphere control packages for inert or reducing atmosphere applications. Water-cooled atmosphere end seals can be used on standard process tubes. In addition, retorts or muffles can be utilized for atmosphere containment. CM Furnaces offers our hydrogen safety system for use with these furnaces.

USED FOR THESE AND OTHER APPLICATIONS:

- Ceramics
- Glass
- Powders
- Laboratory Research
- Materials Testing
- Brazing
- Heat Treating
- Melting
- Annealing
- Firing
- Sintering
- Cleaning
- Reducing



SPECIFICATIONS

FULL SYSTEM INCLUDES:

- Rugged Hinged Steel Shell
- High Purity Alumina Fiber Insulation
- Heating Elements consisting of Kanthal A1 Wire Embedded in Ceramic Plates (1000K models) or Silicon Carbide Elements(1000SC models)
- Unheated Insulated Vestibules to Minimize End Losses
- Type "N" Thermocouple (1000K models) or Type "S" Thermocouple (1000SC models)
- Programmable Ramp and Soak control

- Zero-Crossover SSR Power Controller (1000K models) or Phase Angle-Fire SCR(1000SC models)
- SSR Firing Indicator Light (1000K models) or Ammeter and Voltmeter (1000SC models)
- Separate Controls/Power Supply Console
- 10' Interconnecting Wire and T/C Extension Leads

CONFIGURATIONS:

- Horizontal Tube Furnace (HTF)
- Vertical Tube Furnace (VTF)
- Atmosphere Control Packages
- Custom Materials Testing Configurations

MODEL - 1000K (1200°C / 2192°F) ⚡ STANDARD SIZES (ADDITIONAL SIZES AVAILABLE)								
PROCESS TUBE OD (in)	PROCESS TUBE OD (mm)	MODEL NUMBER	HEATED LENGTH (in)	HEATED LENGTH (mm)	OUTSIDE DIMENSIONS W X H X L (in)	OUTSIDE DIMENSIONS W X H X L (mm)	WATTS	
1/2 to 2	13 to 51	238-6	6	152	10-1/2 x 14 x 13	267 x 356 x 330	1140	
		238-12	12	305	10-1/2 x 14 x 19	267 x 356 x 483	1900	
		238-18	18	457	10-1/2 x 14 x 25	267 x 356 x 635	2690	
		238-24	24	610	10-1/2 x 14 x 31	267 x 356 x 787	2920	
		238-30	30	762	10-1/2 x 14 x 36	267 x 356 x 914	3870	
2-1/4 to 4-1/2	57 to 114	5-12	12	305	13-1/2 x 17 x 19	343 x 432 x 483	4000	
		5-18	18	457	13-1/2 x 17 x 25	343 x 432 x 635	5020	
		5-24	24	610	13-1/2 x 17 x 31	343 x 432 x 787	7540	
		5-30	30	762	13-1/2 x 17 x 36	343 x 432 x 914	8540	
		5-36	36	914	13-1/2 x 17 x 42	343 x 432 x 1067	10800	
5 to 6-1/2	127 to 165	7-18	18	457	22 x 25 x 24	559 x 635 x 610	7400	
		7-24	24	610	22 x 25 x 30	559 x 635 x 762	10000	
		7-30	30	762	22 x 25 x 36	559 x 635 x 914	12100	
		7-36	36	914	22 x 25 x 42	559 x 635 x 1067	14200	
		7-48	48	1219	22 x 25 x 54	559 x 635 x 1372	18900	
7 to 7-3/4	178 to 197	8-18	18	457	29 x 32 x 24	737 x 813 x 610	9080	
		8-24	24	610	29 x 32 x 30	737 x 813 x 762	13000	
		8-30	30	762	29 x 32 x 36	737 x 813 x 914	17640	
		8-36	36	914	29 x 32 x 42	737 x 813 x 1067	21920	
		8-48	48	1219	29 x 32 x 54	737 x 813 x 1372	30480	
8 to 11-1/2	203 to 292	12-24	24	610	29 x 32 x 30	737 x 813 x 762	16500	
		12-30	30	762	29 x 32 x 36	737 x 813 x 914	22000	
		12-36	36	914	29 x 32 x 42	737 x 813 x 1067	26000	
		12-48	48	1219	29 x 32 x 54	737 x 813 x 1372	34000	

MODEL - 1000SC (1550°C / 2822°F) ⚡ STANDARD SIZES (ADDITIONAL SIZES AVAILABLE)								
PROCESS TUBE OD (in)	PROCESS TUBE OD (mm)	MODEL NUMBER	HEATED LENGTH (in)	HEATED LENGTH (mm)	OUTSIDE DIMENSIONS W X H X L (in)	OUTSIDE DIMENSIONS W X H X L (mm)	WATTS	
1 to 4	25 to 102	4-18	18	457	28 x 20 x 31	711 x 508 x 787	1140	
		4-24	24	610	28 x 20 x 37	711 x 508 x 940	1900	
		4-36	36	914	28 x 20 x 49	711 x 508 x 1245	2690	
4-1/2 to 6	114 to 152	6-18	18	457	32 x 24 x 31	813 x 610 x 787	4000	
		6-24	24	610	32 x 24 x 37	813 x 610 x 940	5020	
		6-36	36	914	32 x 24 x 43	813 x 610 x 1245	7540	
		6-48	48	1219	32 x 24 x 61	813 x 610 x 1549	8540	
6-1/4 to 8	159 to 203	8-24	24	610	38 x 28 x 37	965 x 711 x 940	7400	
		8-36	36	914	38 x 28 x 49	965 x 711 x 1245	10000	
		8-48	48	1219	38 x 28 x 61	965 x 711 x 1549	12100	
		8-60	60	1524	38 x 28 x 73	965 x 711 x 1854	14200	
8-1/4 to 11-1/2	210 to 292	12-24	24	610	42 x 32 x 37	1067 x 813 x 940	9080	
		12-36	36	914	42 x 32 x 49	1067 x 813 x 1245	13000	
		12-48	48	1219	42 x 32 x 61	1067 x 813 x 1549	17640	