

Furnaces

Compact Benchtop Muffle Furnaces

Get easy, digital control of samples

- Ideal for ignition tests, gravimetric analysis, and heat treating steel parts
- Feature single set point digital control
- Digital LED displays chamber temperature

Furnaces feature ceramic fiber insulation for fast heat-up and reduced energy consumption—rise time to 1100°C takes only 50 minutes. Embedded heating elements on three sides give an improved temperature gradient. Drop-down door serves as a convenient shelf for loading and unloading samples. A safety interlock switch disconnects power to heating elements whenever the door is opened. Chambers are constructed of heavy-duty welded steel. Order optional hearth plate below to protect furnace from spills.



Specifications

Operating temperature range: 100 to 1100°C Temperature control accuracy: $\pm 2.0^\circ\text{C}$ Temperature stability: $\pm 2.0^\circ\text{C}$ at 1000°C

ISO9001:2008
CERTIFIED SUPPLIER



Capacity cu in. (L)	Dimensions (W x H x D)		Temperature uniformity	Watts (at 1000°C)	120 VAC, 50/60 Hz		240 VAC, 50/60 Hz	
	Chamber	Overall			Cat. no.	Price	Cat. no.	Price
75 (1.23)	4" x 3 3/4" x 5" (10.2 x 9.5 x 12.7 cm)	9" x 14" x 13" (22.9 x 35.6 x 33.0 cm)	$\pm 7.8^\circ\text{C}$	1060	GY-33900-00		GY-33900-05	
128 (2.1)	5" x 4 1/4" x 6" (12.7 x 10.8 x 15.2 cm)	10" x 14 1/2" x 15 13/16" (25.4 x 36.8 x 40.1 cm)	$\pm 5.0^\circ\text{C}$	1520	GY-33900-10		GY-33900-15	

[GY-33900-51](#) Ceramic hearth plate for 33900-10 and -15

Muffle Furnaces

No more long waits

- Rise times as fast as 15 minutes!
- Microprocessor-based PID control prevents overshooting of set temperature

Choose models with either a single set point (SSP) or a sixteen-segment, programmable controller. Safety features include adjustable, high-limit overtemperature protection and a safety interlock system to cut off power to the heating elements when the door is opened.

Energy-efficient Moldatherm® insulation and double-wall construction help maintain a cool outer temperature as well as uniform heat distribution within the chamber. An air vent ventilates chamber; an atmosphere inlet lets you purge inert gases and check temperature.

Specifications

Operating temperature range: up to 1100°C Temperature control accuracy: $\pm 1^\circ\text{C}$

ISO9001:2008
CERTIFIED SUPPLIER



Capacity cu in. (L)	Dimensions (W x H x D)		Temp't uniformity	Rise time (to 1100°C)	Watts	Shpg wt		120 VAC, 50/60 Hz		208/240 VAC, 50/60 Hz		Ceramic hearth plates	
	Chamber	Overall				lb	kg	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
Furnaces with SSP programmable control													
121 (2)	4" x 4" x 8" (10.2 x 10.2 x 20.3 cm)	15" x 17½" x 20" (38.1 x 44.5 x 50.8 cm)	±2°C at 1100°C	15 minutes	1800	55	25	—	—	GY-33852-14		GY-33852-70	
324 (5.3)	6" x 6" x 9" (15.2 x 15.2 x 22.9 cm)	17" x 21½" x 21" (43.2 x 54.6 x 53.3 cm)		25 minutes	1800	110	50	—	—	GY-33852-22		GY-33852-71	
1123 (18.4)	9" x 9" x 14" (22.9 x 22.9 x 35.6 cm)	21" x 26" x 25¾" (53.3 x 66.0 x 65.4 cm)		35 minutes	3500	130	59	—	—	GY-33852-27		GY-33852-72	
Furnaces with sixteen segment programmable control													
121 (2)	4" x 4" x 8" (10.2 x 10.2 x 20.3 cm)	15" x 17½" x 20" (38.1 x 44.5 x 50.8 cm)	±2°C at 1100°C	15 minutes	1800	55	25	GY-33852-30		—	—	GY-33852-70	
324 (1.6)	6" x 6" x 9" (15.2 x 15.2 x 22.9 cm)	17" x 21½" x 21" (43.2 x 54.6 x 53.3 cm)		25 minutes	1800	110	50	GY-33852-40		—	—	GY-33852-71	
1123 (18.4)	9" x 9" x 14" (22.9 x 22.9 x 35.6 cm)	21" x 26" x 25¾" (53.3 x 66.0 x 65.4 cm)		35 minutes	3500	130	59	—	—	GY-33852-45		GY-33852-72	
2592 (42.48)	12" x 12" x 18" (30.5 x 30.5 x 45.7 cm)	24" x 28" x 30" (61.0 x 71.1 x 76.2 cm)		45 minutes	5600	185	84	—	—	GY-33852-55†		GY-33852-73	

†Uniformity is $\pm 2^\circ\text{C}$ for back 2/3 of heated chamber length; $\pm 5^\circ\text{C}$ for entire chamber length. ‡Model 33852-55 does not include a power cord.

[GY-06443-50](#) Crucible tongs, 20" (50.8 cm) L

Benchtop Muffle Furnaces

Achieve better control with programmable operation

Single set point models feature digital temperature control. LED displays chamber temperature continuously; displays set point at touch of a button. Single set point (SSP) models let you monitor both set point and actual chamber temperatures. Choose an 8-segment controller (four ramp and four dwell) with additional programming capabilities, and oven temperature protection relay.

Furnaces with 350 cubic-inch chambers include a ceramic shelf to double your capacity. A safety interlock switch disconnects power to heating elements when door is opened. Models 02053-16, and -18 feature a single set point controller with one ramp and one dwell, and an overtemperature protection delay.



Specifications

Temperature control accuracy: $\pm 3^{\circ}\text{C}$



Control type	Operating temperature range	Capacity cu in. (L)	Dimensions (W x H x D)		Temp uniformity (at 1000°C)	Rise time (to 1200°C)	Watts	120 VAC, 50/60 Hz		240 VAC, 50/60 Hz	
			Chamber	Overall				Cat. no.	Price	Cat. no.	Price
SSP	100 to 1200°C	120 (2)	5" x 4" x 6"	11¼" x 18" x 15½"	$\pm 4.8^{\circ}\text{C}$	72 minutes	1000	GY-02053-00		GY-02053-02	
8 segment	100 to 1200°C	120 (2)	(12.7 x 10.2 x 15.2 cm)	(28.6 x 45.7 x 39.4 cm)	$\pm 3.6^{\circ}\text{C}$	72 minutes	1000	GY-02053-13		—	—
SSP								GY-02053-12		GY-02053-14	
SSP w/ 1 ramp, 1 dwell	200 to 1200°C	350 (5.74)	7" x 5" x 10"	13¼" x 19" x 19½"	$\pm 3.6^{\circ}\text{C}$	80 minutes	1800	GY-33903-02		GY-02053-18	
			(17.8 x 12.7 x 25.4 cm)	(33.7 x 48.3 x 49.5 cm)							

Cole-Parmer® StableTemp™ Muffle Furnaces

Get up to temperature fast

- Reach maximum temperature in as fast as 25 minutes
- Autotune feature helps eliminate temperature overshoot
- Energy efficient insulation keeps exterior safe to touch
- Models available with extensive programming capabilities

StableTemp



The fully embedded heating elements maintain temperature uniformity. A door switch cuts power to the heating elements when the door is opened minimizing your exposure to hot temperatures and extending the life of the heating elements.

Basic Control Furnaces feature a single LED display that toggles between actual and set point temperatures. Single Set Point Control Furnaces have two LED displays to simultaneously display actual and set point temperatures. Programmable Control Furnaces have two LED displays to simultaneously display actual and set point temperatures. These furnaces can store up to 31 programs with up to 126 segments total.[†]

Specifications

Operating temperature range: 100 to 1100°C

Temperature control accuracy: $\pm 1^{\circ}\text{C}$

Temperature uniformity: $\pm 5^{\circ}\text{C}$



Capacity cu in. (L)	Dimensions (W x H x D)		Rise time (to 1050°C)	Power		Shpg wt		Catalog number	Price
	Chamber	Overall		VAC, Hz	Watts	lb	kg		
Basic control furnaces									
323 (5.3)	6" x 6" x 9" (15.2 x 15.2 x 22.9 cm)	17" x 21½" x 21" (43.2 x 54.6 x 53.3 cm)	25 minutes	120, 50/60 240, 50/60	1800	110	49.9	GY-33858-00 GY-33858-05	
1123 (18.4)	9" x 9" x 14" (22.9 x 22.9 x 35.6 cm)	21" x 26" x 25¾" (53.3 x 66.0 x 65.4 cm)	35 minutes	208/240, 50/60	3500	150	68.1	GY-33858-10	
2592 (42.48)	12" x 12" x 18" (30.5 x 30.5 x 45.7 cm)	24" x 28" x 30" (61.0 x 71.1 x 76.2 cm)	45 minutes	208/240, 50/60	5600	165	74.9	GY-33858-20	
Single set point control furnaces									
323 (1.6)	6" x 6" x 9" (15.2 x 15.2 x 22.9 cm)	17" x 21½" x 21" (43.2 x 54.6 x 53.3 cm)	25 minutes	120, 50/60	1800	110	49.9	GY-33858-30	
1123 (18.4)	9" x 9" x 14" (22.9 x 22.9 x 35.6 cm)	21" x 26" x 25¾" (53.3 x 66.0 x 65.4 cm)	35 minutes	208/240, 50/60	3500	150	68.1	GY-33858-40	
2592 (42.48)	12" x 12" x 18" (30.5 x 30.5 x 45.7 cm)	24" x 28" x 30" (61.0 x 71.1 x 76.2 cm)	45 minutes	208/240, 50/60	5600	165	74.9	GY-33858-50	
Programmable control furnaces†									
323 (1.6)	6" x 6" x 9" (15.2 x 15.2 x 22.9 cm)	17" x 21½" x 21" (43.2 x 54.6 x 53.3 cm)	25 minutes	120, 50/60 240, 50/60	1800	110	49.9	GY-33858-60 GY-33858-65	
1123 (18.4)	9" x 9" x 14" (22.9 x 22.9 x 35.6 cm)	21" x 26" x 25¾" (53.3 x 66.0 x 65.4 cm)	35 minutes	208/240, 50/60	3500	150	68.1	GY-33858-70	
2592 (42.48)	12" x 12" x 18" (30.5 x 30.5 x 45.7 cm)	24" x 28" x 30" (61.0 x 71.1 x 76.2 cm)	45 minutes	208/240, 50/60	5600	165	74.9	GY-33858-80	

[†]Program capacity is dependent on memory (351 byte maximum available). For example: furnaces can store one program with up to 116 segments (using 349 bytes), or four programs with up to 28 segments each (using 340 bytes).

[GY-33858-90](#) RS-485 communications port lets you use furnace with computer. Factory-installed; must be ordered at same time as furnace. Order software separately

[GY-33858-92](#) Cable, 7.6-m L. Required to connect furnace to computer

[GY-33910-52](#) Cable, daisy chain

Furnaces

Mini Muffle Furnaces

Heat samples more evenly

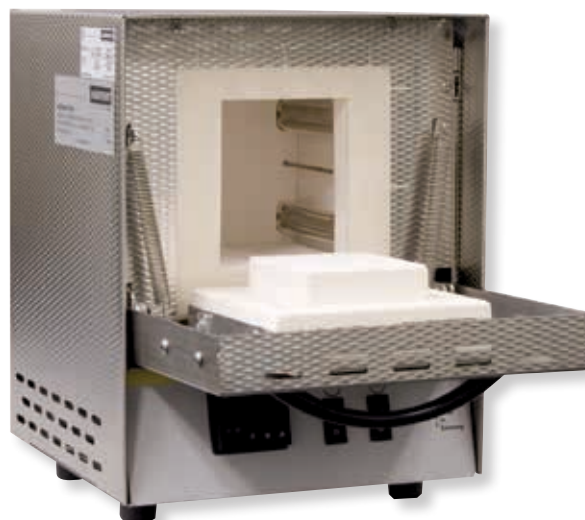
- Reach temperatures up to 1200°C
- Stainless steel exterior and double-walled housing ensure low external temperatures

Furnaces have an exhaust air outlet in the rear wall of the furnace, and solid state power control relays for quieter operation. Units precisely control one storable temperature with digital PID temperature control.

Models 33335-01 and -03 have easy-to-replace heating elements encased in quartz glass tubes and multilayered fiber insulation in the furnace chamber. Maximum temperature of 1100°C is achieved in approximately 10 minutes with a working temperature of 1050°C.

Models 33335-05 and -07 feature ceramic plates with integral heat elements which are safely guarded from fumes and splashing. Maximum temperature of 1200°C is reached in approximately 20 minutes.

What's included: 6½-ft (1.9-m) power cord with standard NEMA plug.



Specifications

Temperature control accuracy: $\pm 1^\circ\text{C}$



Capacity cu in. (L)	Max temperature	Dimensions (W x H x D)		Rise time to max temp	Power		Shpg wt		Catalog number	Price
		Chamber	Overall		VAC, Hz	Watts	lb	kg		
60 (0.98)	1100°C	3½" x 4¼" x 4½" (9 x 11 x 11.5 cm)	9⅞" x 13⅜" x 10½" (25 x 34 x 26.5 cm)	10 minutes	110–120, 50/60	1500	22	10	GY-33335-01	
					220–240, 50/60				GY-33335-03	
60 (0.98)	1200°C	3½" x 4¼" x 4½" (9 x 11 x 11.5 cm)	9⅞" x 13⅜" x 10½" (25 x 34 x 26.5 cm)	20 minutes	110–120, 50/60	1500	22	10	GY-33335-05	
					220–240, 50/60				GY-33335-07	

Vertical Lift Muffle Furnaces

Rapid heating with no wait

- All models feature PID temperature control
- Digital overtemperature control on select models protects from circuit failure
- Choose from single set point or programmable 300 segment control

Vertical lift door takes up less benchtop space and protects you from the hot inside door surface; a door safety switch cuts off power to the heating elements when the door is open. A 1" diameter air vent ventilates the chamber; a ¾" diameter atmosphere inlet allows inert gases to be purged. Temperature is monitored by separate thermocouple probe. Contact us for help in selecting a thermocouple probe.

What's included: thermocouple for temperature regulation and Moldatherm hearthplate. Cord is not included (requires hard wiring).



Specifications

Operating temperature range: 100 to 1200°C

Temperature control accuracy: $\pm 1^\circ\text{C}$

Capacity cu in. (L)	Dimensions (W x H x D)		Temperature uniformity†	Control type	Rise time (to 1200°C)	Power		Shpg wt		Catalog number	Price
	Chamber	Overall				VAC, Hz	Watts	lb	kg		
1037 (17)	13" x 7" x 11" (33 x 17.8 x 27.9 cm)	24" x 23" x 27" (61 x 58.4 x 68.6 cm)	$\pm 2^\circ\text{C}$	Single setpoint, OTC	20 minutes	208/240, 50/60	4500	175	75	GY-33854-05	
				1 program, 16 segments						GY-33854-10	
				1 program, 16 segments, OTC						GY-33854-15	

†Uniformity specification is for back ¾ of chamber length.

Muffle Furnaces

Load samples easily and safely

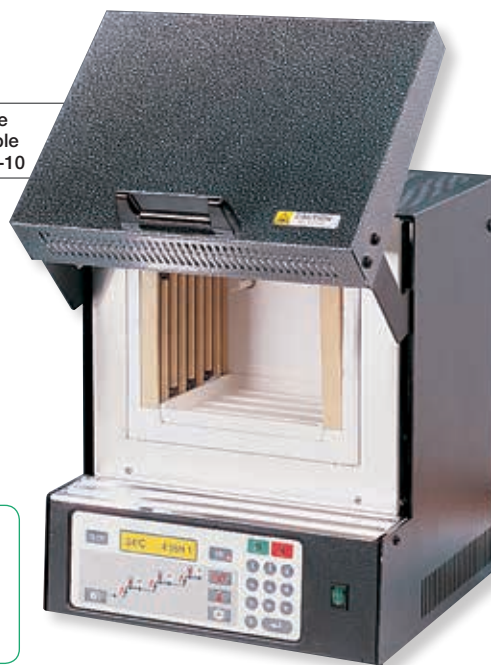
- Vertical lift door directs heat away from user and saves counter space
- Heating elements slide out for quick replacement

All models feature fiber insulation in the chamber and firebrick insulation around the heating elements. The fiber insulation cools down fast while the firebrick provides longer life for the heating elements.

Single Set Point Control Furnaces have proportional temperature control and include an analog temperature indicator with 50°C/°F increments. **Three-Stage Programmable Furnaces** feature PID control with ten programs. Program link feature lets you run two three-stage programs sequentially. Use the seven-day delay to program the completion date and time.



Three-stage programmable model 33855-10



Specifications

Single Set Point Control Models

Operating temperature range: 200 to 1100°C
Temperature control accuracy: ±25°C

Three-Stage Programmable Control Models

Operating temperature range: 50 to 1100°C
Temperature control accuracy: ±5°C at steady state
Ramp rate: 0.1 to 40°C/min (negative ramp rate limited by natural cooling)

Capacity cu in. (L)	Dimensions (W x H x D)		Temperature uniformity	Rise time (to 1100°C)	Power		Shpg wt		Catalog number	Price	Repl. hearth plates	
	Chamber	Overall			VAC, Hz	Watts	lb	kg			Cat. no.	Price
Furnaces with single set point control												
130 (2.13)	5 ¹¹ / ₁₆ " x 4 ⁵ / ₈ " x 5 ³ / ₁₆ " (14.4 x 11.7 x 13.2 cm)	11 ¹ / ₂ " x 13 ¹³ / ₁₆ " x 13" (29.2 x 35.1 x 33 cm)	±8°C	40 minutes	100 to 120, 50/60 200 to 250, 50/60	1440 1060	33	15	GY-33855-00 GY-33855-05		GY-33855-70	
550 (9.01)	9" x 7" x 9" (22.9 x 17.8 x 22.9 cm)	15 ¹ / ₁₆ " x 16" x 17" (40.2 x 40.6 x 43.2 cm)	±8°C	90 minutes	100 to 120, 50/60 200 to 250, 50/60	1920 2400	56	25	GY-33855-20 GY-33855-25		GY-33855-71	
1750	14" x 10" x 12 ¹ / ₂ " (35.6 x 25.4 x 31.8 cm)	24" x 21 ¹ / ₂ " x 21" (61 x 54.6 x 53.3 cm)	±8°C	45 minutes	200 to 250, 50/60	4600	150	68	GY-33855-45		GY-33855-72	
Furnaces with three-stage programmable control												
130 (2.13)	5 ¹¹ / ₁₆ " x 4 ⁵ / ₈ " x 5 ³ / ₁₆ " (14.4 x 11.7 x 13.2 cm)	11 ¹ / ₂ " x 13 ¹³ / ₁₆ " x 13" (29.2 x 35.1 x 33 cm)	±8°C	35 minutes	100 to 120, 50/60 200 to 250, 50/60	1440 1060	36	16	GY-33855-10 GY-33855-15		GY-33855-70	
550 (9.01)	9" x 7" x 9" (22.9 x 17.8 x 22.9 cm)	15 ¹ / ₁₆ " x 16" x 17" (40.2 x 40.6 x 43.2 cm)	±8°C	60 minutes	100 to 120, 50/60 220 to 250, 50/60	1920 2400	60	27	GY-33855-30 GY-33855-35		GY-33855-71	
1750 (28.68)	14" x 10" x 12 ¹ / ₂ " (35.6 x 25.4 x 31.8 cm)	24" x 21 ¹ / ₂ " x 21" (61 x 54.6 x 53.3 cm)	±8°C	45 minutes	200 to 250, 50/60	4600	156	71	GY-33855-55		GY-33855-72	
Furnaces with three-stage programmable control and power door												
550 (9.01)	9" x 7" x 9" (22.9 x 17.8 x 22.9 cm)	15 ³ / ₁₆ " x 16" x 17" (38.6 x 40.6 x 43.2 cm)	±8°C	60 minutes	100 to 120, 50/60 200 to 250, 50/60	1920 2400	62	28	GY-33855-60 GY-33855-65		GY-33855-71	

Mini-Mite™ Tube Furnaces

Take it where you need it

- Compact, portable, and lightweight design
- Ideal for transporting to your benchtop

All models feature microprocessor-based, self-tuning PID control to prevent over-shooting of set temperature. As a safety precaution, power to the heating elements is cut off when the chamber temperature exceeds the set temperature or when the door is opened. Split hinge design permits convenient placement of the process tube; accepts one 1" OD process tube. Tube not included; order process tubes on page 402. Chamber is insulated with energy-efficient Moldatherm® for quick heat up and cool down rates.

Specifications

Temperature uniformity: ±1°C over 2 3/16" segment; ±3°C over 3 5/16" segment



Control type	Temperature range	Chamber size	Zone lengths	Process tube OD	Overall dimensions (W x H x D)	Power		Shpg wt		Catalog number	Price
						VAC, Hz	Watts	lb	kg		
Single set point	100 to 1100°C	12" (30.5 cm) L	12" (30.5 cm)	1" (2.5 cm)	11" x 15" x 16" (27.9 x 38.1 x 40.6 cm)	120, 50/60	800	37	17	GY-33850-10 GY-33850-15	
16-segment	100 to 1100°C	12" (30.5 cm) L	12" (30.5 cm)	1" (2.5 cm)	11" x 15" x 16" (27.9 x 38.1 x 40.6 cm)	120, 50/60	800	37	17	GY-33850-00 GY-33850-05	

Furnaces

Three-Zone Tube Furnaces

Control each zone independently

- Temperature uniformity $\pm 1.0^{\circ}\text{C}$ over 24 inches
- Accept multiple tube sizes for versatility

These three-zone tube furnaces feature three 16-segment programmable controllers—one for each zone. Microprocessor-based self-tuning PID control provides excellent control without over-shooting of set temperature. Protect your samples with the adjustable high limit overtemperature protection feature.

What's included: Type K thermocouple (one per zone) set of tube adapters for the largest size tube the furnace will accept. Order adapters for different sizes of process tubes directly below; order process tubes below.[†]

Note: Cord is not included.



Specifications

Temperature uniformity: $\pm 1.0^{\circ}\text{C}$ over 24" **Temperature control accuracy:** $\pm 3^{\circ}\text{C}$ over $3\frac{5}{16}$ " segment

Temperature range	Chamber size	Zone lengths	Process tube OD	Overall dimensions (W x H x D)	Power		Shpg wt		Catalog number	Price
					VAC, Hz	Watts	lb	kg		
392 to 2012°F (200 to 1100°C)	1465 cu in. (24 L)	6", 12", 6" (15.2, 30.5, 15.2 cm)	1 to 3"	35" x 21" x 17" (89 x 53.3 x 43.2 cm)	208/240, 50/60	3800	225	102	GY-33851-25	
	2197 cu in. (36 L)		3 to 6"		208/240, 50/60	11,000	235	107	GY-33851-35	

[†]Single, long process tube recommended over multiple short tubes.

Moldatherm® Tube Adapters

Tube adapters allow furnaces to be used with different-sized process tubes.

Tube OD	Catalog number	Price/ea [†]
For model 33851-25		
1"	GY-33851-50	
2"	GY-33851-52	
For model 33851-35		
4"	GY-33851-62	

[†]Two adapters are required per tube.

Process Tubes

Choose from Mullite and 99.8% pure alumina

Furnace process tubes are offered in two formulations. Mullite is lower in thermal expansion and better in thermal shock than alumina. It withstands temperatures up to 1700°C (3092°F) and offers a lower cost option when the application is less demanding.

Alumina is a hard, chemical-resistant material that withstands temperatures up to 1750°C (3182°F) in aggressive environments. Both mullite and alumina tubes are available with both ends open for general applications or with one end closed for vacuum applications.

Specifications

Compressive strength

Mullite: 550 MPa (80 kpsi)
Alumina: 2500 MPa (363 kpsi)

Maximum temp with no load

Mullite: 1700°C (3092°F)
Alumina: 1750°C (3182°F)

Diameter tolerances: greater of $\pm 5\%$ or ± 0.030 " (± 0.76 mm)

Straightness tolerances: ≤ 0.006 "/1.000" (0.15/25.4 mm) cumulative



OD		Length		Open both ends				Closed one end			
				Mullite		Alumina		Mullite		Alumina	
in.	cm	in.	cm	Cat no.	Price	Cat no.	Price	Cat no.	Price	Cat no.	Price
1	2.5	12	30.5	GY-33910-01		GY-33910-41		GY-33910-21		GY-33910-61	
		18	45.7	GY-33910-03		GY-33910-43		GY-33910-23		GY-33910-63	
		24	61	GY-33910-05		GY-33910-45		GY-33910-25		GY-33910-65	
		36	91.4	GY-33910-07		GY-33910-47		GY-33910-27		GY-33910-67	
2	5.1	12	30.5	GY-33910-09		GY-33910-49		GY-33910-29		GY-33910-69	
		18	45.7	GY-33910-11		GY-33910-51		GY-33910-31		GY-33910-71	
		24	61	GY-33910-13		GY-33910-53		GY-33910-33		GY-33910-73	
		36	91.4	GY-33910-15		GY-33910-55		GY-33910-35		GY-33910-75	
3	7.6	24	61	GY-33910-17		GY-33910-57		GY-33910-37		GY-33910-77	
		36	91.4	GY-33910-19		GY-33910-59		GY-33910-39		GY-33910-79	

[†]kpsi = thousands of pounds per square inch.

Split-Hinge Tube Furnaces

Turn up the heat to 1200°C

- Ideal for annealing, crystal growing, calibration, and heat treating
- Designed for vertical or horizontal operation

Available in single- or three-zone models. The split-hinge design permits easy process tube installation, fast cooling, and overall ease of operation. These furnaces come equipped with energy-efficient Moldatherm® LGO™ heating elements that provide superior temperature uniformity, fast heat-up and cooldown and require little or no maintenance.

The heat-reflecting, element support assembly creates two highly effective insulating air spaces and the unique cabinet design helps keep the exterior surface temperature low. The three-zone models feature power circuits with three independent thermocouples and full adjustment of each zone over the entire operating range up to 1200°C. All models can be used with a variety of process tubes (sold separately on page 402) and come complete with one set of tube adapters.

All furnaces require an independent control module; sold separately below. Modules feature advanced microprocessor-based PID control (three on the three-zone), built-in adjustable overtemperature protection, and simultaneous LED display of actual temperature vs set point. You can also configure modules to display temperature in either Celsius or Fahrenheit.

What's included: one set of tube adapters.



33903-01



33903-03
Single-zone
control module



33903-08
Three-zone
control module

ISO 9001:2008
CERTIFIED SUPPLIER



REQUIRED System Components

- 1) Furnace
- 2) Control module

1. Furnaces (required)

Temperature range	Zone lengths	Process tube OD	Overall dimensions (W x H x D)	Power		Shpg wt		Catalog number	Price
				VAC, Hz	Watts	lb	kg		
Single-zone furnaces									
100 to 1200°C (212 to 2192°F)	12" (30.5 cm)	0.75" to 1"	21" x 12" x 13" (53.4 x 30.5 x 33.1 cm)	120,	1330	60	28	GY-33903-11	
	12" (30.5 cm)	1" to 3"	23" x 16" x 17" (58.5 x 40.7 x 43.2 cm)	50/60	2675	120	55	GY-33903-01	
	12" (30.5 cm)	1" to 3"	23" x 16" x 17" (58.5 x 40.7 x 43.2 cm)	208/240,	2675	120	55	GY-33903-16	
	24" (61 cm)	1" to 3"	35" x 16" x 17" (89 x 40.7 x 43.2 cm)	50/60	5440	175	80	GY-33903-14	
Three-zone furnaces									
100 to 1200°C (212 to 2192°F)	8", 8", 8" (20.3, 20.3, 20.3 cm)	1" to 3"	35" x 16" x 17" (89 x 40.7 x 43.2 cm)	208/240,	5355	195	89	GY-33903-13	
	12", 12", 12" (30.9, 30.9, 30.9 cm)	3" to 6"	49" x 20" x 21" (124.5 x 50.8 x 53.3 cm)	50/60	11760	310	141	GY-33903-12	

2. Control Modules (required)

Description	Overall dimensions (W x H x D)	Power		Shpg wt		Catalog number	Price
		VAC, Hz	Max amps	lb	kg		
Single-zone control modules							
Single set point	14" x 10" x 19" (35.6 x 25.4 x 48.3 cm)	120, 50/60	30	40	19	GY-33903-03	
		208/240, 50/60				GY-33903-04	
Single program, multiple segment programmable		120, 50/60				GY-33903-06	
		208/240, 50/60				GY-33903-07	
Three-zone control modules							
Single set point for each zone	14" x 17" x 19" (35.6 x 43.2 x 48.3 cm)	208/240, 50/60	20, 30, 20	60	28	GY-33903-08	
Single program, multiple segment programmable for center zone		208/240, 50/60				GY-33903-09	
Single program, multiple segment programmable for all zones		208/240, 50/60				GY-33903-17	

Furnaces

Heavy-Duty Box Furnaces

Built-in safeguards protect users

- Ideal for multiple heat treating applications
- Reaches working temperature (maximum: 1200°C or 1300°C) quickly and efficiently
- Optimize temperature uniformity within the chamber
- Sixteen segment programmable control with capability of ramp or dwell

Hard-wearing refractories around the chamber entrance and base provide resistance to everyday wear and tear, while secondary insulation ensures maximum thermal efficiency.

Operator safety is enhanced through double shell construction producing low temperature outer case, a positive break safety door switch that cuts power when the door is opened, and an easy to operate upward opening door that keeps the hot face away from the operator.

Two individual LED digital displays simultaneously indicate both actual and setpoint temperatures.

Note: Furnace does not include power cord.

Specifications

Temperature control accuracy: $\pm 1^{\circ}\text{C}$

Temperature stability: $\pm 0.2^{\circ}\text{C}$



Capacity cu in. (L)	Temperature range	Dimensions (W x H x D)		Temperature uniformity	Rise time	Power		Shpg wt		Catalog number	Price
		Chamber	Overall			VAC, Hz	Watts	lb	kg		
832 (13.6)	0 to 1200°C	8" x 8" x 13" (20.3 x 20.3 x 33 cm)	17" x 25 $\frac{3}{4}$ " x 24" (43.2 x 65.4 x 61 cm)	$\pm 5^{\circ}\text{C}$ at 1200°C†	65 minutes	208/240, 50/60	3100	122	55	GY-33859-01	
	0 to 1300°C			$\pm 5^{\circ}\text{C}$ at 1300°C†	80 minutes					GY-33859-02	

†Uniformity specification is for back $\frac{2}{3}$ of chamber depth.

High-Temperature Box Furnace

Heat to 1600°C in less than one hour

- Program allows you to ramp temperature at controlled rates
- Ideal for heat treating, reacting studies, sintering processes, and ceramic firing
- Double shell construction to keep the outer case cool
- PID temperature controller offers accurate 16-segment programmability with up to 8 ramps and 8 dwells

Quality chamber construction includes a durable refractory brick entrance, a long-life cast alumina hearth, and energy-efficient ceramic fiber insulation.

Door switch disengages power when the door is opened, and the easy-to-operate vertical-swing door keeps heat away when opened. Furnace is equipped with a chimney vent for process exhaust.

A three-color LCD display simultaneously indicates actual furnace temperature and set point temperature. Temperature may be displayed in $^{\circ}\text{C}$ or $^{\circ}\text{F}$. Unique control system increases power to the heating elements to compensate for element resistance change during the aging process.

Specifications

Temperature control accuracy: $\pm 1^{\circ}\text{C}$

Temperature stability: $\pm 0.2^{\circ}\text{C}$



Capacity cu in. (L)	Temperature range	Dimensions (W x H x D)		Temperature uniformity	Rise time	Power		Shpg wt		Catalog number	Price
		Chamber	Overall			(VAC, Hz)	Watts	lb	kg		
181 (2.97)	0 to 1600°C	4 $\frac{3}{4}$ " x 4 $\frac{3}{4}$ " x 8" (12.1 x 12.1 x 20.3 cm)	17 $\frac{1}{2}$ " x 26 $\frac{1}{2}$ " x 24" (43.5 x 66.4 x 61 cm)	$\pm 5^{\circ}\text{C}$ at 1600°C	55 minutes	208/240, 50/60	4500	124	56	GY-33859-03	