



1200°C Assay Furnaces



CF 24/301/OTC

- Low thermal mass ceramic fiber insulation combined with high quality refractory brick provides maximum thermal efficiency.
- A counterbalanced vertical lift door design keeps the hot face insulation facing away from the operator.
- Positive break door safety switch isolates power to the heating elements when door is opened.
- The door incorporates a viewing port for convenient observation of the internal chamber.
- A 3" diameter insulated exhaust duct exits near the rear of chamber, and incorporates a removable trap below the chimney to collect any condensed lead.
- It is recommended the furnace be positioned beneath an efficient exhaust system, preferably fitted with a proprietary lead filter.
- Power may be easily increased to the heating elements from the temperature controller to compensate for SiC element resistance change (aging). This feature assures the furnace will always achieve the original heat-up and performance specifications.
- Four chamber sizes available.
- Low outer case temperature is provided through double shell construction.
- The furnace temperature is precisely regulated by Carbolite's Model 301 PID digital temperature controller.
- A 24 hour, 7 day timer is provided as standard to allow switching the furnace on and off automatically.

General Features

- Maximum operating temperature of 1200°C.
- Unique long-life furnace construction specifically designed for the assay of precious metals.
- Silicon carbide heating elements are positioned above and below the work chamber, assuring excellent temperature uniformity.
- Heating elements are protected from spillage and corrosive fumes by silicon carbide tiles that form the roof and hearth of the furnace.
- Incoming air is preheated to ensure rapid heat transfer to the cupels, and even temperature distribution throughout the work chamber.
- A low airflow path directly over the cupels speeds up the oxidation process.

Charge Capacity		
Model	Max. No. of Cupel No. 8	Max. No. of Cupel No. 6
CF 15	15	24
CF 24	24	32
CF 50	50	72
CF 60	60	90

Based on Cupel No. 8 of a size 44.5 mm diameter x 30.2 mm high and Cupel No. 6 of a size of 35.7 mm diameter x 28.2 mm high.

Assay Furnaces											
Furnace Model	Max. Temp. (°C)	Internal Chamber Dimensions Inches (mm)			External Dimensions Inches (mm)			TC Type	Max. Power (kW)	Furnace Voltage	Shipping Weight (lb.)
		Height	Width	Depth	Height	Width	Depth				
CF 15	1200	5.00 (125)	8.75 (220)	13.75 (350)	41.25 (1050)	37.50 (950)	37.50 (950)	R	9.0	208/240 *	480
CF 24	1200	8.00 (205)	10.00 (255)	18.00 (460)	83.00 (2110)	41.25 (1050)	42.25 (1070)	R	14.5	208/240 *	798
CF 50	1200	9.00 (230)	13.75 (350)	21.25 (540)	82.75 (2100)	41.25 (1050)	43.25 (1100)	R	20.0	208/240 *	1323
CF 60	1200	9.75 (250)	15.75 (400)	25.50 (650)	82.75 (2100)	47.25 (1200)	47.25 (1200)	R	31.0	208/240 *	1398

Specify voltage at time of order.

* 3 phase electrical design.



General Features

- Maximum operating temperature of 1400°C.
- Protective silicon carbide tiles are positioned between the heating elements and work chamber, minimizing any attack on the heating elements by the process.
- Long-life silicon carbide heating elements are positioned on two sides of the SCF 4 and SCF 8 furnace chambers, assuring excellent heat transfer to the load.
- Silicon carbide heating elements are positioned on each of the four chamber sides of the SCF 1 gold melting furnace, providing superior chamber uniformity.
- The top chamber opening of each furnace is fit with an insulating door plug.
- A door handle and hinge mechanism conveniently raises door plug upward and to the side for full access to the chamber.
- Dense refractory around the chamber opening and under the chamber hearth resists wear and provides good load bearing capacity.
- Brick refractory and low thermal mass ceramic fiber insulation combine for an energy efficient insulation design.
- Power may be easily increased to the heating elements from the temperature controller to compensate for SiC element resistance change (aging). This feature assures the furnace's original heat-up characteristics and maximum rated temperature is always achieved.
- The robust steel plate and door design on the top of the furnaces, combined with a rolled hollow steel framework and heavy gauge panels, provides for a rugged maintenance free design.
- A 2" diameter flue is provided through the top of each chamber door.
- Precise Model 301 PID temperature controller with ramp-to-setpoint feature and timer functions is standard.
- Programmable controls and over-temperature protection control system are optional.

Precious Metals Crucible Furnaces

In addition to furnaces designed for the assaying of precious metals, Carbolite offers three top loading crucible furnaces specifically designed for smelting and melting of precious metals. The SCF 4/SCF 24 and SCF 8/SCF 48 furnaces have two separate top loading chambers, each with its own independent door mechanism. The SCF 4 and 8 models are fit with a crucible support aperture that will accept 4 or 8 crucibles respectively. These furnaces are designed to accept a crucible with maximum dimensions of 120 mm OD x 180 mm high. The SCF 24 and 48 furnaces do not include the aperture, allowing the customer to select the crucible size and quantity to load into the furnace. To load these furnaces with 24 or 48 crucibles, the maximum dimensions of the crucible should be 79 mm OD x 97 mm high. The Model SCF 1 is designed with a deep top loading chamber that is specifically suitable for gold melting.



SCF 4



SCF 1

1400°C Precious Metals Crucible Furnaces

Furnace Model	Max. Temp. (°C)	Internal Chamber Dimensions Inches (mm)			External Dimensions Inches (mm)			TC Type	Max. Power (kW)	Furnace Voltage	Shipping Weight (lb.)
		Height	Width	Depth	Height	Width	Depth				
SCF 1	1400	11.25 (285)	11.25 (285)	17.25 (440)	33.25 (845)	33.25 (845)	33.00 (835)	R	15	208/240 *	830
SCF 4/SCF 24	1400	19.75 (500)	9.50 (245)	8.00 (200) **	22.25 (565)	32.50 (830)	25.50 (650)	R	15	208/240 *	1250
SCF 8/SCF 48	1400	30.00 (760)	9.50 (245)	8.00 (200) **	71.00 (1800)	43.25 (1100)	26.75 (680)	R	21	208/240 *	1710

** Two chambers of this size.

Specify voltage at time of order.

* 3 phase delta electrical design.