Top hat furnace - HB

General Information

The HB top hat furnace range has an automatically operated vertically moving hood for heat treatment in air. The moving hood design allows samples to be accessed from three sides. The HB can be equipped with CrFeAl heating wires up 1300 °C or with MoSi2 heating elements for temperatures up to 1800 °C.

The HB hood furnaces are available with usable volumes of 80 to 514 litres with the inner space being rectangular in design and the base plate having a convenient height of 750 mm. The hood moves up and down automatically to load and unload the sample.

All debinding applications require the use of an optional afterburner. The afterburner is driven by propane gas and compressed air to burn any evaporating binder.

Carbolite Gero specializes in custom designed furnaces and can also create a customised version of the HB to accommodate specific heat treatment needs. It is possible to equip a gas circulating system to improve temperature uniformity. Several sample thermocouples can be inserted into the furnace chamber to monitor and test the temperature profile. Through the use of a serial interface, the thermocouple data is logged at predefined intervals for evaluation.

The furnace is operated manually with a Eurotherm controller. Other controllers are available upon request.

Standard features

- 1300 °C, 1600 °C, 1700 °C & 1800 °C maximum operating temperatures
- Carbolite Gero 3216CC controller with single ramp to set point and process timer
- From 80 to 514 litre capacities
- FeCrAl wire heating elements for 1300 °C models
- High quality molybdenum disilicide heating elements for 1600 °C, 1700 °C and 1800 °C models
- Advanced refractory interior, used in combination with energy efficient low thermal mass insulation

Options (specify these at time of order)

- A range of sophisticated digital controllers, multi-segment programmers and data loggers is available. These can be fitted with RS232, RS485 or Ethernet communications
- Over-temperature protection (recommended to protect valuable contents & for unattended operation)
- Other sizes on request
- Gas inlet for operation under modified atmosphere (not gas tight)
- Afterburner for debinding applications

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Technical Specifications

HB__/80	
Max temp (°C)	1300, 1600, 1700, 1800
Volume (l)	80
Uniformity between 800°C and Tmax (°C) [DIN 17052]	± 5
Max. heat-up rate (°C/min)	5, 10, 10, 10
Cooling time (h)	12, 14, 14, 14
Dimensions: Internal H x W x D (mm)	500 x 400 x 400
Dimensions: External H x W x D (mm)	2200 x 1200 x 1200
Max power (kW)	15, 45, 50, 60

HB__/160	
Max temp (°C)	1300, 1600, 1700, 1800
Volume (l)	160
Uniformity between 800°C and Tmax (°C) [DIN 17052]	± 5
Max. heat-up rate (°C/min)	5, 10, 10, 10
Cooling time (h)	14, 14, 14, 14
Dimensions: Internal H x W x D (mm)	500 x 800 x 400
Dimensions: External H x W x D (mm)	2200 x 1800 x 1200
Max power (kW)	30, 80, 85, 90

HB__/240	
Max temp (°C)	1300, 1600, 1700, 1800
Volume (l)	240
Uniformity between 800°C and Tmax (°C) [DIN 17052]	--
Max. heat-up rate (°C/min)	--
Cooling time (h)	14
Dimensions: Internal H x W x D (mm)	500 x 1200 x 400
Dimensions: External H x W x D (mm)	2200 x 2200 x 1200
Max power (kW)	--

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HB__/332	
Max temp (°C)	1300, 1600, 1700, 1800
Volume (l)	332
Uniformity between 800°C and Tmax (°C) [DIN 17052]	--
Max. heat-up rate (°C/min)	--
Cooling time (h)	--
Dimensions: Internal H x W x D (mm)	550 x 1100 x 550
Dimensions: External H x W x D (mm)	2400 x 2200 x 1400
Max power (kW)	--

HB__/514	
Max temp (°C)	1300, 1600, 1700, 1800
Volume (l)	514
Uniformity between 800°C and Tmax (°C) [DIN 17052]	--
Max. heat-up rate (°C/min)	--
Cooling time (h)	--
Dimensions: Internal H x W x D (mm)	780 x 1200 x 550
Dimensions: External H x W x D (mm)	2700 x 2200 x 1400
Max power (kW)	--

Please note:

- Maximum continuous operating temperature is 100 °C below maximum temperature