

Bottom loading furnace, metal insulation - HTBL MO/W

General Information

The HTBL MO / HTBL W is a bottom loading furnace system that is based on metallic insulation and heating elements.

The metallic furnaces are offered with a volume of 60 litres. The HTBL 60 MO/16-1G has a maximum temperature of 1600 °C and uses molybdenum radiation shields and heating elements. The HTBL 60 W/22-1G has a maximum temperature of 2200 °C and uses tungsten radiation shields and heating elements. The metallic versions of the HTBL are suited for generating the purest atmospheres and the best working vacuum level.

One clear advantage is the easy loading and unloading of the HTBL type furnaces. Once the hearth has been lowered, the sample is accessible from all sides without limitations. Sample loading is extremely easy and user-friendly, especially with delicate samples. Additionally, sample thermocouples can be placed at specified locations within the chamber. A retort may also be used with the HTBL. The movement of the loading area is fully automated and driven by a hydraulic arm. Once the loading area has reached the lowest position, the user can manually rotate the loading platform outward by 90 °.

Nitrogen, Argon, and Hydrogen gases are available for use as either pure or mixed gas. Other gases may be installed upon request. A slight overpressure or controlled partial pressure, to establish a defined gas flow, can be used in the furnace. Operation with air is not possible.

Various dosing and controlling devices control all gases. Depending on the vacuum requirements, vacuum pumps are configured specifically for the application or as requested. The temperature is independently controlled to achieve the best uniformity.

Standard features

- Metallic furnaces provide precisely defined atmospheres with the highest possible purity (6 N or better)
- Hydrogen partial pressure operation upon request
- Precisely controlled vacuum pumping speeds appropriate for use with powders
- Fully automatic operation
- Data recording for quality management

Technical Specifications



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HTBL 60 MO/16-1G

Insulation material	Molybdenum
Volume (litres)	60
Tmax vacuum (°C)	1600
Dimensions: External H x W x D (mm)	3300 x 2400 x 2200
Transport weight (kg)	3400
Usable space	
Ø x H, usable space without retort (mm)	400 x 500
Ø x H, usable space with retort (mm)	380 x 480
Thermal values	
Tmax atmospheric pressure (°C)	1600
-Delta-T, between 500°C and 2200°C (K) according to DIN 17052	± 10
Max. heat-up rate (K/min)	10
Cooling time (h)	5
Connecting values	
Power (kW)	80
Voltage (V)	400 (3P)
Current (A)	3 x 115
Series fuse (A)	3 x 160
Vacuum (option)	
Leakage rate - clean, cold and empty (mbar l/s)	< 5x10 ⁻³
Vacuum range depending on the pumping unit	rough, fine, high or ultra high vacuum
Cooling water required	
Flow (l/min)	64
Gas supply	
Nitrogen or Argon flow, others on request (l/h)	500-2000
Controller	Siemens

Bottom loading furnace, metal insulation - HTBL MO/W

HTBL 60 W/16-1G

Insulation material	Tungsten
Volume (litres)	60
Tmax vacuum (°C)	2200
Dimensions: External H x W x D (mm)	3300 x 2400 x 2200
Transport weight (kg)	3600
Usable space	
Ø x H, usable space without retort (mm)	400 x 500
Ø x H, usable space with retort (mm)	380 x 480
Thermal values	
Tmax atmospheric pressure (°C)	2200
-Delta-T, between 500°C and 2200°C (K) according to DIN 17052	± 10
Max. heat-up rate (K/min)	10
Cooling time (h)	6
Connecting values	
Power (kW)	250
Voltage (V)	400 (3P)
Current (A)	3 x 360
Series fuse (A)	3 x 500
Vacuum (option)	
Leakage rate - clean, cold and empty (mbar l/s)	< 5x10 ⁻³
Vacuum range depending on the pumping unit	rough, fine, high or ultra high vacuum
Cooling water required	
Flow (l/min)	200
Gas supply	
Nitrogen or Argon flow, others on request (l/h)	500-2000
Controller	Siemens