Laboratory furnace, metal insulation (LHTM/W)

General Information

The unique feature of the LHT high temperature laboratory furnace series is a compact design, making it the perfect tool for laboratories in research and development environments.

The cylindrical usable space of the laboratory furnace is surrounded by the heating elements and insulation material. The heated chamber is integrated into the water cooled vessel. As a result of the small volume, the LHT is ideal for small samples and requires minimal operating space.

The system is supported by a single frame platform which supports the furnace and electronic cabinet containing the software controls. Casters are attached to the supporting platform, which allows the whole system to move easily. For universities and industrial research laboratories, the LHT series is a perfect fit for such operating areas.

The small overall dimensions and simple operation result in a cost effective system without any performance loss in temperature uniformity or atmospheric quality. Additionally, the cylindrical design is best suited for overpressure heat treatment processes. Upon request, the system can be equipped with a suitable locking device and all necessary equipment for safe overpressure operations up to 100 bar.

The metallic LHT models are based on heating elements and radiation shields constructed of tungsten or molybdenum for a maximum temperature of 2200 °C and 1600 °C, respectively. The radiation shields serve to insulate the heat of the heating elements from the water cooled vessel. The metallic LHT systems provide the highest possible atmospheric purity and best final vacuum level. With a turbomolecular pump in combination with a pre-pump, the working vacuum can reach the high vacuum region. An ultra high vacuum configuration is possible upon request.

Standard features

- Compact design suited for laboratories
- Best possible vacuum
- Vacuum level
- Partial pressure 10 - 1000 mbar
- Overpressure operation up to 100 bar possible
- Hydrogen partial pressure operation on demand
- Precisely controlled vacuum pumping speeds appropriate for use with powders
- Data recording for quality management

Technical Specifications

Laboratory furnace, metal insulation (LHTM/W)

LHTM 100-200/16-1G	
Insulation material	Molybdenum
Volume (l)	1.5
Tmax vacuum (°C)	1600
Tmax atmospheric pressure (°C)	1600
Dimensions: External H x W x D (mm)	1800 x 1900 x 1000
Transport weight (kg)	800
Usable space	
Ø x H, usable space without retort (mm)	100 x 200
Ø x H, usable space with retort (mm)	90 x 200
Thermal values	
-Delta-T, between 500°C and 2200°C (K) according to DIN 17052	± 10
Max. heat-up rate (K/min)	10
Cooling time (h)	2.5
Connecting values	
Power (kW)	22
Voltage (V)	400 (3P)
Current (A)	3 x 55
Series fuse (A)	3 x 63
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)	30
Max. inlet temperature (°C)	23
Gas supply	
Nitrogen or Argon flow, others on request (l/h)	50-500
Controller	
Manual operation	Eurotherm with KP 300 panel
Automatic operation	Siemens

Laboratory furnace, metal insulation (LHTM/W)

LHTM 200-300/16-1G	
Insulation material	Molybdenum
Volume (l)	10
Tmax vacuum (°C)	1600
Tmax atmospheric pressure (°C)	1600
Dimensions: External H x W x D (mm)	1800 x 1900 x 1000
Transport weight (kg)	950
Usable space	
Ø x H, usable space without retort (mm)	200 x 300
Ø x H, usable space with retort (mm)	180 x 300
Thermal values	
-Delta-T, between 500°C and 2200°C (K) according to DIN 17052	± 10
Max. heat-up rate (K/min)	10
Cooling time (h)	4
Connecting values	
Power (kW)	45
Voltage (V)	400 (3P)
Current (A)	3 x 65
Series fuse (A)	3 x 80
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)	50
Max. inlet temperature (°C)	23
Gas supply	
Nitrogen or Argon flow, others on request (l/h)	50-500
Controller	
Manual operation	Eurotherm with KP 300 panel
Automatic operation	Siemens

Laboratory furnace, metal insulation (LHTM/W)

LHTW 100-200/22-1G	
Insulation material	Tungsten
Volume (l)	1.5
Tmax vacuum (°C)	2200
Tmax atmospheric pressure (°C)	2200
Dimensions: External H x W x D (mm)	1800 x 1900 x 1000
Transport weight (kg)	850
Usable space	
Ø x H, usable space without retort (mm)	100 x 200
Ø x H, usable space with retort (mm)	90 x 200
Thermal values	
-Delta-T, between 500°C and 2200°C (K) according to DIN 17052	± 10
Max. heat-up rate (K/min)	10
Cooling time (h)	3
Connecting values	
Power (kW)	45
Voltage (V)	400 (3P)
Current (A)	3 x 112.5
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)	50
Max. inlet temperature (°C)	23
Gas supply	
Nitrogen or Argon flow, others on request (l/h)	50-500
Controller	
Manual operation	Eurotherm with KP 300 panel
Automatic operation	Siemens

Laboratory furnace, metal insulation (LHTM/W)

LHTW 200-300/22-1G	
Insulation material	Tungsten
Volume (l)	10
Tmax vacuum (°C)	2200
Tmax atmospheric pressure (°C)	2200
Dimensions: External H x W x D (mm)	1800 x 1900 x 1000
Transport weight (kg)	1000
Usable space	
Ø x H, usable space without retort (mm)	200 x 300
Ø x H, usable space with retort (mm)	180 x 300
Thermal values	
-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)	90
Voltage (V)	400 (3P)
Current (A)	3 x 130
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)	75
Max. inlet temperature (°C)	23
Gas supply	
Nitrogen or Argon flow, others on request (l/h)	50-500
Controller	
Manual operation	Eurotherm with KP 300 panel
Automatic operation	Siemens