High-temperature furnace LHT 03/17 D

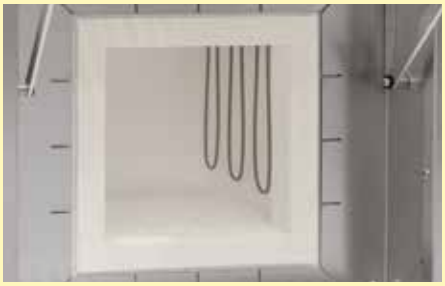
High-temperature furnace LHT 08/18

Model	Tmax	Inner dimensions in mm			Volume	Outer dimensions[1] in mm			Max. connected	Electrical	Weight	Heating time
	in °C	w	d	h	in l	W	D	H[2]	load in kW	connection*	in kg	in min[3]
LHT 02/16	1600	130	145	130	2	430	450	570+325	2.7	1-phase	33	28
LHT 04/16	1600	160	175	160	4	450	475	610+335	2.7	1-phase	39	50
LHT 08/16	1600	200	200	200	8	500	500	650+370	5.3	3-phase[4]	47	33
LHT 01/17 D	1650	110	120	120	1	385	425	525+195	2.7	1-phase	28	27
LHT 03/17 D	1650	135	135	200	4	412	450	595+300	2.7	1-phase	38	57
LHT 02/17	1750	130	145	130	2	430	450	570+325	2.7	1-phase	33	46
LHT 04/17	1750	160	175	160	4	450	475	610+335	2.7	1-phase	39	90
LHT 08/17	1750	200	200	200	8	500	500	650+370	5.3	3-phase[4]	47	50
LHT 02/18	1800	130	145	130	2	430	450	570+325	2.7	1-phase	33	56
LHT 04/18	1800	160	175	160	4	450	475	610+335	2.7	1-phase	39	106
LHT 08/18	1800	200	200	200	8	500	500	650+370	5.3	3-phase[4]	47	60

[1]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.
[2]Including opened lift door
[3]Heating time of the empty and closed furnace up to Tmax –100 K (connected to 230 V 1/N/PE rsp. 400 V 3/N/PE)

*Please see page 84 for more information about supply voltage
[4]Heating only between two phases

Saggars with top lid



Furnace chamber with high-quality fiber materials and heating elements made of molybdenum disilicide on both sides

Example of an over-temperature limiter

High-Temperature Furnaces with SiC Rod Heating up to 1600 °C

These powerful laboratory muffle furnaces are available for temperatures up to 1550 °C or 1600 °C. The durability of the SiC rods in periodic use, in combination with their high heating speed, make these high-temperature furnaces to all-rounders in the laboratory. Heating times of 25 - 30 minutes can be achieved, depending on the furnace model and the conditions of use.

High-temperature furnace LHTCT 01/16

Standard Equipment

- Tmax 1550 °C or 1600 °C
- Working temperature 1500 °C (for high-temperature furnaces LHTC ../16), increased wear and tear must be expected in case of working at higher temperatures
- Optional flap door (LHTC) which can be used as work platform or lift door (LHTCT) with hot surface facing away from the operator (High-temperature furnace LHTCT 01/16 only with lift door)
- Switching system with solid-state-relays, power tuned to the SiC rods
- Easy replacement of heating rods
- Adjustable air inlet opening, exhaust air opening in the roof
- Controller with touch operation C550 (10 programs with each 20 segments) see page 84

Additional Equipment

- Over-temperature limiter with adjustable cutout temperature as temperature limiter to protect the furnace and load
- Protective gas connection to purge with non-flammable process, not gas tight
- Manual or automatic gas supply system

Model	Tmax	Inner dimensions in mm			Volume	Outer dimensions[1] in mm			Max. connected	Electrical	Weight	Heating time
	in °C	w	d	h	in l	W	D	H[2]	load in kW	connection*	in kg	in min[3]
LHTCT 01/16	1550	110	120	120	1.5	340	335	485	3.5	1-phase	20	30
LHTC(T) 03/16	1600	120	210	120	3.0	415	545	490	8.5	3-phase[4]	38	30
LHTC(T) 08/16	1600	170	290	170	8.0	490	625	540	12.5	3-phase	58	25

[1]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.
[2]Plus maximum 255 mm for models LHTCT when open
[3]Heating time of the empty and closed furnace up to Tmax −100 K (connected to 230 V 1/N/PE rsp. 400 V 3/N/PE)

*Please see page 84 for more information about supply voltage
[4]Heating only between two phases

High-temperature furnace LHTC 08/16

Gas supply system for non-flammable process gas

Furnace chamber with high-quality fiber materials and SiC heating rods on both sides of the furnace

High-Temperature Bottom Loading Furnaces with Molybdenum Disilicide Heating Elements and Fiber Insulation up to 1650 °C

The electrically driving lifting table significantly simplifies the charging of the high-temperature furnaces LHT ../.. LB Speed. The heating all around the cylindrical furnace chamber provides for an opitimal temperature uniformity.

High-temperature furnace LHT 02/17 LB Speed with a set of saggars

Standard Equipment

- Tmax 1650 °C
- High-quality heating elements made of molybdenum disilicide offer very good protection against chemical interaction between charge and heating elements
- Very good temperature uniformity thanks to three (LHT 02/17 LB Speed) or four-sided (LHT 01/17 LB Speed) heating of the furnace chamber
- Furnace chamber with a volume of 1 or 2 liters, table with large floor space
- Precise, motorized toothed belt drive of the table with button operation
- Opening time of table approx. 30 sec., completely open
- Exhaust air vent in the roof
- Type S thermocouple
- Controller with touch operation P580 (50 programs with each 40 segments), controls description see page 84

Additional Equipment

- Over-temperature limiter with adjustable cutout temperature as temperature limiter to protect the furnace and load
- Stackable saggars for loading in up to two or three levels, depending on model
- Reduced opening time of table to 10 sec., completely open
- Adjustable air inlet through the floor

Model	Tmax	Work space dimensions[2] in mm			Charging area in mm		Volume	Outer dimensions[1] in mm			Max. connected	Electrical	Weight
	in °C	w	d	h	w	d	in l	W	D	H	load in kW	connection*	in kg
LHT 01/17 LB Speed	1650	75	110	60	95	130	1	350	590	695	2.9	1-phase	45
LHT 02/17 LB Speed	1650	Ø 115		140	135	135	2	390	590	785	3.3	1-phase	55

[1]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.
[2]Corresponds to charge saggars with spacer

*Please see page 84 for more information about supply voltage

Electrically driven lift-bottom

Saggar

Furnace chamber heated on four sides for model LHT 01/17 LB Speed

High-Temperature Furnaces with Scale for Determination of Combustion Loss and Thermogravimetric Analysis (TGA) up to 1750 °C

These high-temperature furnaces were specially developed to determine combustion loss during annealing and for thermogravimetric analysis (TGA) in the lab. The complete system consists of the high-temperature furnace for 1600 °C or 1750 °C, a table frame, precision scale with feedthroughs into the furnace and powerful software for recording both the temperature curve and the weight loss over time.

High-temperature furnace LHT 04/16 SW with scale for measuring weight reduction during annealing

Standard Equipment

- Tmax 1600 °C or 1750 °C
- High-quality molybdenum disilicide heating elements
- Adjustable air inlet
- Exhaust air opening in the roof
- Type B thermocouple
- Delivery includes base, ceramic plunger with base plate in the furnace lining, precision scale and software package
- 4 scales available for different maximum weights and scaling ranges
- Process control and documentation for temperature and combustion loss via VCD software package for monitoring, documentation and control see page 84

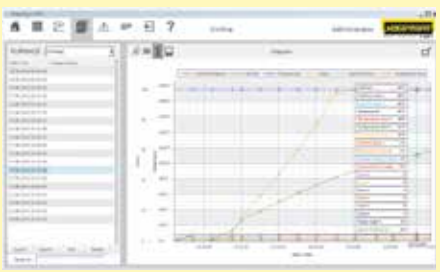
Model	Tmax	Inner dimensions in mm			Volume	Outer dimensions[1] in mm			Connected	Electrical	Weight	Heating time
	in °C	w	d	h	in l	W	D	H	load in kW	connection*	in kg	in min[2]
LHT 04/16 SW	1600	150	150	150	4	655	370	890	5.0	3-phase[3]	85	25
LHT 04/17 SW	1750	150	150	150	4	655	370	890	5.0	3-phase[3]	85	30

[1]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.
[2]Heating time of the empty and closed furnace up to Tmax −100 K (connected to 230 V 1/N/PE rsp. 400 V 3/N/PE)
[3]Heating only between two phases

*Please see page 84 for more information about supply voltage

Scale type	Readability in g	Maximum weighing range in g	Weight of plunger in g	Calibration value in g	Minimum load in g
EW-2200	0.01	2200 incl. plunger	850	0.1	0.5
EW-4200	0.01	4200 incl. plunger	850	0.1	0.5
EW-6200	0.01	6200 incl. plunger	850	-	1.0
EW-12000	0.10	12000 incl. plunger	850	1.0	5.0

4 scales available for different maximum weights and scaling ranges



Graphic display of process curve

High-quality molybdenum disilicide heating elements

Combi High-Temperature Furnace LHT 08/17 BO up to 1750 °C with Integrated Catalytic Post Combustion

The combi furnace LHT 08/17 BO complements the muffle furnaces L ../11 BO (see page 14) and provides a solution for debinding/ashing processes up to 600 °C with subsequent sintering processes at high temperatures. Specified with a maximum temperature of 1750 °C, the LHT 08/17 BO can be used for process temperatures up to 1700 °C. The compact size of the furnace makes it ideal for research and development applications but also for debinding and sintering of small additively manufactured components. The furnace can also be used to determine loss on ignition where, after the ashing process, the samples must be treated at temperatures above 1050 °C.

The combi furnace LHT 08/17 BO has a passive safety system with integrated exhaust gas post combustion. Fresh air is fed through the back of the furnace via an exhaust gas fan so that there is always sufficient oxygen available for the process. The incoming air is guided past the furnace heating and preheated which ensures good temperature uniformity. At the same time, exhaust gases are extracted from the furnace to the integrated post combustion system, where they are incinerated and catalytically cleaned.

Combi furnace LHT 08/17 BO

Standard Design

- Tmax 1750 °C
- Tmax 600 °C for the debinding/ashing process
- Recommended maximum working temperature approx. 50 °C below Tmax of the furnace. Higher working temperatures will increase wear and tear.
- Heating from two sides
- Spring-supported door closing (lift door) with mechanical lock to prevent unintended opening
- Thermal/catalytic post combustion in the exhaust air duct, to max. 600 °C furnace temperature in operation
- Temperature control of post combustion adjustable to 850 °C
- Fresh air preheated by additional heating element on the back wall of the furnace chamber
- Controller with touch operation P580 (50 programs each with 40 segments), for a description of the controls see page 84

Model	Tmax	Inner dimensions in mm			Volume	Outer dimensions[2] in mm			Max. loading weight of organic substances	Max. evaporation rate of organic substances	Connected load	Electrical	Weight
	in °C[1]	w	d	h	in l	W	D	H[3]	in g	g/min	in kW	connection*	in kg
LHT 08/17 BO	1750	150	250	150	6	530	705	695	75	1	13	3-phase	90

[1]Tmax 600 °C for the debinding/ashing process
[2]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.
[3]Including exhaust tube (Ø 80 mm)

*Please see page 84 for more information about supply voltage

Combi furnace LHT 08/17 BO

High-temperature heating in furnace chamber

Schematic representation of the air flow in combi furnace LHT 08/17 BO