High-Temperature Furnaces up to 1800 °C

In order to achieve the desired mechanical properties of ceramic parts, the components must be sintered at high temperatures after debinding. With the high-temperature chamber furnaces as table-top or floor-standing models for maximum temperatures between 1400 °C and 1800 °C, Nabertherm offers a wide range of furnace solutions that enable later scale-up for production.

The following equipment applies to all furnaces in this chapter:

- Dual shell ventilated housing made of textured stainless steel sheets for low surface temperature and high stability
- Stainless steel exhaust hood as interface to customer's exhaust system for all standing models
- Exclusive use of insulation materials without categorization according to EC Regulation No 1272/2008 (CLP). This explicitly means that alumino silicate wool, also known as "refractory ceramic fiber" (RCF), which is classified and possibly carcinogenic, is not used.
- Defined application within the constraints of the operating instructions
- Controller with intuitive touch operation
- NTLog Basic for Nabertherm controller: recording of process data with USB-flash drive
- Freeware NTEdit for convenient program input via Excel™ for Windows™ on the PC
- Freeware NTGraph for evaluation and documention of firings using Excel™ for Windows™ on the PC
- MyNabertherm App for online monitoring of the firing on mobile devices for free download
- As additional equipment: Process control and documentation via VCD software package for monitoring, documentation and control

Furnace Group	Model	Page
High-temperature furnaces with $MoSi_2$ heating elements Table-top model up to 1800 °C	LHT	60
High-temperature furnaces with SiC rod heating Table-top model up to 1600 °C	LHTC(T)	62
High-temperature bottom loading furnaces up to 1650 °C	LHT .. LB	63
High-temperature furnaces with scale up to 1750 °C	LHT .. SW	64
Combi high-temperature furnace LHT 08/17 BO up to 1750 °C with integrated catalytic post combustion	LHT .. BO	65
High-temperature furnaces with $MoSi_2$ heating elements Floor-standing model up to 1800 °C	HT	66
High-temperature furnaces with SiC rod heating Floor-standing model up to 1550 °C	HTC	68
High-temperature furnaces with $MoSi_2$ heating elements Refractory brick insulation up to 1700 °C	HFL	69

High-Temperature Furnaces with Molybdenum Disilicide Heating Elements up to 1800 °C

Designed as tabletop models, these compact high-temperature furnaces have a variety of advantages. The first-class workmanship using high-quality materials, combined with ease of operation, make these furnaces all-rounders in research and the laboratory. These high-temperature furnaces are also perfectly suited for the sintering of technical ceramics, such as zirconium oxide dental bridges.

High-temperature furnace LHT 02/17

High-temperature furnace LHT 01/17 D

Standard Equipment

- Tmax 1600 °C, 1750 °C, or 1800 °C
- Recommended working temperature 1750 °C (for models LHT ../18), increased wear and tear must be expected in case of working at higher temperatures
- High-quality heating elements made of molybdenum disilicide offer very good protection against chemical interaction between charge and heating elements
- Adjustable air inlet opening
- Exhaust air opening in the roof
- Thermocouple type B or type S (LHT ../17 D)
- 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
- Port for thermocouple in the furnace roof
- Protective gas connection to purge with non-flammable process, not gas tight
- Manual or automatic gas supply system
- Stackable saggars for loading in up to two or three levels, depending on model, see page 17

High-temperature furnace LHT 03/17 D

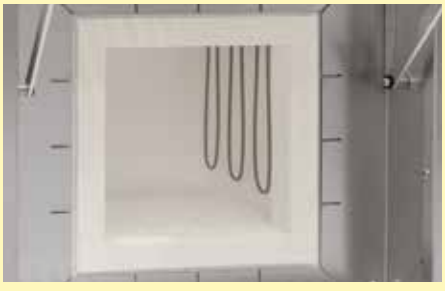
High-temperature furnace LHT 08/18

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	3-phase[4]	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	3-phase[4]	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	3-phase[4]	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	8.2	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, see page 17
- 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

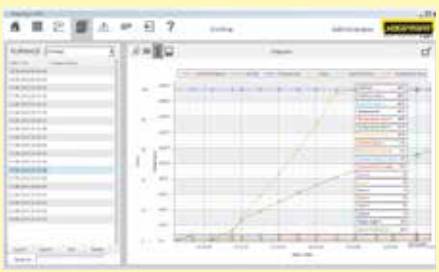
Model	Tmax	Inner dimensions in mm			Volume	Outer dimensions[1] in mm			Connected	Electrical	Weight	Heating time
	in °C	w	d	h	in l	W	D	H	load in kW	connection*	in kg	in min[2]
LHT 04/16 SW	1600	150	150	150	4	655	370	890	5.0	3-phase[3]	85	25
LHT 04/17 SW	1750	150	150	150	4	655	370	890	5.0	3-phase[3]	85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

High-Temperature Furnaces with Molybdenum Disilicide Heating Elements with Fiber Insulation up to 1800 °C

Due to their solid construction and compact stand-alone design, these high-temperature furnaces are perfect for processes in the laboratory where the highest precision is needed. Oustanding temperature uniformity and practical details set very high quality benchmarks. For configuration for your processes, these furnaces can be extended with extras from our extensive option list.

High-temperature furnace HT 29/17

Standard Equipment

- Tmax 1600 °C, 1750 °C, or 1800 °C
- Recommended maximum working temperature approx. 50 °C below Tmax of the furnace. Higher working temperatures will increase wear and tear.
- Heating from both sides via molybdenum disilicide heating elements
- High-quality fiber insulation backed by special insulation
- Long-life roof insulation with special suspension
- Temperature uniformity at 1450 °C up to +/– 6 °C according to DIN 17052-1 see page 77
- Chain-guided parallel swivel door for precise opening and closing of the door
- Two-door design (front/back) for high-temperature furnaces from HT 276/..
- Labyrinth sealing ensures the least possible temperature loss in the door area
- Reinforced floor as protection for bottom insulation as standard from models HT 16/16 upwards (distributed load 5 kg/dm^2)
- Vapor vent in the furnace roof with motorized exhaust air flaps, controlled via the extra function of the controller
- Stainless steel exhaust hood as interface to customer's exhaust system
- Controller with touch operation P570 (50 programs with each 40 segments), controls description see page 84

High temperature chamber furnace HT 450/16 with two locking devices per door

Additional Equipment

- Cooling system to cool the furnace with a defined temperature gradient or with a preset fresh air volume. Both operating modes can be switched on and off for different segments by means of the extra function of the controller.
- Safety package for debinding in air. Debinding technical ceramics is a critical process because of the hydrocarbons that are released. Hydrocarbons are flammable and there is a risk that a flammable mixture could form inside the furnace. Nabertherm offers tailored safety packages with respect to the process and the volume of binder that allow the furnace to be operated safely.
- Thermocouple inlet with screw cap
- Thermocouple for the heating control with calibration certificate
- Protective gas connection to purge with non-flammable process gases (not completely gas-tight)
- Automatic gas supply system with solenoid valve and rotameter, controlled by the extra function of the controller
- Refractory brick floor insulation for a higher floor load (Tmax 1700 °C)
- Lift door
- Automatic door lock incl. door contact switch
- Heating elements protected against mechanical damage
- Special heating element qualities e. g. for zircon oxide applications
- Ethernet interface

High-temperature furnace HT 160/17 with gas supply system

High-temperature furnace HT 64/17 with PLC controls and additional options

Model	Tmax	Inner dimensions in mm			Volume	Outer dimensions[1] in mm			Connected	Electrical	Weight
	°C	w	d	h	in l	W	D	H	load kW	connection*	in kg
HT 08/16	1600	150	300	150	8	740	640	1755	8.5	3-phase[2]	215
HT 16/16	1600	200	300	260	16	820	690	1860	12.5	3-phase[2]	300
HT 29/16	1600	275	300	350	29	985	740	1990	9.8	3-phase[2]	350
HT 40/16	1600	300	350	350	40	1010	800	1990	12.5	3-phase	420
HT 64/16	1600	400	400	400	64	1140	890	2040	18.5	3-phase	555
HT 128/16	1600	400	800	400	128	1140	1280	2040	26.5	3-phase	820
HT 160/16	1600	500	550	550	160	1250	1040	2260	21.5	3-phase	760
HT 276/16	1600	500	1000	550	276	1340	1600	2290	43.5	3-phase	1270
HT 450/16	1600	500	1150	780	450	1380	1820	2570	65.0	3-phase	1570
HT 08/17	1750	150	300	150	8	740	640	1755	8.5	3-phase[2]	215
HT 16/17	1750	200	300	260	16	820	690	1860	12.5	3-phase[2]	300
HT 29/17	1750	275	300	350	29	985	740	1990	9.8	3-phase[2]	350
HT 40/17	1750	300	350	350	40	1010	800	1990	12.5	3-phase	420
HT 64/17	1750	400	400	400	64	1140	890	2040	18.5	3-phase	555
HT 128/17	1750	400	800	400	128	1140	1280	2040	26.5	3-phase	820
HT 160/17	1750	500	550	550	160	1250	1040	2260	21.5	3-phase	760
HT 276/17	1750	500	1000	550	276	1340	1600	2290	43.5	3-phase	1270
HT 450/17	1750	500	1150	780	450	1380	1820	2570	65.0	3-phase	1570
HT 08/18	1800	150	300	150	8	740	640	1755	8.5	3-phase[2]	215
HT 16/18	1800	200	300	260	16	820	690	1860	12.5	3-phase[2]	300
HT 29/18	1800	275	300	350	29	985	740	1990	9.8	3-phase[2]	350
HT 40/18	1800	300	350	350	40	1010	800	1990	12.5	3-phase	420
HT 64/18	1800	400	400	400	64	1140	890	2040	18.5	3-phase	555
HT 128/18	1800	400	800	400	128	1140	1280	2040	26.5	3-phase	820
HT 160/18	1800	500	550	550	160	1250	1040	2260	21.5	3-phase	760
HT 276/18	1800	500	1000	550	276	1340	1600	2290	43.5	3-phase	1270
HT 450/18	1800	500	1150	780	450	1380	1820	2570	65.0	3-phase	1570

[1]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.
[2]Heating only between two phases

*Please see page 84 for more information about supply voltage

Automatic gas supply system with solenoid valve and rotameter

Two-door design for high-temperature furnaces > HT 276/..

High-temperature furnace HT 160/18 DB200-3 with lift door

High-Temperature Furnaces with SiC Rod Heating and Fiber Insulation up to 1550 °C

The high-temperature furnaces HTC 16/16 - HTC 450/16 are heated by vertically hung SiC rods, which makes them especially suitable for sintering processes up to a maximum operating temperature of 1500 °C. For some processes, e. g. for sintering zirconium oxide, the reduction of interactivity between the charge and the SiC rods, these models are more suitable than the alternatives heated with molybdenum disilicide elements. The basic construction of these furnaces make them comparable with the already familiar models in the HT product line and they can be upgraded with the same additional equipment.

High-temperature furnace HTC 160/16

Standard Equipment

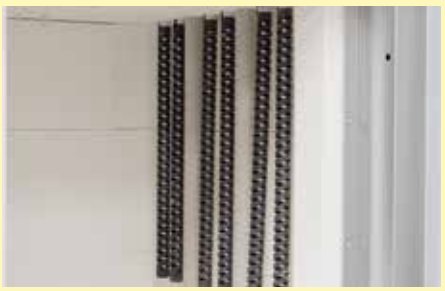
- Tmax 1550 °C
- Recommended maximum working temperature approx. 50 °C below Tmax of the furnace. Higher working temperatures will increase wear and tear.
- Heating from both sides via vertically mounted SiC rods
- High-quality fiber insulation backed by special insulation
- Long-life roof insulation with special suspension
- Temperature uniformity at 1450 °C up to +/– 6 °C according to DIN 17052-1 see page 77
- Chain-guided parallel swivel door for precise opening and closing of the door
- Two-door design (front/back) for high-temperature furnaces from HTC 276/.. up
- Labyrinth sealing ensures the least possible temperature loss in the door area
- Reinforced floor as protection for bottom insulation (distributed load 5 kg/dm²)
- Vapor vent in the furnace roof with motorized exhaust air flap, controlled via the extra function of the controller
- Stainless steel exhaust hood as interface to customer's exhaust system
- Controller with touch operation P570 (50 programs with each 40 segments), controls description see page 84

Additional Equipment like HT models see page 66

Model	Tmax	Inner dimensions in mm			Volume	Outer dimensions[1] in mm			Heating Power	Connected	Electrical	Weight
	in°C	w	d	h	in l	W	D	H	in kW	load in kW	connection*	in kg
HTC 16/16	1550	200	300	260	16	820	690	1860	12.0	16.5	3-phase[2]	220
HTC 40/16	1550	300	350	350	40	1010	800	1990	12.0	16.5	3-phase	420
HTC 64/16	1550	400	400	400	64	1140	890	2040	18.0	41.5	3-phase	660
HTC 128/16	1550	400	800	400	128	1140	1280	2040	26.0	61.0	3-phase	550
HTC 160/16	1550	500	550	550	160	1250	1040	2260	21.0	40.0	3-phase	535
HTC 276/16	1550	500	1000	550	276	1340	1600	2290	36.0	73.0	3-phase	1300
HTC 450/16	1550	500	1150	780	450	1380	1820	2570	64.0	118.0	3-phase	1450

[1]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.
[2]Heating only between two phases

*Please see page 84 for more information about supply voltage



Vertically mounted SiC rods and optional perforated air inlet tubes of the debinding system in a high-temperature furnace

Two-door design for high-temperature furnaces > HT 276/..

Cooled inspection glass made out of saphire glass (left at working temperature, right at room temperature)

High-Temperature Furnaces with Molybdenum Disilicide Heating Elements and Refractory Brick Insulation up to 1700 °C

High-temperature furnaces HFL 16/16 - HFL 160/17 have a sturdy cladding made from refractory insulation. This design offers better protection if the process produces aggressive gases or acids, such as when glass is melted.

High-temperature furnace HFL 16/17 DB50 with gas supply system

Standard Equipment

Like high-temperature furnaces HT (see page 66), except:

- Tmax 1600 °C or 1700 °C
- Robust refractory brick insulation and special backing insulation
- Furnace floor made of lightweight refractory bricks accommodates higher charge weights

Additional Equipment

- Cooling system to cool the furnace with a defined temperature gradient or with a preset fresh air volume. Both operating modes can be switched on and off for different segments by means of the extra function of the controller.
- Thermocouple inlet with screw cap
- Thermocouple for the heating control with calibration certificate
- Protective gas connection to purge with non-flammable process gases (not completely gas-tight)
- Automatic gas supply system with solenoid valve and rotameter, controlled by the extra function of the controller
- Lift door
- Automatic door lock incl. door contact switch
- Heating elements protected against mechanical damage
- Ethernet interface

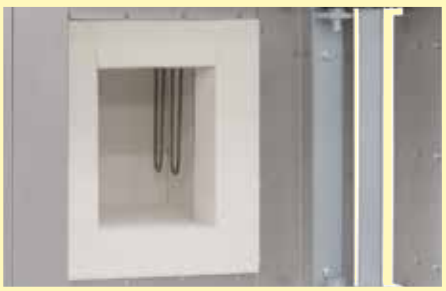
Model	Tmax	Inner dimensions in mm			Volume	Outer dimensions[1] in mm			Connected	Electrical	Weight
	in °C	w	d	h	in l	W	D	H	load in kW	connection*	in kg
HFL 16/16	1600	200	300	260	16	1010	890	1990	12.5	3-phase[2]	530
HFL 40/16	1600	300	350	350	40	1140	940	2260	12.5	3-phase	735
HFL 64/16	1600	400	400	400	64	1240	990	2310	18.5	3-phase	910
HFL 160/16	1600	500	550	550	160	1410	1240	2490	21.5	3-phase	1290
HFL 16/17	1700	200	300	260	16	1010	890	1990	12.5	3-phase[2]	530
HFL 40/17	1700	300	350	350	40	1140	940	2260	12.5	3-phase	735
HFL 64/17	1700	400	400	400	64	1240	990	2310	18.5	3-phase	910
HFL 160/17	1700	500	550	550	160	1410	1240	2490	21.5	3-phase	1290

[1]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.
[2]Heating only between two phases

*Please see page 84 for more information about supply voltage

Automatic gas supply system with solenoid valve and rotameter

Protection of heating elements against mechanical damage during loading and unloading as additional equipment



Light-weight refractory bricks and heating elements made from molybdenum disilicide