

# Arts & Crafts



## Furnaces and Accessories

**Pottery**  
**Porcelain Painting**  
**Glass Painting**  
**Fusing**  
**Decorating**  
**Enamelling**  
**Raku**



### **Made in Germany**

Nabertherm, and our more than 300 employees worldwide, has been developing and producing industrial furnaces and heat treatment systems for many different applications for over 60 years. 150,000 satisfied customers in 100 countries offer proof of our commitment to build quality equipment cost-effectively. Short delivery times are ensured thanks to our diverse range of products and wide variety of standard furnaces.

Long term sales and distribution partners in all important world markets ensure individual on-site customer service and consultation.



### **Setting Standards in Quality and Reliability**

Our products range from a standard chamber furnace to technically sophisticated high-temperature and vacuum furnaces. A variety of accessories are available to adapt standard furnaces to your particular needs. The innovative Nabertherm automation and control technology enables precise control, monitoring, and documentation of processes.



The depth of our product range guarantees the application flexibility of our furnaces. Applications such as ashing and burn-off, heat treatment, drying, and manufacturing of bioceramics are just a few examples of the many uses for our furnaces.

Technical details such as the double-wall stainless steel housings on most of our furnaces mean both energy efficiency and a long service life, ensuring your decisive competitive advantage.

### **Time is Money**

We know you need your ceramic or fusing kiln fast so you can perform your firing or production runs on schedule. And, especially in this important area, we won't let you down. That's why many models can be shipped directly from the warehouse. We also ensure fast delivery times for specially made furnaces.

### **Customer Service and Replacement Parts**

Experts in our customer service team are available to answer any questions you may have. Whether on-site, by telephone, or by e-mail, our service technicians will solve your problem. We are particularly proud of our replacement parts service. We send you most replacement parts anywhere in the world in the shortest possible time – and at fair prices, no matter how old your furnace is.

### **Experience in Many Applications**

Nabertherm offers a wide range of standard furnaces for application in diverse areas including arts & crafts and beyond. Many ceramic and glass kilns are available in larger versions to accommodate your production needs. Our experienced engineering team views customer-specific solutions as a challenge. We are also happy to provide consulting services for custom system solutions.

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## Top Loaders, round/oval



Top 190

Top 45  
with raised base (option)

## Top Loaders, round/oval

### Top 45 - Top 220

Attractive design, energy-efficient construction and excellent firing results are only a few of the features of our top loaders Top 45 to Top 220. Casters are supplied standard for increased mobility so that your kiln is always right where you need it.

#### Top quality:

- Heating from all sides, elements embedded in grooves for protection
- Long-lasting, heavy-gauge heating elements
- Solid-state relays for silent operation
- Fast power switching for precise temperature uniformity
- Thermocouple Type S
- Lid interlock safety switch shuts down power to the elements when the lid is opened
- Multi-layer lining with light weight insulation bricks for a cooler shell and low power consumption
- Chamfered brick edges and mortar-free lid minimize kiln dirt contamination
- Clean, professional design in a high-temperature stainless steel housing
- Lid with adjustable quick-release lock and padlock hasp
- Wear-resistant lid sealing (brick surface on both ends)
- Counter balanced, spring loaded lid for easy opening and closing
- Infinitely adjustable inlet air opening in the kiln bottom for improved ventilation and reduced cooling time
- Air outlet on the side of the kiln with a bleed air collar, 80 mm diameter
- Lockable castors included
- GS safety mark for controlled safety, CE
- Raised base for Top 45 and Top 60 (optional)
- Bottom heating for Top 140 and Top 190 as option and manual zone regulation if desired
- For control system see page 22



Top 220

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H			
Top 45eco	1300	Ø 410		340	45	580	750	670	2,9	1-phase	60
Top 45	1300	Ø 410		340	45	580	750	670	3,6	1-phase	60
Top 60/Leco	1200	Ø 410		460	60	580	750	800	2,9	1-phase	72
Top 60	1200	Ø 410		460	60	580	750	800	3,6	1-phase	72
Top 60eco	1300	Ø 410		460	60	580	750	800	3,6	1-phase	72
Top 60/R	1300	Ø 410		460	60	580	750	800	5,5	3-phase <sup>1</sup>	72
Top 100	1300	Ø 480		575	100	660	830	910	7,0	3-phase	100
Top 140	1300	Ø 550		575	140	750	920	910	9,0	3-phase	120
Top 190	1300	Ø 590		690	190	790	960	1020	12,0	3-phase	150
Top 220	1300	930	590	460	220	1170	1000	960	15,0	3-phase	160



Bottom heating for Top 140 and Top 190

<sup>1</sup>Heating only between two phases

\*Please see page 22 for more information about supply voltage



Top 60



Top 100



Top 140



Top 190

## Top Loaders, round



### Top 16/R

The small but powerful Top 16/R is the ideal kiln for hobby ceramics, porcelain painting, and for small fusing jobs. This reasonably priced kiln model is also suitable for glazing samples and small pieces. This compact all-rounder is capable of doing everything larger models can do.

#### Top quality:

- Heating from all sides, elements embedded in grooves for protection
- Long-lasting, heavy-gauge heating elements
- Solid-state power control relays for silent operation
- Fast power switching for precise temperature uniformity
- Thermocouple Type S
- Lid interlock safety switch shuts down power to the elements when the lid is opened
- Clean, professional design in a high-temperature stainless steel housing
- Lid with adjustable quick-release lock and padlock hasp
- Wear-resistant lid sealing (brick surface on both ends)
- Chamfered brick edges and mortar-free lid minimize kiln dirt contamination
- Infinitely adjustable air inlet opening in the kiln bottom for improved ventilation and reduced cooling time
- Air outlet on the side of the kiln
- GS safety mark for controlled safety, CE
- Lightweight and easy to move
- For control system see page 22

Model	Tmax °C	Inner dimensions in mm		Volume in l	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		Ø	h		W	D	H			
Top 16/R	1300	280	230	16	440	700	470	2,6	1-phase	22

\*Please see page 22 for more information about supply voltage



## Top Loaders, square, heated from 5 Sides



HO 300



HO 70/R

### Top Loaders HO 70/L - HO 300

The square top loaders from Nabertherm are extremely rugged. Heated from four walls and the floor with the elements protected in grooves.

#### Top quality:

- Heating from all sides and bottom, elements embedded in grooves for protection
- Long-lasting, heavy-gauge heating elements
- Solid-state power control relays for silent operation
- Fast power switching for precise temperature uniformity
- Thermocouple Type S
- Lid safety switch shuts down power to the elements when the lid is opened
- Multi-layer lining with light weight insulation bricks and microporus insulation for a cooler shell and low power consumption
- Chamfered brick edges minimize kiln dirt contamination
- Robust, rust resistant, low-maintenance stainless steel housing
- Lid with adjustable quick-release lock and padlock hasp
- Wear-resistant lid sealing (brick surface on both ends)
- Gas-spring supports for easy lid opening and closing
- Castors for easy transport of the kiln without raising, lockable (HO 70 - HO 100)
- Delivery includes ceramic shelf
- Infinitely adjustable air inlet opening in the kiln bottom for improved ventilation and reduced cooling time
- Air outlet on the side of the kiln with a bleed air collar, 80 mm diameter
- GS safety mark for controlled safety, CE
- For control system see page 22



Firing chamber with heating from 5 sides

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H			
HO 70/L	1200	440	380	420	70	640	770	780	3,6	1-phase	120
HO 70/R	1300	440	380	420	70	640	770	780	5,5	3-phase <sup>1</sup>	120
HO 100	1300	480	430	490	100	680	820	850	5,5	3-phase <sup>1</sup>	160
HO 300	1300	920	570	610	320	1440	1015	950	15,0	3-phase	430

<sup>1</sup>Heating only between two phases

\*Please see page 22 for more information about supply voltage

## Chamber Kilns, heated from 2 Sides



**N 40 E**  
as tabletop device



**N 60 E**  
with base (optional)

### N 40 E - N 100 E

These chamber furnaces impress with their attractive price, appealing design and their excellent craftsmanship. The models N 40 E - N 100 E are ideally suitable for decorating porcelain and glass as well as pottery and fusing applications.

#### Top quality:

- Tabletop mounting
- Optional base available
- Heating from both sides with high-quality heating elements, protected in grooves
- Long-lasting, heavy-gauge heating elements
- Solid-state relays for silent operation
- Fast power switching for precise temperature uniformity
- Thermocouple Type S
- Double-walled door with low outside temperatures
- Door safety switch shuts down power to the elements when the door is opened
- Multi-layered lining with light weight insulation bricks and microporus insulation for a cooler shell and low power consumption
- Robust, rust resistant, low-maintenance stainless steel housing
- Infinitely adjustable air inlet opening in the kiln door for improved ventilation and reduced cooling time
- GS safety mark for controlled safety, CE
- Air outlet in the ceiling
- For control system see page 22

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H			
N 40 E	1300	360	400	320	40	560	690	570	2,9	1-phase	70
N 60 LE	1200	360	400	440	60	560	690	690	2,9	1-phase	90
N 60 E	1300	360	400	440	60	560	690	690	3,6	1-phase	90
N 100 E	1300	360	610	440	100	560	1035	690	5,5	3-phase <sup>1</sup>	115

<sup>1</sup>Heating only between two phases

\*Please see page 22 for more information about supply voltage



## Chamber Kilns, heated from 3 Sides



N 140 E



N 500 E

### N 140 E - N 500 E

Heated from the left and right walls and floor and positioned at an ergonomic height, these models are an economical solution for schools and other institutions with a limited capital budget. These furnaces are ideal for operating temperatures of approx. 900 °C - 1300 °C.

Top quality:

- Heated from two walls and the floor
- Heating elements embedded in grooves for protection (N 140 E - N 280 E)
- Freely radiating heating elements placed on supporting tubes (N 500 E)
- Long-lasting, heavy-gauge heating elements
- Special arrangement of heating elements for optimal temperature uniformity
- Solid-state power control relays for silent operation (N 140 E - N 280 E)
- Fast power switching for precise temperature uniformity
- Thermocouple Type S
- Door safety switch shuts down power to the elements when the door is opened
- Multi-layered lining with light weight insulation bricks and microporus insulation for a cooler shell and low power consumption
- Rugged, self-supporting, vaulted arch construction
- Solid, double-walled door with long-life sealing
- Door is adjustable and can be locked with padlock
- Rugged housing design
- Kiln floor plate included in delivery
- Environment-friendly, long-life powder-coating of housing
- Infinitely adjustable inlet air opening
- Air outlet in the center of the ceiling ensures good circulation in the furnace chamber
- Socket for connection of an exhaust tube (80 mm diameter) for N 140 E - N 280 E, ceiling flap for N 500 E included in scope of supply
- Base included
- GS safety mark for controlled safety, CE
- As option: Double-walled housing for low outside temperatures. Already standard with model N 500 E
- For control system see page 22



Double-walled housing for cool outer surface – with side panels made of structured stainless steel. Available as option



N 280 E

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H <sup>1</sup>			
N 140 E	1300	450	580	570	140	660	1050	1430	9,0	3-phase	220
N 210 E	1300	500	580	700	210	710	1050	1560	12,0	3-phase	270
N 280 E	1300	550	580	830	280	760	1050	1690	15,0	3-phase	300
N 500 E	1300	600	820	1000	500	1000	1470	1820	30,0	3-phase	700

<sup>1</sup>Base included

\*Please see page 22 for more information about supply voltage

## Chamber Kilns, heated from 5 Sides

N 100 - N 660/H



N 150

N 200

N 300

## Chamber Kilns, heated from 5 Sides

### N 100 - N 660/H

First-class craftsmanship, professional design, long service life and excellent temperature uniformity – these are a few of the reasons our kiln models N100 to N 660/H are our best sellers to everyone looking for a professional kiln. These furnaces have proven their worth through the years, firing porcelain, stoneware and annealing glass. You will find these kilns in industry as well as in ceramic workshops, studios, clinics, schools and private homes – practically every place where a rugged, capable of frequent firings and excellent temperature uniformity is required.

#### Top quality:

- Heated from 5 sides: 3 walls, door and the floor
- High-quality, free-radiating heating elements mounted on support tubes for longest service life
- Long-lasting, heavy-gauge heating elements
- Special arrangement of the heating elements for optimal temperature uniformity
- Silicon Carbide floor plate protects floor elements and provides a level setting surface
- Solid-state power control relays for silent operation (N 100.. - N 300..)
- Fast power switching for precise temperature uniformity
- Thermocouple Type S
- Door safety switch shuts down power to the elements when the door is opened
- Multi-layered lining with light weight insulating bricks and microporus insulation for a cooler shell and low power consumption
- Rugged, self-supporting, vaulted arch construction
- “Cool-touch” double-walled housing with stainless steel side panels (N 100.. - N 300..)
- Clean, professional design enhances your image
- Solid, double-walled door with wear-resistant, precision-made “brick-on-brick” door seal (N 100.. - N 300..)
- Adjustable door with clamping wheels for easy, tight sealing and padlock hasp
- Environment-friendly, long-life powder-coating of housing
- Attractive, durable, environmentally friendly powder-coating
- Infinitely adjustable air inlet opening in the floor
- Delivery includes pipe connection for connecting an air outlet (80 mm diameter)
- GS safety mark for controlled safety, CE
- Base included for N 100.. - N 300..
- Manual-Zone-Regulation for sophisticated firing solutions as an option
- Other sizes or custom designs available on request
- For control system see page 22



N 100



N 660

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H <sup>1</sup>			
N 100	1300	400	530	460	100	710	1150	1430	9,0	3-phase	270
N 150	1300	450	530	590	150	760	1150	1560	11,0	3-phase	305
N 200	1300	500	530	720	200	810	1150	1690	15,0	3-phase	345
N 300	1300	550	700	780	300	860	1340	1750	20,0	3-phase	430
N 440	1300	600	750	1000	450	1000	1470	1820	30,0	3-phase	700
N 660	1300	600	1100	1000	650	1000	1820	1820	40,0	3-phase	850
N 100/H	1340	400	530	460	100	740	1170	1430	11,0	3-phase	310
N 150/H	1340	450	530	590	150	790	1170	1560	15,0	3-phase	380
N 200/H	1340	500	530	720	200	840	1170	1690	20,0	3-phase	420
N 300/H	1340	550	700	780	300	890	1360	1750	27,0	3-phase	550
N 440/H	1340	600	750	1000	450	1000	1470	1820	40,0	3-phase	800
N 660/H	1340	600	1100	1000	650	1000	1820	1820	52,0	3-phase	950

<sup>1</sup>Base included

\*Please see page 22 for more information about supply voltage

## Chamber Kilns/Standard Equipment

N 100 - N 660/H



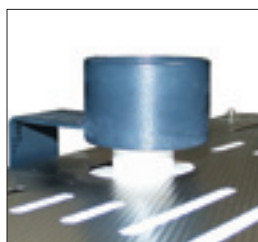
Elements mounted on support tubes give free radiation of heat, longer element and wall life; optimized element positioning for excellent temperature uniformity



Solid-state relays control the kiln heating. Operating silently and nearly wear-resistant, the solid-state relays switch with short pulses, giving excellent temperature uniformity and fast response times.



Easy-to-use Nabertherm controller, precise temperature regulation (see page 22 for details)



Flue in the center-rear section of the ceiling ensures uniform flow of exhaust gasses (roof flap for N 440 and N 660)



Handy quick-release locking wheel, door can be secured with padlock



Double-walled housing for "Cool-Touch" outer surface with side panels made of textured stainless steel (N 100/G - N 300/H)



Base for ergonomic loading height included in delivery. Optional: Special height or running on casters



Infinitely adjustable air inlet damper for optimum air supply during firing and reduced cooling time. Automatic control available as an option.



Large, ergonomic door handle



Silicon carbide floor plate protects the floor heating elements. It is easily removed to permit convenient cleaning of the furnace bottom and element maintenance.

**We recommend:** To achieve a long service life of the brick lining and heating elements, the kiln should not be fired every cycle at its maximum rated temperature. Up to 1230 °C we recommend models N 100 - N 660, and for regular high firing temperatures above 1230 °C we recommend our models N 100/H - N 660/H.

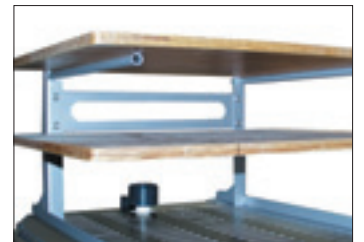


## Accessories

**Automatically closing inlet air flap** for our chamber kilns N 100 - N 300/H and N 140E - N 280E. For a better ventilation of the furnace, improved firing results. (Available as a retrofit for existing furnaces).



**Drying shelf set** mounts on top of models N 100.. - N 300/H and N 140 E - N 280 E.



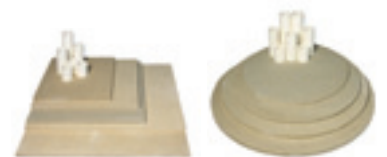
**Base** in special height or on casters.



**Loading rack for chamber furnaces.** The entire kiln load may be ergonomically inserted or extracted in one movement using a pallet lift truck (N 150 ff). This allows the kiln to be fired again more quickly.



**Batts, plates and posts.** Matching sets of kiln furniture are available for every type of furnace.



If you have a question, do not hesitate to ask us!

## Installation Service

Nabertherm and your dealer can help arrange professional installation and assembly of your kiln into your studio.

All of our kilns ship completely assembled in one piece. While other manufacturers sell sectional designs, we do not because it negatively affects the performance and safety of our kilns. A one-piece design may take more effort on the day you install your kiln, but its effortless operation every day thereafter more than makes up for this.



Professional installers moving a chamber kiln into a basement studio.

## Gas-heated Chamber Kilns NB 300 and NB 660



NB 300



NB 660

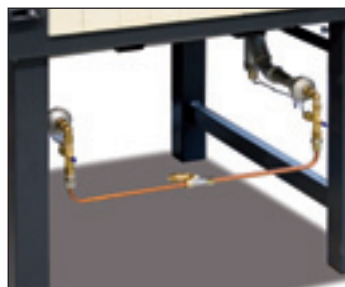
### NB 300 and NB 660

Some firing processes require a gas-heated chamber kiln. Fast heating times and unique firing results are strong reasons for using such equipment.

The NB 300 chamber kiln is equipped with a medium pressure gas burner and is suitable for many creative applications. The model NB 660 is recommended for industrial use. Equipped with a powerful forced-air burner with automatic ignition, this kiln can be operated without supervision. Firings are controlled fully automatically.

#### Standard Version

- Gas fittings with safety technology in accordance with DVGW (German Technical and Scientific Association for Gas and Water)
- Special positioning of the gas burner for optimum temperature uniformity
- Multi-layer, reduction-proof insulation with light-weight refractory bricks and special back-up insulation result in low gas consumption
- Self-supporting and rugged ceiling, bricks laid in arched construction
- Double-walled casing, side panels made of stainless steel (NB 300), for low outside temperatures
- Solid, double-walled door with wear-resistant "brick-on-brick" sealing (NB 300)
- Adjustable door that can be locked with a padlock
- Environmentally friendly, long-life powder coated housing
- Exhaust hood with 150 mm diameter connection
- Base included
- NB 300:
  - Top quality, high-performance medium pressure burner for operation with LPG
  - Manual power control
  - Manual atmosphere control (reducing or oxidizing)
- NB 660:
  - Forced-air burner with fully automatic temperature control, also suitable for industrial use
  - Automatic ignition with monitoring
  - Gas types: town gas, natural gas or liquid petroleum gas



NB 300 burner



Automated process control

#### Additional Equipment

- Oxygen sensor for atmosphere measurement
- CO warning device
- NB 300:
  - Temperature indicator with thermocouple Type S
  - Fully automatic temperature control with shut-off at end of program
- NB 660:
  - Lambda control for defined atmosphere

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Rating kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H			
NB 300	1300	550	700	780	300	860	1340	1750	36,0	-	430
NB 660	1300	600	1100	1000	650	1000	1820	1820	105,0	3-phase	850

\*Please see page 22 for more information about supply voltage

## RAKU Kilns



**RAKU-System 100**  
 with lifting stand and gas burner



Cover including table



Lifting stand with crank drive

### RAKU System 100, 3-Piece-Kit

The RAKU 100 is a gas-fired kiln for outdoor operations with standard propane gas. This kiln combines two different furnace concepts: It can either be used as a top loader or as top-hat furnace. In the basic version, the cover is lifted by two bars. As an accessory, the furnace can be supplied with a lifting stand. This frame is provided with a crank drive which makes it very easy to lift the hat. With this version, you can operate the furnace by yourself, without problems. We can also provide the matching propane burner. However, you may decide to use your own model.

#### Top quality:

- Easy and simple construction, applies particularly to the cover
- Can be used as top-hat furnace or top loader
- Housing sheets made of stainless high-grade steel
- Inspection holes for observing your fired ware
- High-quality insulation with low heat-storage capacity for short heat-up times
- Low gas consumption
- Special flame manipulation for good temperature uniformity
- Simple handling



Propane burner with bottle connection,  
 high-performance with 18 kW



Temperature gauge for RAKU 100, easy to operate, NiCr-Ni temperature sensor, display range 20 - 1200 °C, optional connection of second sensor with display changeover

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Weight in kg	
		w	d	h		W	D	H	Cover	Lifting device
RAKU system 100 lifting stand burner	1150	500	500	620	103	750	660	1150	36	16
							750	1000		
Power 18 kW										

## Fusing Furnaces

GF 75 - GF 1050



GF 920

Model	Tmax °C	Inner dimensions in mm			Floor space in m <sup>2</sup>	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H <sup>3</sup>			
GF 75	950	500	500	350	0,25	850	750	1270	3,6	1-phase	70
GF 75 R	950	500	500	350	0,25	850	750	1270	5,5	3-phase <sup>1</sup>	70
GF 190	950	1000	500	350	0,50	1340	910	1350	6,4	3-phase <sup>1</sup>	165
GF 240	950	1000	800	350	0,80	1450	1200	1270	11,0	3-phase	260
GF 380	950	1200	1000	380	1,20	1650	1400	1350	15,0	3-phase	350
GF 420	950	1650	850	380	1,40	2100	1250	1270	18,0	3-phase	350
GF 520	950	1200	1150	380	1,38	1650	1550	1400	15,0	3-phase	450
GF 600	950	2000	1000	380	2,00	2450	1400	1270	22,0	3-phase	500
GF 920	950	2100	1150	380	2,41	2550	1550	1350	26,0	3-phase	670
GF 1050	950	2300	1200	380	2,76	2750	1600	1350	32,0	3-phase	780

<sup>1</sup>Heating only between two phases

<sup>3</sup>Base included

\*Please see page 22 for more information about supply voltage



## Fusing Furnaces

**GF 240****GF 75**

### GF 75 - GF 1050

The furnace models GF 75 - GF 1050 are particularly suitable for fusing of glass. Their special construction, with infrared heating elements mounted on the ceiling and light fiber insulation, ensures fast heat-up and cool-down rates and optimum fusing or slumping results. As protected infrared heating is used, any direct contact with the heating coils is avoided. This means you can safely open the furnace during operation without the need to switch off the heating.

#### Top quality:

- Tmax 950 °C
- Infrared heating elements for short heat-up times and energy efficient operation
- Overhead heating for direct heat transfer to your ware
- Base available with either lightweight ceramic fiber modules or durable insulating bricks
- Hood insulation with special ceramic fiber for short heat-up and cool-down rates
- Solid-state power control relays for silent operation
- Fast power switching for precise temperature uniformity
- Type "K" (NiCr-Ni) thermocouple inside the furnace chamber for precise temperature measurement
- Housing made of high-grade stainless steel and ventilated lid
- Attractive and professional design enhances your image
- Gas springs counterbalance the lid weight for easy opening and closing
- Adjustable quick-release locks to secure the hood during firing
- Large "cool-touch" handle for opening and closing the furnace
- Angled sight ports with plugs let you see the progress of your work and cool quickly
- Delivered ready for operation including base frame with swivel casters and storage shelf
- Other sizes or custom designs available on request
- For control system see page 22



"Combing" in a GF 240



## Top-Loading Fusing Kilns with Lid Heating



F 30



F 220  
with Two-Zone Regulation



Kiln interior with circular lower side heating

### F 30 - F 220

This well-priced kiln range is the ideal choice for many fusing applications. The insulation is made from lightweight refractory bricks with protected heating elements in the lid, models F 75 and F 220 have additional side heating.

Top quality:

- Lid heating for direct radiation of goods
- Spring-loaded lid opening (F 75 - F 220)
- High quality heating elements, dimensioned for long service life
- Level setting surface made from lightweight refractory bricks
- Low-noise operation with solid-state relays
- Thermocouple optimally positioned for immediate temperature measurement
- Energy-saving insulation made from lightweight refractory bricks
- Housing cover made from structured stainless steel
- Lid with adjustable locks for easy handling
- Low wear & tear lid sealing (brick on brick construction)
- Higher chassis available as an option
- Manual-Zone-Regulation for F 220 (lid and sides)
- For control system see page 22



F 110

Model	Tmax °C	Inner dimensions in mm			Floor space in m <sup>2</sup>	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H			
F 30	950	∅	410	230	0,13	650	800	500	2,0	1-phase	50
F 75	950	750	520	230	0,33	950	880	680	5,5	3-phase	80
F 110	950	930	590	230	0,47	1120	950	680	7,5	3-phase	95
F 220	950	930	590	460	0,47	1120	950	910	15,0	3-phase	115

\*Please see page 22 for more information about supply voltage

## Multi-Purpose Chamber Kilns

### Chamber Furnace for Glass Fusing MF 140

The multi-purpose kiln MF 140 is suitable for fusing, porcelain painting and decoration firing of glass and ceramics. Pâte de Verre techniques can also be carried out using this kiln. The heating can be adapted to your process requirements. During glass fusing, for example, the side heating is turned down and only the ceiling heating is used. Simple and compact in structure, the MF 140 is an ideal choice for individuals or for small studios.



MF 140

Top quality:

- Table-top version
- Stand as an option
- 4-sides heating from both sides, ceiling and bottom (only top heating for fusing)
- Ratio of top to side heating power adjustable
- High-quality heating elements, positioned in protective grooves
- Heating elements with long service life
- Long-life „K“ type thermocouple
- Safety door contact switch
- Multi-layer insulation consisting of lightweight refractory bricks on the hot face and backed by fibre insulation for low energy consumption
- Housing made from high-quality, structured stainless steel plate
- Exhaust air vent in the backwall, air inlet opening in the door
- For control system see page 22



MF 140 with base (optional)

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H			
MF 140	1100	560	610	400	140	1090	850	650	11,0	3-phase	200

\*Please see page 22 for more information about supply voltage

### Glass beads Cooling Furnace/Multi-Purpose Kiln MF 5

A high-quality furnace is indispensable for professional glass bead tempering. The MF 5 model is the ideal furnace for cooling large glass beads or glass jewelry. For charging the glass beads, the door is equipped with a window which can be closed with a filler piece when the furnace is used for other applications. The infrared heating prevents direct contact with the heating elements so the furnace can be safely opened during operation without heating interruption.

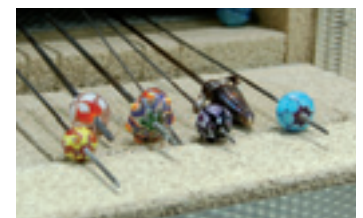
With a maximum temperature of 950 °C, this furnace is multifunctional, and can be used for fusing and enameling applications, for decorating and for preheating frits and other materials.

Top quality:

- Tmax 950 °C
- Heating from furnace ceiling
- Elements protected in quartz glass tubes for safe open-door operation
- Multi-layer energy-efficient insulation
- Table-top model
- Housing made from high-quality stainless steel
- Low energy consumption
- Easy to handle
- Low-noise heating operation with solid-state relays
- Window with rack for charging glass beads
- For control system see page 22



MF 5



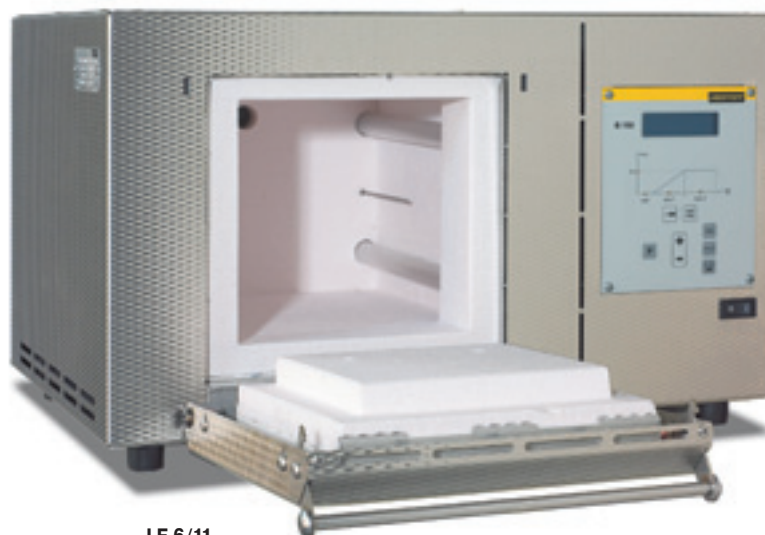
Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H			
MF 5	950	220	240	100	5	485	370	320	1,6	1-phase	15

\*Please see page 22 for more information about supply voltage

## Enamelling Furnaces



LE 2/11



LE 6/11

### Enamelling Furnaces LE 2/11 - LE 14/11

The muffle furnaces LE 2/11 - LE 14/11 are ideally suitable for enamelling. Their low power consumption and user-friendly design makes this furnace type the optimum solution for small work. The double-walled housing keeps the outside temperature cool to the touch. The vacuum-fiber insulation allows short heat-up times. Protected elements make this a durable solution.

Top quality:

- Tmax 1100 °C, 1050 °C as continuous temperature
- Heating from both sides
- Elements protected by quartz tubes which allows opening of furnace during operation
- Insulated with hardened vacuum-fiber modules
- Double-walled housing ensures "cool-touch" outer surface
- Low energy consumption
- Easy to operate
- Silent solid state relay
- For control system see page 22



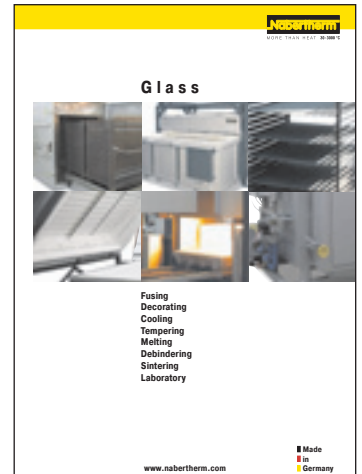
Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Supply power/kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H			
LE 2/11	1100	110	180	110	2	275	380	350	1,8	1-phase	10
LE 4/11	1100	170	200	170	6	335	400	410	1,8	1-phase	15
LE 6/11	1100	170	200	170	6	510	400	320	1,8	1-phase	18
LE 14/11	1100	220	300	220	14	555	500	370	2,9	1-phase	25

\*Please see page 22 for more information about supply voltage



## Other Furnaces from our Program for Glass Treatment

When you need a high-volume solution for heat treating glass, Nabertherm has your answer. We have industrial designs for annealing, fusing, slumping, decorating, tempering, and many other applications. In addition to our wide range of standard furnaces, we can design a specific solution for you. Please ask for our 40-page "Glass" catalog and see all our possibilities.



Fusing furnace with movable tables



System for fusing and slumping



Fusing furnace with freely movable table



Top hat furnace with rail-mounted, movable trough

# Controllers and Software



**B 130**



**C 280**



**C 290**



**C 295**



**B 150**

Nabertherm has many years of experience in design and construction of standardized and customer-friendly control units. The controllers distinguish themselves by a very high operating convenience and provide extensive basic functions from the basic model on.

### Standard Controllers

Our wide range of standard controllers already covers many customer requirements. Adapted to the specific furnace model the controller reliably monitors your heat treatment process. The standard controllers are developed and produced within the Nabertherm Group. When designing the controllers, easy use is our top-priority. Each of the units are tailored to the typical applications for a specific furnace model. From a simple controller with a single adjustable temperature up to a control unit with freely programmable parameters, storable programs and interface to a computer - we can meet your requirements.

### Allocation of the Standard Controller to the Furnace Groups

	Top 16/R - Top 100	Top 140 - Top 220	HO 70.. - HO 300	N 40E - N 100E	N 140E - N 500E	N 100 - N 660/H	GF 75 - GF 1050	F 30 - F 110	F 220	MF 140	MF 5	LE 2/11- LE 4/11	LE6/11 - LE 14/11
Catalog page	4 - 6	4 - 6	7	8	9	10	16	18	18	19	19	20	20
Controller													
B 130	✓	✓	✓	✓	✓	✓							
C 280	●	●	●	●	●	●							
C 290	●	●	●	●	●	●	✓	✓			✓		
C 295		●	●			●			✓	✓			●
R 6												✓	
B 150													✓

### Scope of Functions of the Standard Controller

	B 130	C 280	C 290	C 295	R 6	B 150
Number of programs	2	9	9	9	1	1
Segments per program	3	3	40	40	1	2
Special functions (e.g. fan or automatic flaps)		2	2	2		
Clear, blue-white display	✓	✓	✓	✓		✓
Status messages displayed in plain text	✓	✓	✓	✓		✓
Adjustable start-time (e. g. for using night-time current)	✓	✓	✓	✓		✓
Current consumption metering	✓	✓	✓	✓		✓
Operating hours counter	✓	✓	✓	✓		✓
Self-optimization	✓	✓	✓	✓		✓
Input of the programs in increments of 1 °C and/or 1 min.	✓	✓	✓	✓		✓
Key locking	✓	✓				
Skip key for change of segments			✓	✓		
Drive of manual zone regulation				✓		
Interface for MV software	●	●	●	●		●

✓ Standard  
● Option

### Interface/Software MV 1.3

For easier programming and documentation of your controllers, we offer our Controltherm Software. This system lets you connect up to 16 furnaces to a PC. From here you may edit and download programs, monitor firing progress and store historical data for all your firings. Data may be exported to Excel for easier manipulation.



### Supply Voltages for Nabertherm Furnaces

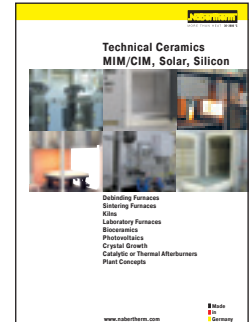
1-phase: All furnaces are available for 110 V - 240 V, 50 or 60 Hz.

3-phase: All furnaces are available for 200 V - 240 V and/or 380 V - 480 V, 50 or 60 Hz.

## The Nabertherm Product Range – [www.nabertherm.com](http://www.nabertherm.com)

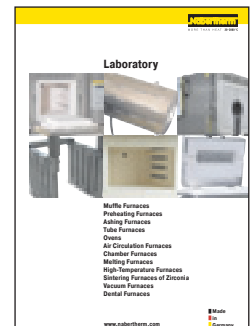
### Technical Ceramics MIM/CIM, Solar, Silicon/BioCeramics

Wire-heated kilns for use up to 1400 C and MoSi<sub>2</sub> kilns for use up to 1800 C offer the best value and quality for sintering Technical Ceramics. All are available in sizes from bench-top to walk-in. To remove binders, we offer solutions from our Combi-Furnaces that debind and sinter in the same furnace to specialized systems for binder removal in a specialized atmosphere (e.g. BASF Catamold).



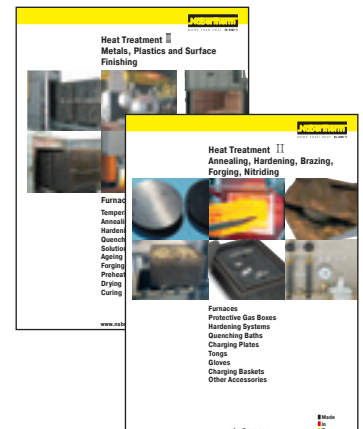
### Laboratory/Dental

Apart from the furnaces shown for glass production Nabertherm offers a wide range of standard furnaces for laboratories. We keep standard units in stock for short delivery times. Please ask for our special laboratory brochure which provides more detailed information on the furnaces which could be of interest to you.



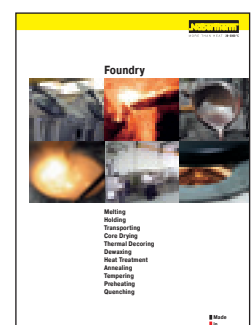
### Heat Treatment of Metals, Plastics and Surface Finishing

Tempering, annealing, hardening, quenching and tempering, solution annealing, forging, curing, preheating, drying, ageing – these are only some of the applications which are possible with our extensive program of furnaces and systems. From the compact hardening furnace to fully-automatic systems with conveying technology and process documentation – we certainly will find a solution tailored to your application.



### Foundry

Every furnace for the shop that casts metal, beginning with ovens to dry cores and dewax investments, to fuel-fired and electric resistance melting furnaces, to thermal decoring and heat treatment systems. All Nabertherm Foundry furnaces are designed for energy efficiency and integration with automation systems for low total cost of ownership.



## The whole World of Nabertherm: [www.nabertherm.com](http://www.nabertherm.com)

Please visit our website

[www.nabertherm.com](http://www.nabertherm.com) and find out all you want to know about us and our products.

In addition to our current calendar of trade fairs and training dates, there is also the opportunity to get in touch directly with your local sales office or nearest dealer world-wide.

### Professional Solutions for:

- Arts & Crafts
- Glass
- Ceramics
- Laboratory/Dental
- Heat Treatment of Metals, Plastics & Surface Finishing
- Foundry



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