

Furnaces for Research and Laboratory



Testing
Drying
Ashing
Tempering
Preheating
Sintering
Firing
Annealing



Muffle Furnaces KL 03/11 – KL 15/12

T max 1100 °C and 1200 °C



Universal muffle furnaces for many laboratory applications, superb value for money.

- Temperature ranges 1100 °C and 1200 °C
> Flexibility of use
- Stainless steel casing > Long service life, extremely resistant
- Resistant fibre module as inner chamber
> High mechanical durability, short firing cycles, low power consumption
- Door collar made of bricks > Resistant to mechanical damage
- High-quality heating elements > Long service life
- Heating wire embedded in ceramic plates > Heating wire protected against damage; service-friendly and cost-efficient
- Exhaust pipe in rear wall > Any gases possibly released can escape
- Door safety switch > Power supply interrupted when door is opened
- Digital program controller supplied as standard (adjustable heating-up ramp, soaking time programmable)
> State-of-the-art control system, simple operation

Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Litres [l]	External dimensions [mm] width x depth x height	Power [kW]	Weight [kg]	Voltage [V]
KL 03/11	1100	180 x 140 x 100	3	380 x 415 x 400	1,2	20	230 1/N
KL 05/11	1100	230 x 170 x 130	5	430 x 445 x 425	2,4	35	230 1/N
KL 09/11	1100	230 x 240 x 170	9	430 x 515 x 465	3,0	45	230 1/N
KL 15/11	1100	250 x 340 x 170	15	450 x 615 x 465	3,5	50	230 1/N
KL 03/12	1200	180 x 140 x 100	3	380 x 415 x 400	1,2	20	230 1/N
KL 05/12	1200	230 x 170 x 130	5	430 x 445 x 425	2,4	35	230 1/N
KL 09/12	1200	230 x 240 x 170	9	430 x 515 x 465	3,0	45	230 1/N
KL 15/12	1200	250 x 340 x 170	15	450 x 615 x 465	3,5	50	230 1/N

Muffle Furnaces KL 04/12/M – KL 12/12/M

T max 1200 °C

Muffle furnaces for complex tasks. With ceramic muffle, heating on all sides and cooling of casing

- Stainless steel casing > Long service life, extremely resistant
- Double-walled housing with rear ventilation fan cooling > Exceptionally low outer-casing temperature
- Ceramic muffle > High mechanical durability of inner furnace chamber
- Multilayer insulation using asbestos-free fibres > Extremely short heat-up times, low power consumption, low operating costs
- Door collar made of very strong ceramic > High mechanical durability, resistant to mechanical damage
- High-quality heating wire > Long service life
- Heating wire wound around outside of ceramic muffle, heating on all sides > Ideal temperature distribution in furnace chamber +/- 5 K in accordance with DIN 17052, heating elements protected against mechanical damages and gases possibly released
- Exhaust pipe in rear wall > Exhaust of gases
- Door safety switch > Power supply interrupted when door is opened



Vertical Muffle Furnaces SL 02/12/M – SL 05/12/M

T max 1200 °C

Vertical muffle furnaces for top loading. Designed with ceramic muffle, heating on all sides and fan cooling, as in Muffle Furnaces KL 04/12/M – KL 12/12/M.



Technical data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Litres [l]	External dimensions [mm] width x depth x height	Power [kW]	Weight [kg]	Voltage [V]
KL 04/12/M	1200	170 x 275 x 90	4	485 x 720 x 540	3,0	50	230 1/N
KL 08/12/M	1200	170 x 275 x 170	8	485 x 720 x 540	3,0	55	230 1/N
KL 12/12/M	1200	255 x 255 x 165	12	570 x 720 x 540	3,5	65	230 1/N
		Ø x height [mm]					
SL 02/12	1200	110 x 160	2	290 x 290 x 460	2,6	30	230 1/N
SL 05/12	1200	170 x 230	5	350 x 350 x 550	2,6	40	230 1/N

Laboratory Chamber Furnaces

KL 06/13 – KL 30/13, T max 1340 °C



Chamber furnaces for temperatures up to 1340 °C. Rugged refractory brick insulation. Cooling system for casing.

- Stainless steel casing > Long service life, extremely resistant
- Double-lined casing with rear ventilation fan cooling > Exceptionally low outer-casing temperature
- Multilayer insulation made of microporous material and refractory bricks > Low energy consumption, low operating costs, high mechanical durability
- Door collar made of very strong ceramic > High mechanical durability, resistant to mechanical damage
- High-quality heating elements > Long service life
- Exhaust pipe in rear wall > Any gases possibly released can escape
- Door safety switch > Power supply interrupted when door is opened

Accessories for muffle furnaces

- Ceramic collecting plate for protection of furnace bottom
- Various tongs for easy charging
- Gloves
- Vent with fan



Technical data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Litres [l]	External dimensions [mm] width x depth x height	Power [kW]	Weight [kg]	Voltage [V]
KL 06/13	1340	200 x 230 x 150	6	600 x 715 x 580	1,5	60	230 1/N
KL 09/13	1340	230 x 230 x 170	9	600 x 715 x 580	2,0	64	230 1/N
KL 15/13	1340	250 x 250 x 250	15	620 x 715 x 665	2,4	79	230 1/N
KL 30/13	1340	310 x 310 x 310	30	680 x 800 x 770	3,2	87	230 1/N

Laboratory Chamber Furnaces KC 20/13 – KC 120/14

T max 1300 °C and 1400 °C

Chamber furnaces for complex laboratory applications, up to and including simulation of production processes for temperatures of up to 1400 °C. Extremely short heating-up times, excellent temperature uniformity.

- Double-lined casing design with rear ventilation > Exceptionally low outer-casing temperature, pleasant working conditions
- Multilayer insulation made of microporous material and refractory bricks > Low energy consumption, low operating costs
- Heated from 5 sides (left, right, door, rear wall, bottom) > Excellent temperature uniformity in the chamber up to +/- 5 K in accordance with DIN 17052, short heat-up times
- High-quality heating elements > Long service life
- Heating elements wound on ceramic tubes, mounted in front of the furnace wall > Allows free heat radiation into chamber, resultant energy savings and long service life
- Bottom heating elements covered by silicon carbide plates > High mechanical strength
- Door safety switch > Power supply interrupted when door is opened



Technical Data (other sizes on request)

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Litres [l]	External dimensions [mm] width x depth x height*	Power [kW]	Weight [kg]	Voltage [V]
KC 20/13	1300	270 x 270 x 270	20	840 x 826 x 1180	8	160	400 3/N
KC 40/13	1300	350 x 350 x 350	40	945 x 962 x 1468	9	170	400 3/N
KC 80/13	1300	430 x 430 x 430	80	985 x 1066 x 1540	12	280	400 3/N
KC 120/13	1300	500 x 500 x 500	120	1073 x 1049 x 1435	15	350	400 3/N
KC 20/14	1400	270 x 270 x 270	20	840 x 826 x 1180	9	160	400 3/N
KC 40/14	1400	350 x 350 x 350	40	945 x 962 x 1468	11	170	400 3/N
KC 80/14	1400	430 x 430 x 430	80	985 x 1066 x 1540	13	280	400 3/N
KC 120/14	1400	500 x 500 x 500	120	1073 x 1049 x 1435	18	350	400 3/N

* incl. base



Bench Type Furnaces KM 16/13 – KM 16/13/R Chamber Furnaces KM 17/13 – KM 75/13

T max 1280 °C

Rugged chamber furnaces. Furnace door can be opened up to T max.

- Casing rugged designed > Long service life
- All chamber furnaces with double-lined casing > Exceptionally low outer-casing temperature
- Door collar made of hard lightweight refractory bricks or refractory concrete > Resistant to mechanical damage
- Exhaust pipe in rear wall
- Base included as standard supply (from model KM 17/13 upwards)
- Multilayer insulation, asbestos-free > Short heat-up times, low energy consumption, low operating costs
- High-quality heating elements
- Heated from three sides (from both sides and bottom) > Excellent temperature uniformity in furnace chamber
- Heating elements in the sides are wound on ceramic tubes > Allows free heat radiation into chamber, resulting in energy saving and long service life
- Bottom heating elements covered by silicon carbide plates > High mechanical strength, protection for bottom heating elements
- Suitably dimensioned power > Short heat-up times
- Door safety switch > Power supply interrupted when door is opened
- Chamber furnaces also available with gas-tight retorts



Technical data (other sizes on request)

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Litres [l]	External dimensions [mm] width x depth x height*	Power [kW]	Weight [kg]	Voltage [V]
KM 16/13	1280	230 x 350 x 200	16	700 x 760 x 700	3,0	60	230 1/N
KM 16/13/R	1280	230 x 350 x 200	16	700 x 760 x 700	5,5	70	400 3/N
KM 17/13	1280	250 x 350 x 200	17	940 x 980 x 880	7,25	230	400 3/N
KM 25/13	1280	250 x 400 x 250	25	720 x 810 x 750	12	250	400 3/N
KM 40/13	1280	290 x 550 x 250	40	960 x 1200 x 920	12	320	400 3/N
KM 55/13	1280	400 x 550 x 250	55	1080 x 1220 x 920	13	450	400 3/N
KM 75/13	1280	400 x 750 x 250	75	1180 x 1500 x 910	18	510	400 3/N

Air-circulation Chamber Furnaces KM 20/04/A – KM 140/08/A

T max 450 °C, 650 °C and 850 °C

Air-circulation chamber furnaces with excellent temperature uniformity

- Rugged design made of high-quality steel plates
- Inner liner made of stainless steel > Long service life, extremely resilient, corrosion resistant
- Fitted with two sheet-metal trays included as standard (KM 20/04-08/A without trays)
- Furnace fitted with exhaust pipe, incl. manual exhaust air flap
- High-quality heating elements > Long service life
- Horizontal air circulation > Excellent temperature uniformity up to ± 2 K in accordance with DIN 17052
- High-grade, asbestos-free insulation > Low energy consumption, low running costs
- Base included as standard (KM 20/04-08/A as bench type furnaces without base)



Technical data (other sizes on request)

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Litres [l]	External dimensions [mm] width x depth x height*	Power [kW]	Weight [kg]	Voltage [V]
KM 20/04/A	450	300 x 350 x 200	20	640 x 950 x 510	2,4	80	230 1/N
KM 40/04/A	450	300 x 400 x 300	35	640 x 1000 x 610	3,2	95	400 3/N
KM 70/04/A	450	350 x 500 x 400	70	690 x 1100 x 710	5,0	130	400 3/N
KM 140/04/A	450	450 x 600 x 500	135	790 x 1200 x 930	7,5	200	400 3/N
KM 20/06/A	650	300 x 350 x 200	20	640 x 950 x 510	2,0	80	230 1/N
KM 40/06/A	650	300 x 400 x 300	35	640 x 1000 x 610	4,0	95	400 3/N
KM 70/06/A	650	350 x 500 x 400	70	690 x 1100 x 710	6,0	130	400 3/N
KM 140/06/A	650	450 x 600 x 500	135	790 x 1200 x 930	8,0	200	400 3/N
KM 20/08/A	850	300 x 350 x 200	20	640 x 950 x 510	3,0	85	230 1/N
KM 40/08/A	850	300 x 400 x 300	35	640 x 1000 x 610	6,0	100	400 3/N
KM 70/08/A	850	350 x 500 x 400	70	690 x 1100 x 710	8,0	140	400 3/N
KM 140/08/A	850	450 x 600 x 500	135	790 x 1200 x 930	12,0	210	400 3/N

KM 40/04/A – KM 140/04/A, KM 40/06/A – KM 140/06/A, KM 40/08/A – KM 140/08/A: Charging height 900 mm

* Height excluding base

High-temperature Chamber Furnaces Bench-type models HTL 04/16 – HTL 08/18

1600 °C, 1700 °C, 1750 °C, 1800 °C



High-temperature chamber furnaces as compact bench-type models in different designs. These furnaces are also suitable for sintering dental ceramics.

- Compact bench-type models
- Housing made almost entirely of stainless steel
> Corrosion resistant
- Double-walled housing with fan cooling
> Low outer-wall temperature
- High-quality heating elements made of molybdenum disilicide
- Furnace insulation made of aluminium oxide material
- Excellent temperature uniformity
- Low connection parameters
- Rapid heating-up and cooling



For charging with the model with the easy-load system, the furnace bottom and door are pulled out with the aid of the low-friction guide system. The loading area is then accessible not only from above, but also from the two sides. This makes it much easier to charge the furnace.

Technical data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Litres [l]	Power [kW]	Weight [kg]	Voltage [V]
HTL 02/16	1600	130 x 135 x 150	2	3	90	230
HTL 04/16	1600	130 x 180 x 160	4	3,5	90	230
HTL 06/16	1600	150 x 250 x 150	6	6	100	400
HTL 08/16	1600	150 x 300 x 150	8	8	100	400
HTL 02/17	1700	130 x 135 x 150	2	3	90	230
HTL 04/17	1700	130 x 180 x 160	4	3,5	90	230
HTL 06/17	1750	150 x 250 x 150	6	6	100	400
HTL 08/17	1750	150 x 300 x 150	8	8	100	400
HTL 02/18	1800	90 x 150 x 150	2	3,6	90	230
HTL 04/18	1800	150 x 150 x 150	4	5	90	400
HTL 06/18	1800	150 x 250 x 150	6	7	100	400
HTL 08/18	1800	150 x 300 x 150	8	9	100	400

High-temperature Chamber Furnaces HTK 10/16 – HTK 40/18

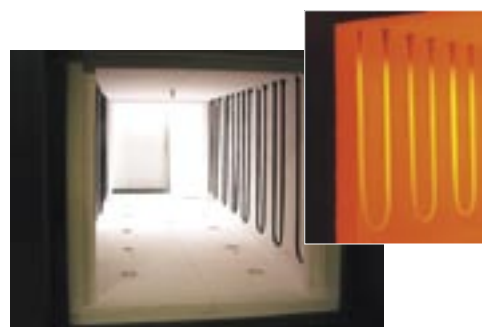
1600 °C, 1700 °C, 1750 °C, 1800 °C

High-temperature chamber furnaces with volumes of 10-400 l. These free-standing models provide a maximum of precision and convenience. Their strengths: rapid heating and cooling, low power consumption.

- High-temperature chamber furnaces with volumes from 10 l to 400 l
- For temperatures from 1600 °C up to 1800 °C
- Outer casing with rugged, aesthetic frame construction
- Double-lined casing with forced cooling, hence very low outer-casing temperatures
- Inner liner, bottom and front made of stainless steel
- Door with parallel motion, swings hot side away from operator
- In standard models, furnace is heated by the side walls. Additional heating by the rear wall is available as optional extra.
- Heating elements made of molybdenum disilicide
- Furnace insulation with high-quality fibre materials
- State-of-the-art control and regulation system

The options:

- Automatic monitoring of entire process
- Software package for process visualisation
- Exhaust air flaps for better ventilation, automatically controlled
- Fan cooling
- Ready for inert gas operation
- Reinforced bottom for receiving larger weights



Technical data (other sizes on request)

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Litres [l]	Power [kW]	Weight [kg]	Voltage [V]
HTK 10/16	1600	200 x 250 x 200	10	9	290	400
HTK 20/16	1600	250 x 310 x 250	20	12	315	400
HTK 30/16	1600	300 x 320 x 300	30	14	340	400
HTK 40/16	1600	300 x 350 x 350	40	14	370	400
HTK 10/17	1700	200 x 250 x 200	10	9	290	400
HTK 20/17	1700	250 x 310 x 250	20	12	315	400
HTK 30/17	1750	300 x 320 x 300	30	14	340	400
HTK 40/17	1750	300 x 350 x 350	40	14	370	400
HTK 10/18	1800	200 x 250 x 200	10	9	290	400
HTK 20/18	1800	240 x 300 x 260	20	12	315	400
HTK 30/18	1800	300 x 320 x 300	30	14	340	400
HTK 40/18	1800	300 x 350 x 350	40	14	370	400

High-temperature Elevator Furnaces

up to 1800 °C

Volume up to approx. 6 litres ▶



These furnaces are designed as bench-type models. A suitable base for these small furnaces can be supplied as an optional extra. In addition to a wide variety of laboratory uses, these furnaces are also suitable for sintering dental ceramics.

Model variants:

TWIN: Furnace with two bottoms that can be guided alternately into the furnace.

SWING: Bottom can be lowered, tilted forwards and raised in order to facilitate charging.

LIFT: Bottom can only be lowered and raised.

HOTWORK: Bottom can be retracted at high temperature.

LIFT TOP: Bottom is fixed in place, the furnace is raised and lowered.



◀ 0.3 - 3 litres volume

Tube Furnaces up to 1300 °C

Universal tube furnaces for many laboratory applications, horizontal or vertical operation

- Temperatures up to 1300 °C, flexibility of use
- Hinged housing with half-shell modul for heating and insulation
- Base selectable for horizontal or vertical operation
- Stainless steel casing, long service life, extremely resilient
- High-quality heating elements with long service life
- Control unit in separate housing
- Digital program controller supplied as standard



Technical data

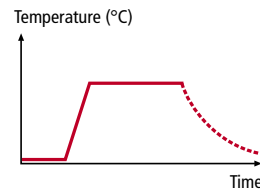
Model	T max [°C]	External dimensions width x depth x height [mm]	Tube Ø [mm]	Heated length [mm]	Tube length [mm]	Power [kW]	Weight [kg]	Voltage [V]
RO 50/500/13	1300	550 x 395 x 450	50	300	650	3,2	75	230 1/N
RO 50/500/13	1300	750 x 395 x 450	50	500	850	5,0	85	400 3/N
RO 50/750/13	1300	1000 x 395 x 450	50	750	1100	8,0	95	400 3/N
RO 75/500/13	1300	750 x 405 x 460	75	500	850	6,5	85	400 3/N
RO 75/750/13	1300	1000 x 405 x 460	75	750	1100	10,0	95	400 3/N
RO 100/500/13	1300	755 x 465 x 520	100	500	850	7,0	85	400 3/N
RO 100/750/13	1300	1000 x 465 x 520	100	750	1100	11,5	95	400 3/N

Innovative Control Systems

Cutting-edge control technology is supplied as standard with THERMCONCEPT furnaces. Microprocessor controllers ensure precision furnace management for both simple and complex processes. The HT 40A and INDUSTRY program controllers are standard controllers fitted in THERMCONCEPT furnaces. They excel through simple, straightforward operation. If necessary, the control equipment can be supplemented, e.g. by the THERMcontrol software for control and analysis. Multi-zone control is used when temperature distribution must meet highest standards.

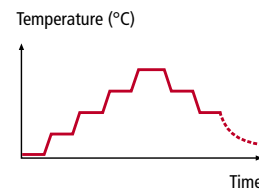
HT 40A Program Controller

- Simple, straightforward operation
- Starting time of furnace is programmable
- Programmable heat-up curve and holding time
- Control accuracy +/- 2 K
- RS 232 or RS 485 interface for PC connection (optional extra)



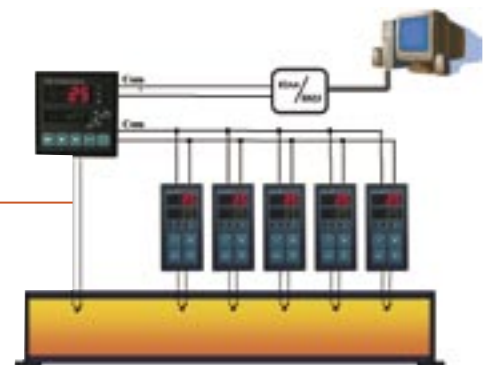
INDUSTRY Program Controller

- Programmable PID controller with realtime clock
- Simple, straightforward operation
- 30 programs each comprising 15 individually programmable segments, for demanding requirements and greater convenience
- Data logging (temperature/time)
- Control of 3 additional functions that can be activated in-process
- Automatic start of furnace is programmable
- Control accuracy +/- 2 K
- RS 232 or RS 485 interface for PC connection (optional extra)



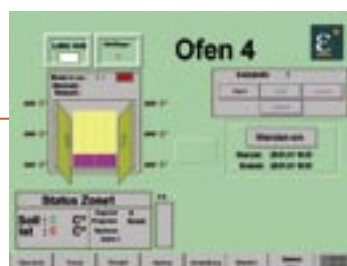
THERMcontrol

- Furnace can be controlled and monitored from PC
- Program input and operation of the INDUSTRY controller
- Monitoring and documentation of process data
- Storage of data
- Display and print-out of process data in tables and charts



Process visualisation

- Wonderware InTouch©
- Lab View©



Experts in Furnaces

THERMCONCEPT supplies an extensive range of laboratory and industrial furnaces for

- Research and laboratory
- Glass and ceramics
- Heat treatment of metals
- Foundries

Ask for our special brochures.



Proven technology:

Our furnaces are made using only the best materials from world-renowned suppliers. Thus ensures maximum efficiency, reliable operation and a long service life.

Cutting-edge design:

The furnaces are planned and executed in strict accordance with economic considerations. Direct contact with users enables us to design furnaces that are practical to use. Our aim is to deliver crucial technical and financial benefits.

Wide range of standard furnaces:

Many applications can be achieved with our extensive range of standard furnaces. The advantages for you: proven, fully-developed models, excellent value for money and quick delivery times.

Customer-specific solutions:

Of course, we also supply customised furnaces specially designed to meet your specific application. In close consultation with you, we create a furnace system with which you can perform your challenging tasks both reliably and economically.

Professional service:

With our skilled workforce we are able to provide you from the outset with a wide range of professional services relating to furnaces, to help you make the right decisions:

- Expert advice on applications and uses, so that you make the right investment decisions
- Simulation of your processes in our test centre
- DKD calibration / plant calibration on site or in our laboratories
- Inspection, maintenance and repairs
- Fast delivery of replacement parts
- Information and training in our laboratory



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