

Muffle Furnaces up to 1400 °C

Muffle furnaces are the reliable and long-lasting all-rounders in the laboratory and are ideally suited for a large number of processes in the field of material research and heat treatment.



Dual shell housing made of textured stainless steel sheets with additional fan cooling for low surface temperature



Solid state relays provide for low noise operation



Exclusive use of insulation materials without categorization according to EC Regulation No 1272/2008 (CLP). This explicitly means that aluminosilicate wool, also known as "refractory ceramic fiber" (RCF), which is classified and possibly carcinogenic, is not used.



NTLog Basic for Nabertherm controller: recording of process data with USB-flash drive



Defined application within the constraints of the operating instructions



As additional equipment: Process control and documentation via VCD software package for monitoring, documentation and control



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Muffle Furnaces up to 1100 °C or 1200 °C

The muffle furnaces L 1/12 - LT 40/12 have been proven for daily laboratory use. These models stand out for their excellent workmanship, advanced and attractive design, and high level of reliability. The muffle furnaces come equipped with either a flap door or lift door at no extra charge.



Muffle furnace LT 5/12 with lift door

Standard Equipment

- Tmax 1100 °C or 1200 °C
- Heating from two sides by ceramic heating plates (heating from three sides for muffle furnaces L 24/11 - LT 40/12) for an optimal temperature uniformity see page 71
- Thermocouple type N (1100 °C) or type S (1200 °C)
- Ceramic heating plates with integral heating element which is safeguarded and easy to replace
- Optional flap door (L) which can be used as work platform or lift door (LT) with hot surface facing away from the operator
- Adjustable air inlet integrated in door (see illustration)
- Exhaust air outlet in rear wall of furnace
- Controller B510 resp. R7 for L 1/12 (5 programs with each 4 segments), alternative controllers see page 78



Muffle furnace L 3/11 with flap door

Additional Equipment

- Chimney, chimney with fan or catalytic converter (not for L 1 and L 15) see page 24
- Over-temperature limiter with adjustable cutout temperature as temperature limiter to protect the oven and load
- Protective gas connection to purge with non-flammable protective or reaction gases (not available in combination with chimney, chimney with fan or catalytic converter) not gas tight
- Manual or automatic gas supply system
- Port for thermocouple in the rear wall or in the furnace door
- Charging rack with closed or perforated trays for loading the furnace in two levels incl. holder for inserting/removing the trays up to a max. temperature of 800°C and a max. loading weight of 2 kg for the L(T) 9/11 respectively 3 kg for the L(T) 15/11
- Please see page 25 for more accessories



Muffle furnace L 3/12



Muffle furnace L 3/11 with flap door

Model	Tmax in °C ¹	Inner dimensions in mm			Volume in l	Outer dimensions ² in mm			Temperature uniformity of +/- 5K in the empty workspace ⁵			Connected load in kW	Electrical connection*	Weight in kg	Heating time in min ⁴
		w	d	h		W	D	H ³	w	d	h				
L(T) 3/11	1100	160	140	100	3	385	330	405+155	110	50	50	1.2	1-phase	20	40
L(T) 5/11	1100	200	170	130	5	385	390	460+205	170	80	90	2.4	1-phase	30	50
L(T) 9/11	1100	230	240	170	9	415	455	515+240	180	150	120	3.0	1-phase	35	65
L(T) 15/11	1100	230	340	170	15	415	555	515+240	180	250	120	3.2	1-phase	40	75
L(T) 24/11	1100	280	340	250	24	490	555	580+320	230	250	200	4.5	3-phase	55	70
L(T) 40/11	1100	320	490	250	40	530	705	580+320	270	400	200	6.0	3-phase	65	75
L 1/12	1200	90	115	110	1	290	280	430	45	60	40	1.5	1-phase	10	25
L(T) 3/12	1200	160	140	100	3	385	330	405+155	110	50	50	1.2	1-phase	20	45
L(T) 5/12	1200	200	170	130	5	385	390	460+205	170	80	90	2.4	1-phase	30	60
L(T) 9/12	1200	230	240	170	9	415	455	515+240	180	150	120	3.0	1-phase	35	75
L(T) 15/12	1200	230	340	170	15	415	555	515+240	180	250	120	3.2	1-phase	40	85
L(T) 24/12	1200	280	340	250	24	490	555	580+320	230	250	200	4.5	3-phase	55	80
L(T) 40/12	1200	320	490	250	40	530	705	580+320	270	400	200	6.0	3-phase	65	85

¹Recommended working temperature for processes with longer dwell times is 1000 °C (L../11) resp. 1100 °C (L../12)

*Please see page 75 for more information about supply voltage

²External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.

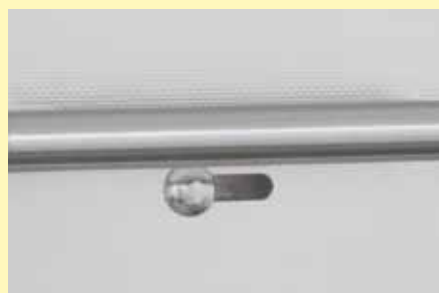
³Including opened lift door (LT models)

⁴Heating time of the empty and closed furnace up to Tmax - 100 K (connected to 230 V 1/N/PE resp. 400 V 3/N/PE)

⁵Temperature uniformity of +/- 5 K with closed fresh-air inlet in empty work space according to DIN 17052-1 at working temperatures above 800 °C see page 71



Chimney with fan



Adjustable air inlet integrated in the door



Gas supply system for non-flammable protective or reactive gas

Economy Muffle Furnaces up to 1100 °C

With their convincing price/performance ratio and the fast heat-up rates, these compact muffle furnaces are perfect for many applications in the laboratory. Quality features like the dual shell furnace housing of rust-free stainless steel, their compact, lightweight constructions, or the heating elements encased in quartz glass tubes make these models reliable partners for your application.



Muffle furnace LE 6/11

Standard Equipment

- Tmax 1100 °C
- Heating from two sides from heating elements protected in quartz glass tubes
- Fast heating times (see table)
- Maintenance-friendly replacement of heating elements and insulation
- Housing coated in RAL
- Flap door which can also be used as a work platform
- Exhaust air outlet in rear wall
- Compact dimensions and light weight
- Controller mounted under the door to save space
- Controller R7, controls description see page 78

Additional Equipment

- Chimney, chimney with fan or catalytic converter (not for LE 1 and LE 2) see page 24
- Please see page 25 for more accessories

Model	Tmax in °C ¹	Inner dimensions in mm			Volume in l	Outer dimensions ² in mm			Temperature uniformity of +/- 5K in the empty works- pace ⁴			Connected load in kW	Electrical connection*	Weight in kg	Heating time in min ³
		w	d	h		W	D	H	w	d	h				
LE 1/11	1100	90	115	110	1	290	280	410	40	65	60	1,6	1-phase	15	10
LE 2/11	1100	110	180	110	2	330	390	410	60	130	60	1,9	1-phase	20	15
LE 6/11	1100	170	200	170	6	390	440	470	120	150	120	2,0	1-phase	27	30
LE 14/11	1100	220	300	220	14	440	540	520	170	250	170	3,2	1-phase	35	35
LE 24/11	1100	260	330	280	24	490	570	590	200	270	230	3,5	1-phase	42	40

¹Recommended working temperature for processes with longer dwell times is 1050 °C

²External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.

³Heating time of the empty and closed furnace up to Tmax -100 K (connected to 230 V 1/N/PE)

⁴Temperature uniformity of +/- 5 K with closed fresh-air inlet in empty work space according to DIN 17052-1 at working temperatures above 800 °C see page 71

*Please see page 75 for more information about supply voltage



Muffle furnace LE 1/11



Muffle furnace LE 14/11



Heating elements protected in quartz glass tubes

Muffle Furnaces with Brick Insulation up to 1300 °C

Heating elements on support tubes radiating freely into the furnace chamber provide for particularly short heating times for these muffle furnaces. Thanks to their robust lightweight refractory brick insulation, they can reach a maximum working temperature of 1300 °C. These muffle furnaces thus represent an interesting alternative to the familiar L(T) ../12 models, when you need a higher application temperature.



Muffle furnace L 9/13 with flap door

Standard Equipment

- Tmax 1300 °C
- Heating from two sides
- Heating elements on support tubes ensure free heat radiation and a long service life
- Multi-layer insulation with robust lightweight refractory bricks in the furnace chamber
- Optional flap door (L) which can be used as work platform or lift door (LT) with hot surface facing away from the operator
- Adjustable air inlet in the furnace door
- Exhaust air outlet in rear wall of furnace
- Controller B510 (5 programs with each 4 segments), alternative controllers see page 78

Additional Equipment

- Chimney, chimney with fan or catalytic converter see page 24
- Over-temperature limiter with adjustable cutout temperature as temperature limiter to protect the oven and load
- Protective gas connection to purge with non-flammable protective or reaction gases (not available in combination with chimney, chimney with fan or catalytic converter) not gas tight
- Manual or automatic gas supply system
- Port for thermocouple in the rear wall or in the furnace door
- Please see page 25 for more accessories

Model	Tmax in °C ¹	Inner dimensions in mm			Volume in l	Outer dimensions ² in mm			Temperature uniformity of +/- 5K in the empty workspace ⁵			Connected load in kW	Electrical connection*	Weight in kg	Heating time in min ⁴
		w	d	h		W	D	H ³	w	d	h				
L, LT 5/13	1300	200	170	130	5	490	450	580+320	170	100	80	2.4	1-phase	42	60
L, LT 9/13	1300	230	240	170	9	530	525	630+350	180	170	120	3.0	1-phase	60	60
L, LT 15/13	1300	230	340	170	15	530	625	630+350	180	270	120	3.2	1-phase	70	70

¹Recommended working temperature for processes with longer dwell times is 1200 °C

²External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.

³Including opened lift door (LT models)

⁴Heating time of the empty and closed furnace up to Tmax -100 K (connected to 230 V 1/N/PE)

⁵Temperature uniformity of +/- 5 K with closed fresh-air inlet in empty work space according to DIN 17052-1 at working temperatures above 800 °C see page 71

*Please see page 75 for more information about supply voltage



Muffle furnace LT 5/13 with lift door



Furnace lining with high-quality lightweight refractory brick insulation



Example of an over-temperature limiter

Muffle Furnaces up to 1400 °C

These models stand out for their excellent workmanship, advanced and attractive design, and high level of reliability. Heating elements on support tubes radiating freely into the furnace chamber provide for particularly short heating times and a maximum temperature of 1400 °C. These muffle furnaces are a good alternative to the familiar L(T) ../12 series when higher application temperatures are needed.



Muffle furnace LT 9/14 with lift door

Standard Equipment

- Tmax 1400 °C
- Heating from two sides
- Heating elements on support tubes ensure free heat radiation and a long service life
- Adjustable air inlet integrated in door
- Exhaust air outlet in rear wall of furnace
- Controller B510 (5 programs with each 4 segments), alternative controllers see page 78

Additional Equipment

- Chimney, chimney with fan or catalytic converter see page 24
- Over-temperature limiter with adjustable cutout temperature as temperature limiter to protect the oven and load
- Protective gas connection to purge with non-flammable protective or reaction gases (not available in combination with chimney, chimney with fan or catalytic converter), not gas tight
- Manual or automatic gas supply system
- Please see page 25 for more accessories

Model	Tmax in °C ¹	Inner dimensions in mm			Volume in l	Outer dimensions ² in mm			Temperature uniformity of +/- 5K in the empty workspace ⁵			Connected load in kW	Electrical connection*	Weight in kg	Heating time in min ⁴
		w	d	h		W	D	H ³	w	d	h				
L, LT 5/14	1400	200	170	130	5	490	450	580+320	170	120	80	2.4	1-phase	42	50
L, LT 9/14	1400	250	250	170	9	530	525	630+350	180	190	120	3.2	1-phase	55	50
L, LT 15/14	1400	250	350	170	15	530	625	630+350	180	290	120	3.2	1-phase	63	70

¹Recommended working temperature for processes with longer dwell times is 1300 °C

²External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.

³Including opened lift door

⁴Heating time of the empty and closed furnace up to Tmax -100 K (connected to 230 V 1/N/PE)

⁵Temperature uniformity of +/- 5 K with closed fresh-air inlet in empty work space according to DIN 17052-1 at working temperatures above 800 °C see page 71

*Please see page 75 for more information about supply voltage



Muffle furnace L 9/14 with flap door



Chimney with fan



Example of an over-temperature limiter

Muffle Furnaces with Embedded Heating Elements in the Ceramic Muffle up to 1100 °C

We particularly recommend the muffle furnace L 9/11/SKM for heat treatment of aggressive substances. The furnace has a ceramic muffle with embedded heating from four sides. The muffle furnace thus combines a very good temperature uniformity with excellent protection of the heating elements from aggressive atmospheres. Another aspect is the smooth, nearly particle free muffle (furnace door made of fiber insulation), an important quality feature.



Muffle furnace L 9/11/SKM with flap door

Standard Equipment

- Tmax 1100 °C
- Muffle heated from four sides
- Furnace chamber with embedded ceramic muffle, high resistance to aggressive gasses and vapours
- Optional flap door (L) which can be used as work platform or lift door (LT) with hot surface facing away from the operator
- Adjustable working air inlet in the door
- Exhaust air outlet in rear wall of furnace
- Controller B510 (5 programs with each 4 segments), alternative controllers see page 78

Additional Equipment

- Chimney, chimney with fan or catalytic converter see page 24
- Over-temperature limiter with adjustable cutout temperature as temperature limiter to protect the oven and load
- Protective gas connection to purge with non-flammable protective or reaction gases (not available in combination with chimney, chimney with fan or catalytic converter) not gas tight
- Manual or automation gas supply system
- Port for thermocouple in the rear wall or in the furnace door
- Please see page 25 for more accessories

Modell	Tmax in °C ¹	Inner dimensions in mm			Volume in l	Outer dimensions ² in mm			Connected load in kW	Electrical connection*	Weight in kg	Heating time in min ⁴
		w	d	h		W	D	H				
L 9/11/SKM	1100	230	240	170	9	490	505	580	3.4	1-phase	50	75
LT 9/11/SKM	1100	230	240	170	9	490	505	580+320 ³	3.4	1-phase	50	75

¹Recommended working temperature for processes with longer dwell times is 1000 °C

²External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.

³Including opened lift door

⁴Heating time of the empty and closed furnace up to Tmax - 100 K (connected to 230 V 1/N/PE)

*Please see page 75 for more information about supply voltage



Muffle furnace L 9/11/SKM



Gas supply system for non-flammable protective or reactive gas



Muffle heated from four sides