

Ashing Furnaces with Integrated Exhaust Gas Cleaning up to 1100 °C

The ashing furnaces L .. /11 BO are specially designed for processes in which organic substances have to be evaporated from the charge, as e. g. during debinding of small ceramic products after additive manufacturing. Other processes, for which this furnace series is designed for, are for example, ashing of (food) samples, thermal cleaning of injection molding tools or loss on ignition determination.

The ashing furnaces therefore have a passive safety system and integrated exhaust gas post combustion. An exhaust gas fan extracts the exhaust gases from the furnace and simultaneously supplies fresh air to the furnace atmosphere with the result that sufficient oxygen is always available for the process. The incoming air is guided behind the furnace heating and preheated to ensure good temperature uniformity. Exhaust gases are directly led from the furnace chamber to the integrated post combustion system, where they are burned and catalytically cleaned. After the debinding/ashing process (up to max. 600 °C), a sintering process up to max. 1100 °C can be performed.



Ashing furnace L 40/11 BO

Standard Equipment

- Tmax 600 °C for the incineration process
- Tmax 1100 °C for the subsequent process
- Three-side heating (both sides and bottom)
- Ceramic heating plates with embedded heating wire
- Steel collecting pan protects the bottom insulation
- Spring-assisted closing of the furnace door (flap door) with mechanical locking against unintentional opening
- Thermal/catalytic post combustion, integrated in the exhaust channel, up to 600 °C in function
- Temperature control of post combustion can be set up to 850 °C
- Monitored exhaust air
- Inlet-air preheated through the bottom heating plate
- Over-temperature limiter with adjustable cutout temperature as temperature limiter to protect the furnace and load
- Controller with touch operation C550 (10 programs with each 20 segments), alternative controllers see page 84

Model	Tmax in °C ¹	Inner dimensions in mm			Volume in l	Outer dimensions ² in mm			Max. loading weight of organic substances in g	Max. evaporation rate of organic substances g/min	Connected load ⁴ in kW	Electrical connection*	Weight in kg
		w	d	h		W	D	H ³					
L 9/11 BO	1100	230	240	170	9	415	575	750	75	1.0	7.0	3-phase	60
L 24/11 BO	1100	280	340	250	24	490	675	800	150	2.0	9.0	3-phase	90
L 40/11 BO	1100	320	490	250	40	530	825	800	200	2.1	11.7	3-phase	110

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.

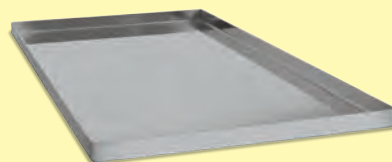
³Including exhaust tube (Ø 80 mm)

⁴The connected load refers to the standard furnace and may increase for a furnace with additional equipment. For furnaces with connection options for multi-range voltages, the connected load applies to the highest permissible connected voltage.

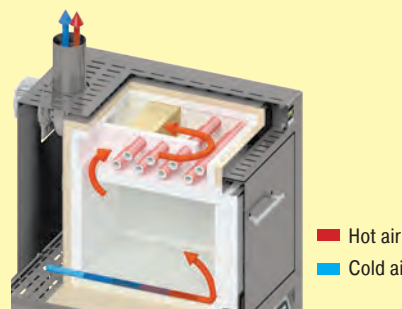
*Please see page 84 for more information about supply voltage



Ashing furnace L 9/11 BO



Steel collecting pan protects the bottom insulation



Schematic presentation of air circulation in ashing furnace L 24/11 BO

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. Moreover, Nabertherm offers specially designed ashing furnaces for the wide range of analyzes of ash residues.

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



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.



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 documentation 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