Description: e.g. L 03/12– laboratory volume in litres/shortened max. temperature

Application
For firing of enamels.

Benefits
Stainless mantle ensures the long lifetime of the furnace. The heating elements placed in the ceramic heating boards. The heating coils are by this partially protected against the attack by the incursive matters, which can loose from the charge. The programmable controllers and the control switch on the front of the furnace.

Professional photography L:



Furnace construction
All the types have a frameless construction. The shell is made of stainless bent metal plate with the decoration 0,8 mm thick. Inside the bottom of the floor and inside of the back side there are air vents providing cooling of the mantle by the natural air flow. The muffle is made of insulative expanded plates of mineral grains. All models are designed as desktop types.

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Door

The door is made of bent metal plate shaped as a tank and it is opening on the axis downards. The braking force at opening is extrapolated by a torsional spring. The spring also provides a downforce door in the closed position.

Furnace insulation

The chamber is composed of insulating expanded boards of mineral grains. The ceiling and the bottom is completed by a microporous insulating panel. The heating panels are for all the models inside of the ceiling and the bottom, they are made of a ceramic plate with cavities, in which the heating helix is inserted. The panels are supported by a ceramic tube of 8 mm diameter. Between the outer side of insulating panels and the mantle of the furnace there is air space. In the middle part of the back side of the furnace an airing chimney of Ø 20 mm is placed made of a ceramic pipe (the outer diameter 33 mm) passing through the insulation out of the furnace.

Door insulation

The door is filled by a plate of mineral grains, which is fixed with an iron-plate tank.

Heating

For all the volumes the furnaces are designed for the temperature of 1200 °C. The heating is provided by heating spirals placed in inner grooves of ceramic plates.

Electrical construction

All electrical elements are set in the space below the muffle. The safety-fuse(s) is (are) set on the back side of the furnace. The main rocker switch and the regulator are set at the frontal panel below the door.
The door is equipped with a security limit switch. When opening the furnace the heating will switch off. All the types are fitted with a flex line of 3 m.

Measurement and regulation

The temperature in the furnace is scanned by thermocouple type S (PtRh-Pt). The regulation and control of the furnace are provided by HtIndustry or Ht40AL regulators. The furnaces with the INDUSTRY regulator have an auxiliary regulator output led to a single-phase plug for connecting the extraction fan of the customer. The extract ventilator is regulated at every step of the program. The furnaces are fitted with the SSR contactless semiconductor closing relay. The furnace has no limiting unit.

Standard equipment of the furnace covers:

- Ht40AL controller
- Manually operated door opening downwards with an end switch
- Insulation from the mineral fibre insulation boards
- Heating panels from the refractory ceramics in the bottom and in the ceiling
- Airing chimney on the back part of the furnace
- Supply cable fitted with single-phase plug
- Thermocouple Type “S”
- Solid state relay

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Accessories for extra charge:

- HtIndustry / Ht205 controller
- ejector with an exhaust fan and draft diverter (for HtIndustry controller)
- RS232 or EIA485 interface
- set HtMonit (includes interface + software)
- floor plate
- protective atmosphere supply
- calibration of the controller measuring entry

Ashing furnace adjustments

Uses of ashing furnaces

The ashing furnace is used primarily for testing to determine ash content, but it is of course additionally also possible to use it for a wide range of laboratory tests which require sufficient fresh air supply and exhaust removal. The usable temperature range of this furnace is 450 °C – 1200 °C.

Furnace construction

The furnace construction is based on the L furnace and outfitted with the adjustments described below. The furnace accessories and their characteristics are the same as for the L furnace series.

Exhaust chimney

The double-jacketed stainless chimney extends 500 mm above the furnace and is secured to the furnace ceiling. The chimney is connected to an exhaust flue inside the furnace that is formed using the opening in the upper back side of the furnace. Any fumes generated during heat treatment or tests are withdrawn through this chimney.

Suction channels

Fresh air supply is secured with the goal of achieving of the best possible temperature distribution despite the continuous input of fresh air into the furnace. The air is drawn in through the back of the furnace, and initially does not enter the furnace inner chamber, but instead moves along grooves around the heating elements where it is heated. The heated air then enters the furnace chamber through the front section of the opening in the furnace ceiling. The furnace floor is not affected; i.e. there is no effect on the treatment of the charge.

Air exchange

The amount of air which moves through the furnace is dependent upon the temperature set in the furnace. The air moves at a rate which allows from six to twelve full air exchanges throughout the entire furnace each minute.

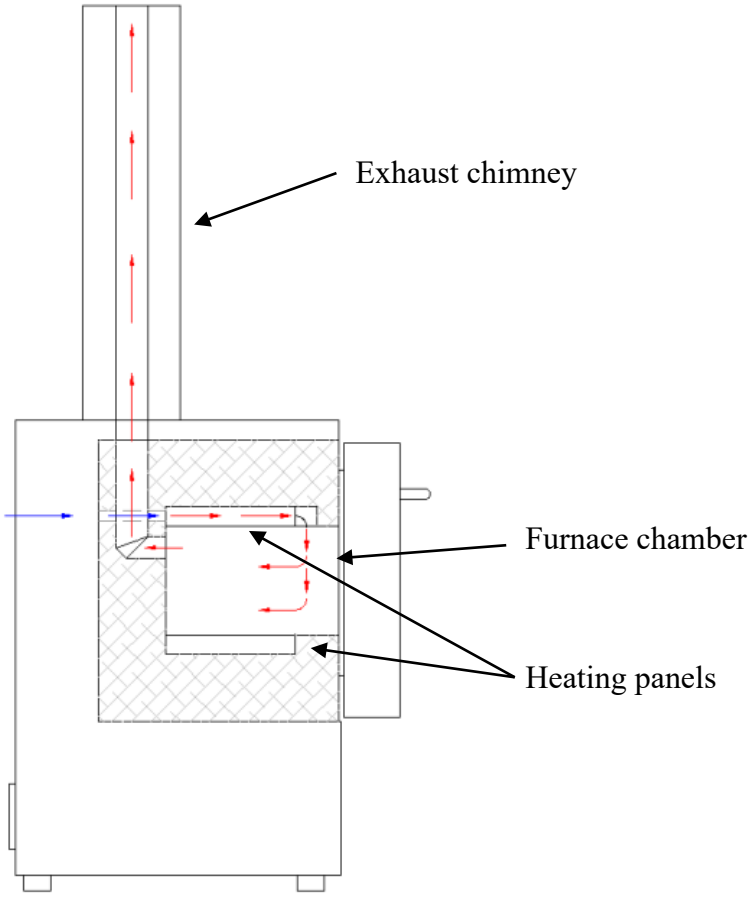
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Scheme of air exchange:



Order no.	LAC Type	Outer dimensions (wxhxd)*
1200°C	**Ht40 AL**	**mm**
01038443	LZ 03/12	380x940x400
01038444	LZ 05/12	430x970x430
01038445	LZ 09/12	430x1005x500
01038446	LZ 15/12	450x1005x600
1200°C	**INDUSTRY**	**mm**
01038447	LZ 03/12	380x940x400
01038448	LZ 05/12	430x970x430
01038449	LZ 09/12	430x1005x500
01038450	LZ 15/12	450x1005x600

*Furnace height stated including chimney

Warranty: 24 months

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Order No.		Type LAC	t max*	Volume	Outside dimensions (wxhxd)	Internal dimensions (wxhxd)	Power input	Weight	Protection	Voltage
	1200 °C	Ht40 AL	°C	l	mm	mm	kW	kg		V
	610666	L 03/12	1200	3	380x440x400	180x100x140	1,2	20	16/1	230
	610667	L 05/12	1200	5	430x470x430	230x130x170	2,4	26	16/1	230
	610668	L 09/12	1200	9	430x505x500	230x170x240	3,0	30	16/1	230
	610669	L 15/12	1200	15	450x505x600	250x170x340	3,5	40	16/1	230
		INDUSTRY								
	610684	L 03/12	1200	3	380x440x400	180x100x140	1,2	20	16/1	230
	610672	L 05/12	1200	5	430x470x430	230x130x170	2,4	26	16/1	230
	610685	L 09/12	1200	9	430x505x500	230x170x240	3,0	30	16/1	230
	610686	L 15/12	1200	15	450x505x600	250x170x340	3,5	40	16/1	230

** Tmax is the maximum temperature which can be attained by the furnace, but is not suitable for long-term operation.*

Type LAC	Max. floor load capacity (kg)
L 03	4
L 05	6
L 09	6
L 15	6

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Index změny	Změnu/revizi provedl	Popis změny/revize a č. změněných kapitol/listů	Datum, podpis	Změnu schválil Datum, podpis
3	Furchová	Warranty changed for 12 months. Optional accessories changed for Accessories for extra charge.	22. 2. 2009	Žilka
4	Horáková	Production of L furnaces for 1100 °C stopped, items in Accessories for extra charge changed, Warranty changed for 24 months, a table of Stock numbering of Accessories for extra charge added	11.4.2012	Diblík
5	Herůfek	New chapter added: „Ashing furnace adjustments“	19.8.2014	Diblík
6	Horáková	Industry controller moved from standard equipment to optional accessories.	16.3.2016	Názler

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