Designation

e.g. LHS 8/15 – Laboratory furnace with silit rod heating volume in liters/abbreviated maximum temperature

Marketing text (intended for catalogue, website etc. presentations)

Furnace with silit rods LHS to 1400/1500 °C

Furnace for medium temperature applications, something between the VP and the LH This model is between the VP and the LH in terms of max. temperature requirements
Silit rods are an inexpensive way to reach higher working temperatures. They boast lower maintenance, a longer life, and are more resistant to temperature shock than the MoSi2 heating elements that are used in the VP furnace.
The high-density silit rod construction of the LHS furnace allows it very rapid temperature increase. It can reach 1400 °C in 40 minutes. The LHS is also lighter and less bulky than the VP furnace.

Icons: medium temperature range, silit rods resistant to thermal shock, lower purchase price compared with VP furnace, simple installation and operation, custom adjustments, dispatch in as little as five weeks, silent operation, 24-month warranty, prompt customer support

PHOTO LHS





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Batch processing technology (S=suitable PS=partially suitable)
The LHS laboratory furnace is suitable for these laboratory applications, among others.

- Sintering; solid state, liquid phase, and powder sintering (S)
- Testing of materials (S)
- Enamel firing (PS)
- Melting of metal materials (PS)
- Fusing of glass (PS)

Benefits of the device

- rapid achievement of the required temperature (1400 °C within 40 minutes)
- heating elements with long service life
- temperature shock-resistant silit rod heating elements
- compact dimensions (desktop design)
- convenient furnace servicing (electro compartment located in the bottom part of the furnace)

What to be aware of

- silit heating elements are extremely fragile, there is danger of damage both during transport and when working with the furnace
- the insulation it Is also very fragile; there is danger of damage during transport and also during manipulation of the charge
- heating element performance will decline with time (with use of the elements). This is a standard characteristic of silit rod heating elements
- The furnace jacket is cooled by a fan and heat is generated into the room where the furnace is located. The cooling vents must never be covered. The furnace insulation used is designed to compromise between low energy losses and the amount of heat accumulated in the insulation.

Sales arguments
LHS furnaces are particularly suited for long-term processes at temperature ranges above 1200 °C at which standard laboratory furnaces with resistance wire heating elements can no longer operate. The LHS does not require a bulky transformer, so its desktop furnace dimensions are significantly less bulky than the high temperature VP type furnace. Silit heating rods have a high power density allowing for a much quicker achievement of the required temperature than would be possible with a VP furnace. In addition, the LHS purchase price is lower than the VP.

Furnace construction
The furnace is designed for desktop placement and has adjustable feet so as to ensure a level surface. The door opens upwards on a pantograph mechanism, and when closed, the door insulation seals tightly onto the door portal insulation. Heating is done with silit rods mounted on the sides of the inner furnace chamber.

Frame and jacket
All models of the furnace have a frameless design. The furnace jacket is made of patterned stainless

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steel sheets and is perforated to facilitate sufficient airflow. This allows the cooling of the furnace jacket. The front grille is made of structural steel, color LAC 9005.

Door

The door is made of a stainless steel-shaped tray and opens upwards. Door opening is manual and done using the parallel handles located on the front of the door. The door mechanism is set on springs for ease of opening.

Furnace and door insulation

The furnace installation is multilayered and consists of mineral fiber plates combined with microporous installation. The furnace installation is built into its own separate frame. The furnace door installation is also affixed to its own frame allowing for the possibility of adjustments to ensure uniform insulation pressure on the furnace door portal.

Heating

The silit rod heating elements are located on the sides of the inner furnace chamber in all models. The elements are capable of long-term use at temperatures very near the maximum temperature of the furnace.

Electrical design

The main regulating components in all models are located in the bottom part of the furnace in a separate compartment which can be accessed by unscrewing after removing the back cover. The furnace door is equipped with a safety limit switch which automatically shuts off all power upon opening the door. Both the electrical compartment and the furnace jacket are cooled by powerful fans. Fresh air is drawn in through the bottom of the furnace and blown out through the upper part of the furnace jacket. The main circuit breaker is installed on the back side of the furnace. The furnace is three-phased and a 3m power cable with CEE plug is supplied with the furnace.

Measurement and regulation

The temperature in the furnace is scanned by a type B thermocouple. An HT205 controller regulates and controls the furnace. The furnace is equipped with a contactless solid state relay SSR. The furnace is not equipped with a limit unit. The controller and the main power switch are located on the front of the furnace.

Warranty

- 24 months
- Heating elements (silit rods) are consumables and are not included in the warranty. Their service life is dependent upon the frequency of use, as well as upon the chosen temperature. Wear and tear is the standard result of use.

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Standard design of furnace includes:

- Ht205 controller (30 programs of 15 steps each)
- silit rods on the furnace sides
- mineral fiber insulation panels
- forced jacket cooling with ventilator fan
- type 'B'' thermocouple
- contactless solid state relays for silent operation
- door limit end-switch for safe opening of the furnace
- manual door opening upwards
- desktop design

Optional accessories for additional charge:

- Ht200 controller (30 programs of 25 steps each, USB interface)
- protective atmosphere inlet (manually or automatically controlled gas supply)
- ejector with exhaust fan and draft diverter for the extraction of fumes
- protective floor plate
- calibration of controller input measurement
- interface RS232, EIA485 or Ethernet including cable and software
- HtMonit set (software + interface)

Atypical accessories for extra charge (more complicated than standard accessories)

- Presently not available

Note that combining accessories may change the technical parameters of the equipment.

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Order No.	LAC Type	T max	Tmax for long-term use	Inner Volume	External dimensions (wxhxd)*	Internal dimensions (wxhxd)*	Heating power*	Weight	Protection**	Voltage
		°C	°C	l	mm	mm	kW	kg		V
01006011	LHS 03/14	1400	1350	3	440x565x600	120x120x210	4	50	16/3	400
01006012	LHS 08/14	1400	1350	8,4	490x615x680	170x170x290	8	60	16/3	400
01006013	LHS 15/14	1400	1350	14,4	550x670x710	220x220x310	13	100	25/3	400
01006021	LHS 03/15	1500	1450	3	440x565x600	120x120x210	4	50	16/3	400
01006022	LHS 08/15	1500	1450	8,4	490x615x680	170x170x290	8	60	16/3	400
01006023	LHS 15/15	1500	1450	14,4	550x670x710	220x220x310	13	100	25/3	400

*Heating element performance is dependent upon the furnace temperature at any given moment. The above performance is calculated at 1000° with decreasing temperature.

**Protection may vary according to the optional accessories selected.

Subject to technical changes.

LAC Type	Max. floor load kg	Max. areal floor load kg/cm^2
LHS 03/14	1	0,1
LHS 08/14	5	0,1
LHS 15/14	8	0,1
LHS 03/15	1	0,1
LHS 08/15	5	0,1
LHS 15/15	8	0,1

Technické změny vyhrazeny

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Change index	Change/revision by	Description of change/revision and no. of revised section/page	Date, signature	Change approved by
1	Diblík	Creation of the data sheet		Názler
2	Patschová	Modifications and additions		Názler
3	Horáková	Tech. table – volume of furnaces for type 03/14 and 15 fixed from 5 l to 3 l		

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