

LABINDIA
EQUIPMENTS
WHERE COMMITMENT IS CULTURE

LABTHERM
laboratory *furnaces*

450°C up to 2000°C

HLF Series Heat Treatment Furnaces



Available with brick and fiber insulation elements, with a wide variety of options, **LABTHERM HLF series** is the optimum choice for general heat treatment procedures.

Used by many professionals and craftsman for many years, standard HLF series furnaces cover a range up to 1200°C and have a volume of 1000 litres. However, we do provide a much larger range for our customers on request with customized models.

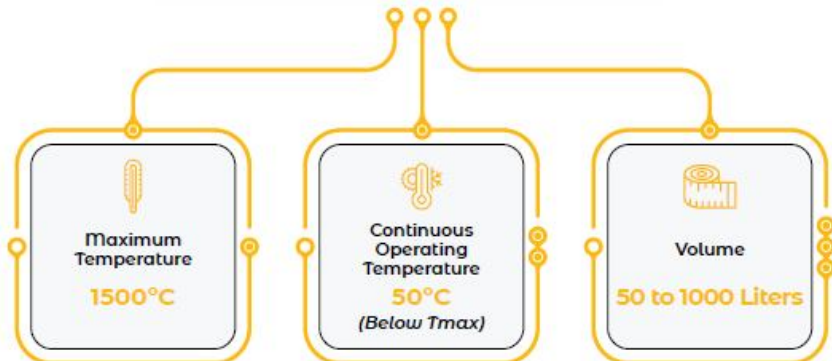
Galvanized coating covered epoxy painted structure, providing longer lifetime and aesthetics.

HLF series are medium sized industrial chamber furnaces available with brick and fiber insulation materials.

HLF series are designed and built to be hard-wearing, safe, and easy to service heat treatment furnaces.

System Features:

- Vertical or sideways opening door
- Door safety switch
- Customized controller option
- High-quality fiber material
- High level temperature uniformity
- Custom made carriage track fitted for the installation site
- Door with hand fitted brick-on-brick seal
- High quality heating elements and ceiling construction ensuring a long service life
- Dual skin housing for low external temperatures and high temperature stability
- Easy maintenance and service procedures
- Multiple and extra heating sides added according to customer needs



Model	Maximum Temperature (°C)	Continuous Operating Temperature (°C)	Volume (L)	Inner Dimensions (HxWxD) (cm)	Outer Dimensions (HxWxD) (cm)	Power (kW)	Phase
HLF 50	1200	1150	50	40x35x35	67x84x74	3.6	1
HLF 100	1200	1150	100	50x40x50	110x94x93	8	3
HLF 140	1200	1150	140	70x40x50	135x95x95	12	3
HLF 200	1200	1150	200	80x45x55	150x103x95	12	3
HLF 300	1200	1150	300	75x50x80	130x103x110	18	3
HLF 400	1200	1150	400	73x75x75	135x132x120	21	3
HLF 500	1200	1150	500	80x80x80	138x154x125	24	3
HLF 1000	1200	1150	1000	85x90x125	140x167x170	33	3

Optional Features:

- Over-temperature limiter for thermal protection
- Adjustable air intake opening in the furnace door.
- Exhaust air opening in the of the furnace roof.
- Option of hydraulic opening door
- Data logger with the software
- RS422/485 communication
- Bottom, lid or back side heating
- Protective Gas Connection
- Extra load wagon
- Protective gas system and connection



Furnace properties:

Heavy-duty swivel casters with individual brakes

Dual shell; low external temperatures and high inner temperature stability

Outer case: Phosphate coated, and epoxy painted steel body.

Inner case: Galvanize coated. High quality asbestos-free fiber board insulation at the sides and the ceiling of the furnace interior.

Top grade insulation brick at the furnace frame, the lid and floor increasing. higher durability against spills and collisions. Low energy consumption insulation utilized for a greener product.

Chimney:

Positioned at the top of the inner chamber for the natural ventilation of the furnace interior.

Over temperature alarm relay

Preventing over heating of the furnace, protecting the insulation material and the heating elements. (Purpose for this alarm is not for the protection of the sample and is not user configurable.)

Power Control Unit using silent solid-state relays (SSRs)

Top quality switchgear components

Type S (Platin-Platin/Rhodium) ceramic sheathed corrosion resistant Thermocouple.

Door properties:

Upwards opening lid; With counterweight balancing, Robust handles on the door, designed for convenient grip with gloves. Door safety switch: disabling current to heating elements when the furnace door is open; protects the operator from possible electric shocks.

Heating System:

Wire heating elements positioned on both sides of the hot zone; additional.

Heated sides could be added on request, up to 4 sides.

Optimized surface load of elements for high durability and longer lifetime

Heating elements supported by carved insulation beddings, reducing possible damages from spills and providing simple, convenient maintenance.

Heating element locations for prime temperature uniformity

Straight forward and user-friendly installation and possible exchange of parts.

Quality Certificates:

CE marked:

ISO 9001

The furnace will be thoroughly tested and provided with a QA report.

Controllers

LABTHERM Furnaces provide a wide range of temperature controller options. All controllers provided by LABTHERM Furnaces have built in sockets and are easy to replace, for faster and quicker servicing.

LABTHERM Furnaces brand controllers are rugged, durable and have a user-friendly utilization. Standard controller brands provided are Eurotherm, Omron and LABTHERM PDC 100, as well as other brands on request.

Together with this catalogue our new controller PDC-100 is arriving into our set of controllers as the most sophisticated one PDC-100 has a touch screen, multi-language capability, multi stage PID definition to sensitive control and is capable of remote controlling. It arrives in 5 language as standard but also possible to upload almost any language for End User's convenience.



Temperature Control System Properties

- High durability membrane & buttons for input
- High candela screen brightness
- Compact controllers with large screen area
- Intuitive controller interface
- Multi-programmable & simple controller optionality

* For other controller brand inquiries, please contact us





No	Model Name	Control Type	Display	Program Option	Extra Features	Set/Actual Value
1	PC442T	PID Controller	Dual Display with Clear & Large Text	Auto Shut Down Function with Timer Adjustable Upto 9999 Minutes	"Hot Start" & "Delay Timer"	Set & Actual Value Compatibility
2	PC442/MP20	PID Controller	Dual Display with Clear & Large Text	20 Programs with 40 Programmable Segments	"Hot Start" & "Delay Timer"	Set & Actual Value Compatibility
3	Omron E50C	PID Controller	Dual Display with Clear White & Large Text	Non Programmable	"Hot Start" Function	Set & Actual Value Compatibility
4	Omron E5EC-T	PID Controller	Dual Display with Clear White & Large Text	8 Programs with 32 Programmable Segments	"Hot Start" & "Delay Timer"	Set & Actual Value Compatibility
5	Eurotherm3208	PID Controller	Dual Display with Clear & Large Text	5 Programs with 8 Programmable Segments	"Hot Start" Function	Set & Actual Value Compatibility
6	Eurotherm3508	PID Controller	Dual Display with Clear & Large Text	50 Programs with 100 Segments	"Hot Start" Function	Set & Actual Value Compatibility
7	PDC-100	PID Controller	TouchScreen	30 Programs with 50 Segments		Set & Actual Value Compatibility

5" digital multi colour display
Touch screen panel
Observation of details of programme
Remainder time
Actual no of steps
Can be remotely controlled
5 set of PID applicable in each programme
USB storage and downloading
Hot start facility

Chamber Furnace Accessories List

RETORT BOX

Retort box is an economical solution for enabling controlled atmosphere environments within the chamber furnace. Usable up to 1150 °C of working conditions, the Protherm Furnaces retort boxes can be customized depending on the customer requirement.



Furnace Volume (L)
6
<10
<30
<60
<100

OVER TEMPERATURE PROTECTION

PC 442 T Model is used as an external over temperature protection controller as a standard. For more information regarding the unit please examine the Controller Manual.



Dimensions (HxWxD mm)	Power Supply	Construction
50 x50x75	AC 85-265V, 50/60Hz	Stainless Steel

EXHAUST JET FAN

Exhaust Jet Fan is used for the removal of heated air faster from the chamber in order to provide both uniformity and exchange of air.



Power (W)
2.5
4
6

WAGON

The wagon is an optional accessory providing the operator to remove the bottom of the furnace out, for easy replacement, and observation procedures.



Suitable Furnace Volume
45
50
60
≥100

ROTAMETER

Available for multiple flow rates, the Acrylic Flowmeter has a Dual Direct Reading Scale with yellow background for easy viewing. Provided with a valve and stainless steel float for operators utilization.



Measurement Range	Connection	Fitting
1000 NI/h	1/8" FNPT	Stainless Steel

CRUCIBLE TRAY

Crucible tray is provided for different sizes for different crucibles. Please make sure to check the inner dimensions of the furnace before ordering from your authorized dealer.



Dimensions (WxD cm)
19x18
18x24
20x29
26x37
28x48

QUARTZ OBSERVATION HOLE

Observation holes are provided for operator to analyze the reactions taking place during the heating process. The standard hole sizes are provided below.



ID of hole (mm)
40
50
75

GLOVES, TONGS AND MASKS

Furnace accessories such as heat resistant gloves, glasses, masks and tongs are available for your utilization from Protherm Furnaces.



Size
Small
Medium
Large

LABINDIA

EQUIPMENTS

WHERE COMMITMENT IS CULTURE

HEAD OFFICE:

Thane: 201, Nand Chambers, LBS Marg, Near Vandana Cinema, Thane (W) - 400 602. **Tel.:** +91-22-2598 6000 / 2598 6110 **E-mail:** sales.mfd@labindia.com

REGIONAL OFFICES:

Delhi: Tel.: +91-11-4330 6001 / 10

Chennai: Tel.: +91-44-2434 7008 / 2432 0352 **Kolkatta:** Tel.: +91-33-2466 3362

BRANCH OFFICES:

Bangalore: Tel.: +91 80 4565 6200

Lucknow: Tel.: +91-522-2346 535 / 2346 496 **Hyderabad:** Tel.: 040 4444 3530

Vadodara: Tel.: +91-265-2986 005 / 2986 006

Pune: Tel.: +91-20-2545 3386

Chandigarh: Tel.: +91-172-4090 001-07 / 4090 009

FACTORY 1: Plot No. EL-72, Electronic Zone, TTC Industrial Area, Thane Belapur Road, Navi Mumbai - 400 705. **Tel.:** +91-22-6107 6666

FACTORY 2: Plot No. W-401, TTC, MIDC Industrial Area, Rabale, Thane-Belapur Road, Navi Mumbai 400 701. **Tel.:** +91-22-6107 6555

APPLICATION & TRAINING CENTRE: R-909, TTC Industrial Area, Thane Belapur Road, Rabale, Navi Mumbai - 400 701. **Tel.:** +91-22-6107 6555



Striving to become the best individuals, we endeavour to foster the best team. Performing sensibly, we try to achieve the best efficiency. Working innovatively, we seek to make the best products. Listening patiently, we excel to offer the best service. So, no matter what you needs are, come to us, **GET THE BEST**

LABINDIA reserve the right to change specification without notice as part of its continuous programme of product development.