LABINDIA
EQUIPMENTS
WHERE COMMITMENT IS CULTURE

LABTHERM
laboratory*furnaces*

450°C up to 2000°C

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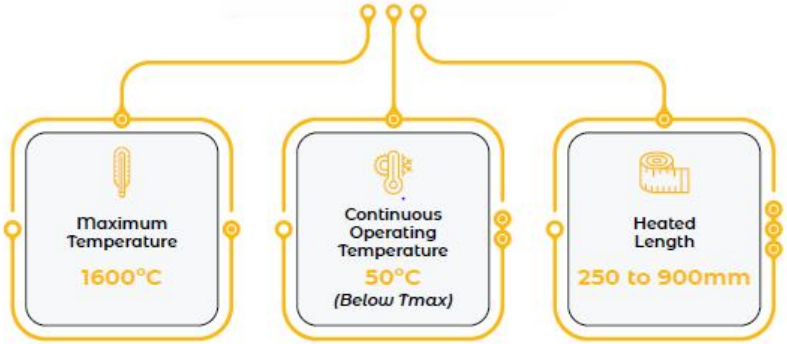
PTF Series
Tube Furnaces



LABTHERM PTF series tube furnaces are tube furnaces that could be used when laboratory experimentation is performed horizontally, vertically, or at specific angles. Configuration of the tilt angle, and the stable temperature environment make these furnaces suitable for many possible processes. Standard PTF series furnaces cover a range from 1100°C to 1600°C, using wire and SiC heating elements for processes. SiC heating rods installed parallel to the working tube ensuring perfect temperature uniformity and easy replacement.

PTF series are tube furnaces, suitable for heat treatment processes that are performed horizontally, vertically or at specific angles with controlled atmospheric conditions. Wire heating element is wounded directly onto the fixed ceramic tube to maintain excellent temperature uniformity within the tube. The stable heated length and the standard tube dimensions applicable to create vacuum or inert gas environment, make these furnaces suitable for many laboratory tests.

System Features:

Dual skin housing for low external temperatures and high inner temperature stability
Phosphate coated, and epoxy painted steel body outer case.
Wire heating elements wound directly around the ceramic tube maintaining excellent temperature uniformity.
Standard tube length suitable for modified atmosphere or vacuum environment
Silent SSRs providing low noise operation.
Over temperature alarm relay for furnace protection
Large variety of accessory options
Easy maintenance design.
Optimized surface load of elements for high durability and longer lifetime.
Leak current circuit breaker providing additional operator safety.

*** For custom sized larger or smaller furnaces please contact us**

LABTHERM laboratory furnaces 450°C upto 2000°C

Model	Maximum Temperature (°C)	Continuous Operating Temperature (°C)	Heated Zone (mm)	Stable Zone Length (mm)	External Dimensions (mm)	Tube size (Dø x length)	Tube Type	Weight (kg)	Power (kW)	Phase
PTF 12/20/250	1200	1150	250	80	495x350x345	20x500	C610	14	0.6	1
PTF 12/20/400	1200	1150	400	130	495x450x345	20x600	C610	18	0.7	1
PTF 12/38/250	1200	1150	250	80	495x350x345	40x250	C610	21	0.8	1
PTF 12/38/450	1200	1150	450	150	495x500x345	40x450	C610	22	1	1
PTF 12/38/600	1200	1150	600	200	495x650x345	40x800	C610	23	1.3	1
PTF 12/50/250	1200	1150	250	80	495x350x345	50x450	C610	23	1	1
PTF 12/50/450	1200	1150	450	150	495x500x345	50x650	C610	23	1.3	1
PTF 12/50/600	1200	1150	600	200	635x650x400	50x800	C610	29	1.4	1
PTF 12/75/600	1200	1150	600	200	635x650x400	75x800	C610	32	1.9	1
PTF 12/75/800	1200	1150	800	260	635x850x400	75x1000	C610	37	2.1	1
PTF 12/105/500	1200	1150	500	160	675x550x400	105x750	C610	31	2.3	1
PTF 12/105/750	1200	1150	750	250	675x800x400	105x1000	C610	36	3.1	1
PTF 12/105/900	1200	1150	900	300	675x950x400	105x1200	C610	41	3.1	1
PTF 14/20/180	1400	1350	180	60	520x600x350	26x600	C610	19	1.5	1
PTF 14/20/250	1400	1350	250	80	520x665x350	26x600	C610	22	1.8	1
PTF 14/38/180	1400	1350	180	60	675x600x400	40x750	C610	27	2.5	1
PTF 14/38/250	1400	1350	250	80	675x665x400	40x800	C610	28	3	1
PTF 14/50/180	1400	1350	180	60	675x600x400	50x750	C610	30	2.5	2
PTF 14/50/250	1400	1350	250	80	675x665x400	50x800	C610	38	3	2
PTF 14/50/450	1400	1350	450	150	745x850x400	50x1000	C610	40	4	2
PTF 14/50/610	1400	1350	610	200	745x1150x400	50x1300	C610	50	4.5	2
PTF 14/75/450	1400	1350	450	150	745x850x400	75x1000	C610	70	5.5	2

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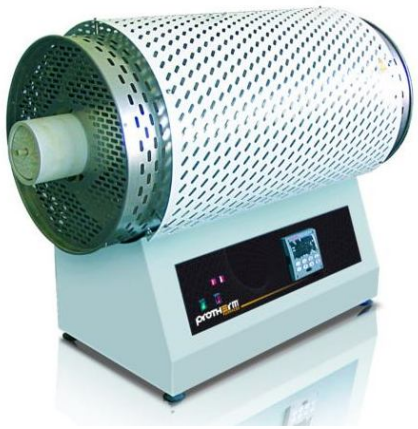
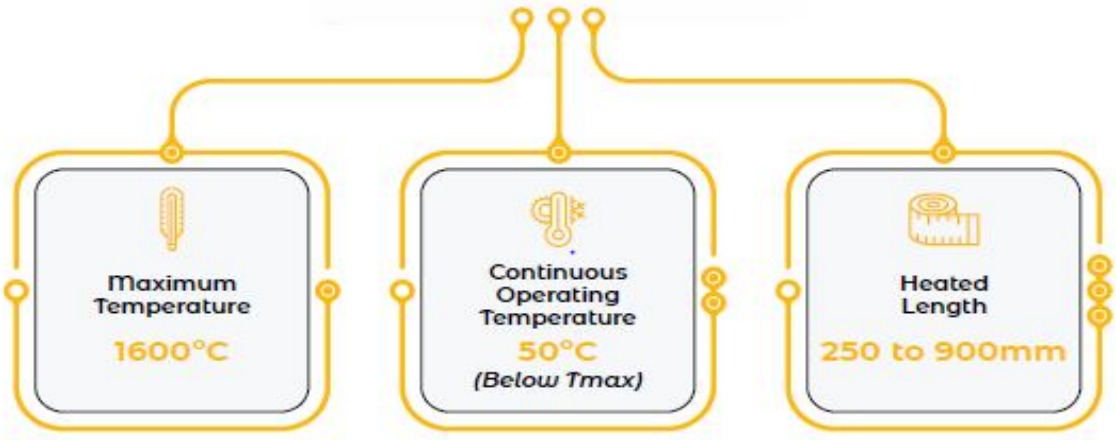
PTF 14/75/610	1400	1350	610	200	745x1150x400	75x1300	C610	82	6.5	2
PTF 14/105/450	1400	1350	450	150	785x850x400	100x1000	C610	90	7	2
PTF 14/105/610	1400	1350	610	200	785x1150x400	100x1300	C610	95	7.5	3
PTF 15/38/180	1500	1450	180	60	675x600x400	40x750	C799	31	2.3	1
PTF 15/50/180	1500	1450	180	60	675x600x400	50x750	C799	33	2.5	2
PTF 15/50/250	1500	1450	250	80	675x665x400	50x800	C799	46	3	2
PTF 15/50/450	1500	1450	450	150	745x850x400	50x1000	C799	48	4	2
PTF 15/50/610	1500	1450	610	200	745x1150x400	50x1300	C799	52	5	2
PTF 15/75/450	1500	1450	450	150	745x850x400	75x1000	C799	73	6	2
PTF 15/75/610	1500	1450	610	200	745x1150x400	75x1300	C799	85	7	2
PTF 16/38/250	1600	1550	250	80	675x350x400	40x800	C799	42	3.5	3
PTF 16/50/250	1600	1550	250	80	675x665x400	50x800	C799	46	4	2
PTF 16/50/450	1600	1550	450	150	745x850x400	50x1000	C799	48	5.5	2
PTF 16/50/610	1600	1550	610	200	745x1150x400	50x1300	C799	52	6	3
PTF 16/75/450	1600	1550	450	150	745x850x400	75x1000	C799	73	6.5	3
PTF 16/75/610	1600	1550	610	200	745x1150x400	75x1300	C799	85	7.5	3





Furnace properties:
Levelling feet pads for table-top usage
Dual shell; low external temperatures and high inner temperature stability, additional cooling fan is included for cooling components and the outer surface

Outer case:
Phosphate coated, and epoxy painted steel body.
Inner case:
Galvanize coated. High quality vacuum formed low-mass fiber insulation all around.
Low energy consumption insulation utilized for a greener product.
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 Driver Unit using Thyristor Module Top quality switch-gear components
Standard tube length suitable for modified atmosphere or vacuum environment, including two insulation plugs and two sample plates
Type B (Platin-Platin/Rhodium) ceramic sheathed corrosion resistant thermocouple.
Heating System:
High-quality molybdenum disilicide heating elements positioned on both sides of the hot-zone
Optimized surface load of elements for high durability and longer lifetime Heating element locations for prime temperature uniformity
Straight forward and user-friendly installation, with simple, convenient maintenance and exchange of parts possibility.
Quality Certificates: CE marked ISO 9001

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Optional Features

Over-temperature limiter for thermal protection
Display of inner tube temperature with an additional thermocouple
Check valve at gas outlet
Gas supply and blend systems for operation.
Alternative working tubes
Gas and water-cooled vacuum flanges
Universal design for vertical and angular usage
Data logger with the software
RS422/485 communication.

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**

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No	Model Name	Control Type	Display	Progmm 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 E5CC	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	Touch Screen	30 Programs with 50 Segments		Set & Actual Value Compatibility

Control Method

PID

Size

Compact

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 down loading
Hot start facility

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Tube Furnace Accessories List

LABTHERM provide a large variety of furnace accessories and equipment for different applications.

LABTHERM Furnace accessories could be used for different brand furnaces, please check with your dealer for compatibility.

HEAT PLUGS

Heat Plugs are used in order to avoid thermal shock and to keep the heat inside the tube. Protherm Furnaces provide standard plug sizes, as well as custom made ones.

Suitable Tube ID (mm)
20
40
50
75
105

CYLINDER PLATE

Cylinder Plate is used to put samples on top of it, in order to avoid spills and damages to the tube. Protherm Furnaces provide standard sample plates, as well as custom made ones.

Suitable Tube ID (mm)
20
40
50
75
105

GAS FLANGE

Gas flanges come in couples, with one end as an input and the other as the output. Ability to withstand a flow of 0.002 bars. Protherm Furnaces provide standard size gaz flanges, as well as custom made ones;

Tube ID (mm)	Tube OD (mm)
45	50
50	65
75	85
105	120

Q-LOCK VACUUM FLANGE

With ability to withstand 10-2 atm vacuum, the vacuum flange is used with silicone O-rings and has water cooling. Protherm Furnaces provide standard size vacuum flanges, as well as custom made ones;

Tube ID (mm)	Tube OD (mm)
45	50
50	65
75	85
105	120

INDICATOR DISPLAY AND THERMOCOUPLE

The heat difference between inside the tube and the measured temperature might could be a problem for sensitive experiments. Indicator display and thermocouple is used for providing the exact temperature inside the tube to the user, by stretching in the thermocouple inside next to the heat treated sample.

Furnace Hot Zone Length (mm)
≤300
≤600
≤900

GAS BLEND SYSTEM

Gas Blend systems with Rotameter are available for your utilization. Standard production gas blend systems include 2, 4 and 6 seperate gas mixture possibilities. For your additional inquiries please contact your authorized dealer.

Measurement Range per Input	Connection	Fitting
10.00 N/h	1/8" FNPT	Stainless Steel

PRECISE GAS BLEND SYSTEM

Gas Blend systems with mass-flow controllers, provide more precise and accurate mixtures, for your needs. Standard production gas blend systems include 2, 4 and 6 separate gas mixture possibilities.

Measurement Range per Input	
0 – 0.5 sccm Full Scale through 0 – 4000 slpm Full Scale	
Connections	**Mechanical Dimensions**
1/8" NPT Female	4.1"H x 2.4"W x 1.1"D
1/4" NPT Female	4.4"H x 4.0"W x 1.6"D
1/2" NPT Female	5.0"H x 4.0"W x 1.6"D
3/4" NPT Female	5.0"H x 4.0"W x 1.6"D

LABINDIA EQUIPMENTS

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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**