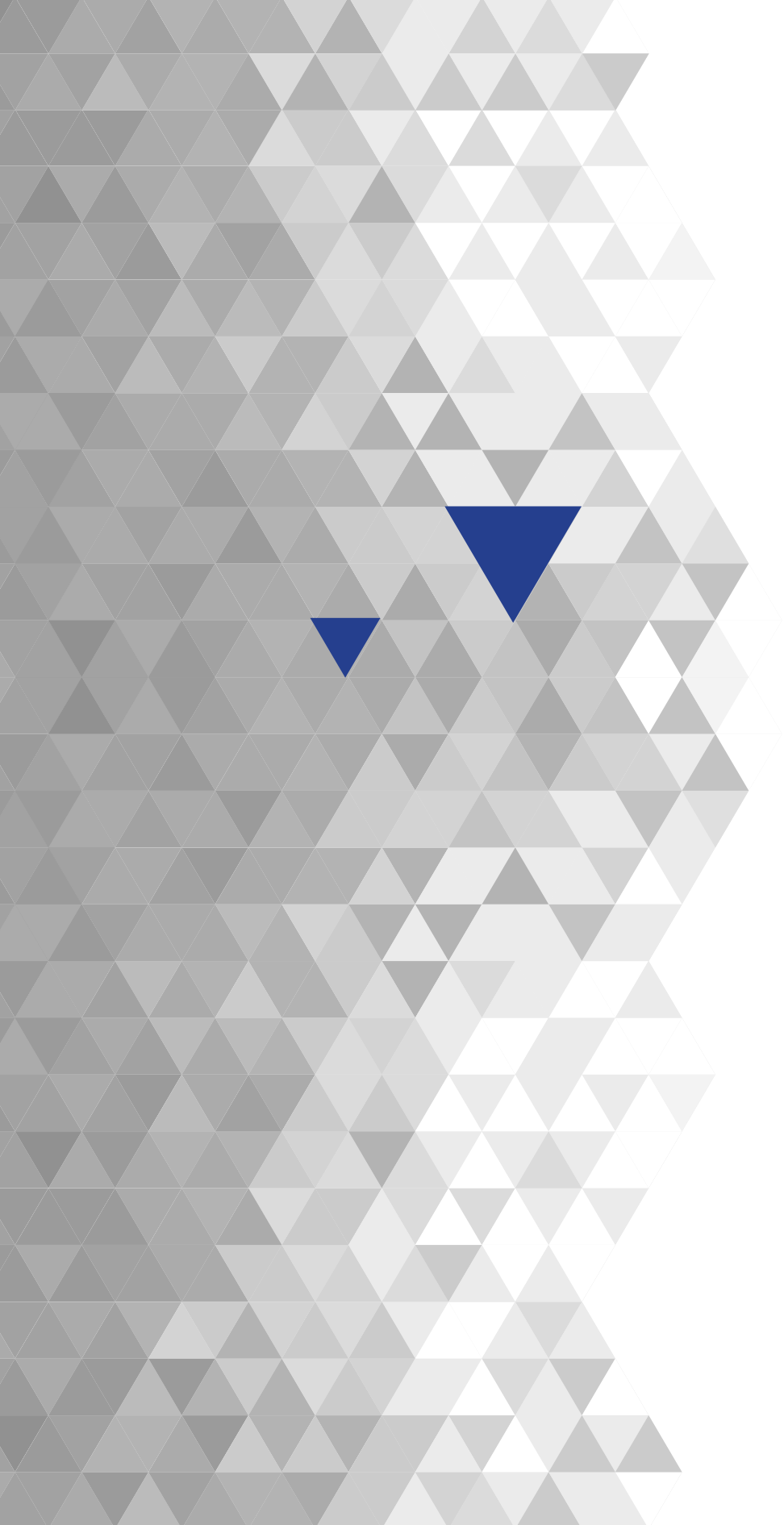


Termolab

HIGH TEMPERATURE TECHNOLOGY

More than
30 years
of experience
with furnaces
installed all over
the world


Termolab
HIGH TEMPERATURE TECHNOLOGY

High Temperature Furnaces

FROM PORTUGAL TO THE WORLD

EUROPE

BELGIUM
FINLAND
FRANCE
GERMANY
GREECE
ITALY
NETHERLANDS
NORWAY
POLAND
RUSSIA
SLOVENIA
SPAIN
SWEDEN
SWITZERLAND
TURQUEY
UNITED KINGDOM

AMERICA

ARGENTINA
BRASIL
U.S.A.

ÁFRICA

EGIPT
GABON
KENYA

ASIA

CHINA
INDIA
ISRAEL

AUSTRALIA

High Temperature

TECHNOLOGY

About Us

THE COMPANY TERMOLAB

TERMOLAB has been producing furnaces for the past four decades with customers spread across the five continents.

The company is specialized in manufacturing a wide range of customized solutions for various applications both in the industrial, laboratorial and R&D fields.

From 25°C to 2500°C, with metallic, SiC, MOSi2, graphite or molybdenum/tungsten heating elements and using the best available vacuum, power and temperature control technologies, a wide range of solutions can be found to suit your application.

Index

Chamber Furnaces
up to 1380°C

Maximum Operating Temperature: 1100° / 1200° / 1380°C

Temperature Control with Eurotherm Temperature Controllers

Insulation with Rigid Ceramic Fibre

Dimensions from 3 up to 1000 litres

Heating elements with Kanthal metallic alloys (Kanthal A1 or Kanthal APM)

Power Control through Solid State Relays or Thyristor Units (phase angle fired)

Options:

• Possibility of data acquisition through Eurotherm Software 'I-Tools;
• Over temperature protection;
• Possibility of multi-zone temperature control;
• Possibility of door opening system through horizontal axis;
• Gas control accessories;

Model	T. Máx. (°C)	Useful Dimensions (WxHxD) (mm)	Volume (I)	Power (kW)	Voltage (V)
MLM 12/6	1200	150x150x250	6	2,5	230
MLM 12/9	1200	200x150x300	9	3,5	230
MLM 12/12	1200	200x200x300	12	3,75	230
MLM 12/25	1200	250x250x400	25	8,5	400
MLM 12/47	1200	360x260x500	47	10	400
MLM 13/12	1350	200x200x300	12	4	230
MLM 13/25	1350	250x250x400	25	9,5	400
MLM 13/47	1350	360x260x500	47	10	400

Chamber Furnaces
from 1400° up to 1600°C

Maximum Operating Temperature: 1400° / 1500° / 1600°C

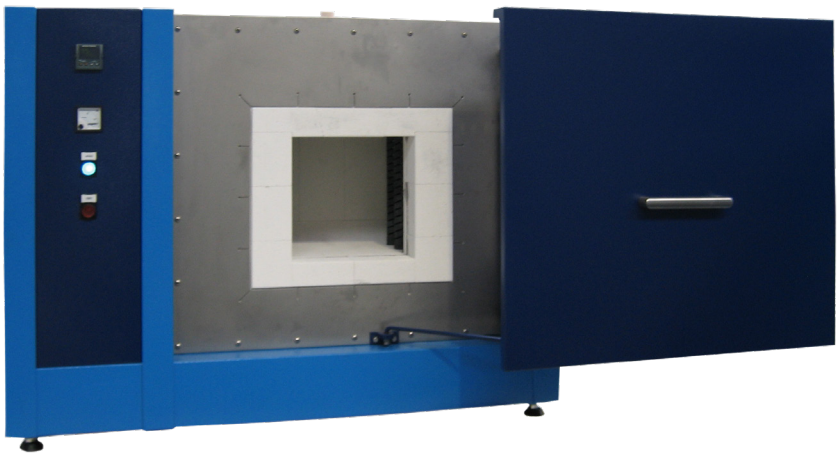
Temperature Control with Eurotherm Temperature Controllers

Insulation with Rigid Ceramic Fibre - Fast heat up and cool down rates

Dimensions from 3 up to 500 litres

Kanthal Silicon carbide heating elements

Power Control through Solid State Relays or Thyristor Units (phase angle fired)



Options:

- *Possibility of data acquisition through*
- *Eurotherm Software 'I-Tools;*
- *Over temperature protection;*
- *Possibility of multi-zone temperature control;*
- *Possibility of door opening system through horizontal axis;*
- *Gas control accessories;*

Model	T. Máx. (ºC)	Useful Dimensions (WxHxD) (mm)	Volume (I)	Power (kW)	Voltage (V)
MLR 16/5	1600	140x160x200	5	4	230
MLR 16/6	1600	140x160x250	6	5	230
MLR 16/12	1600	200x200x300	12	6	230
MLR 16/31	1600	260x300x400	31	12	400

Chamber Furnaces
from 1600° to 1800°C

Maximum Operating Temperature: 1600° / 1700° / 1800°C

Temperature Control with Eurotherm Temperature Controllers

Insulation with Rigid Ceramic Fibre - Fast heat up and cool down rates

Dimensions from 3 up to 1000 litres

Kanthal Super heating elements (MoSi2)

Power Control through Thyristor Units (phase angle fired)

Options:

- Possibility of data acquisition through Eurotherm Software 'I-Tools;
- Over temperature protection;
- Possibility of multi-zone temperature control;
- Possibility of door opening system through horizontal axis;
- Gas control accessories;

Model	T. Máx. (ºC)	Useful Dimensions (WxHxD) (mm)	Volume (I)	Power (kW)	Voltage (V)
MLM 16/5	1600	150x160x210	5	4,5	230
MLM 16/12	1600	200x200x300	12	9	400
MLM 16/16	1600	200x260x300	16	10	400
MLM 17/5	1700	150x160x210	5	4,5	230
MLM 17/12	1700	200x200x300	12	7,5	400
MLM 17/16	1700	200x260x300	16	10	400
MLM 17/3,5	1700	135x160x160	3,5	4,5	230
MLM 17/4,5	1700	135x160x210	4,5	5	230
MLM 18/5	1800	150x160x210	5	4,5	230
MLM 18/12	1800	200x200x300	12	8	400
MLM 18/16	1800	200x260x300	16	10	400

Bottom Loading Furnaces
from 1100° to 1800°C

The bottom loading furnaces had the advantages of easy loading/unloading and tight sealing;

The bottom hearth has pneumatic, hydraulic motorized smooth movement without shaking;

The heating elements are installed in all walls, resulting in excellent temperature uniformity;

Maximum Operating Temperature: 1100° / 1200° / 1300°/ 1500° / 1600° / 1700° / 1800° C

Insulation with Rigid Ceramic Fibre - Fast heat up and cool down rates

Temperature Control with Eurotherm Temperature Controllers

Power Control through Solid State Relays or Thyristor Units (phase angle fired)

Heating elements with Kanthal metallic alloys or Molybdenum disilicide Kanthal

Compact Elevator Furnaces
up to 1800°C

The main features of this furnace are:

• Lifting system with smooth movement and without any vibration;
• Possibility of integrating Kanthal Super heating elements in qualities 1700/1800/1900 for oxidizing atmospheres and HT, ER and RA qualities for reducing atmospheres and vacuum;

Kanthal Super HT quality ensures that the elements do not contaminate or stain the samples to be treated;

The following diagram indicates the maximum temperatures that the various types of heating elements allow to reach, depending on the type of atmosphere inside the chamber;

Maximum Operating Temperature: 1800°C

Thermal Insulation with rigid ceramic fibre

Heating elements: Kanthal Super (MoSi2)

Temperature Control with Eurotherm Temperature Controllers

Power: 2.5 kW

Power Control through Solid State Relays or Thyristor Units (phase angle fired)

Useful Dimensions: Ø 130 mm; Hot Zone Height: 150 mm

External Dimensions: 650x850x500 mm (WxHxD)

Top Hat Furnaces
from 1100° to 1800°C

The main features of this furnace are:

The top hat furnaces had the advantage of easy loading/unloading and tight sealing;

The chamber of the furnace has pneumatic, hydraulic our manual actuated movement to facilitate the loading. The bottom earth is fixed;

The heating elements are installed in all walls, resulting in excellent temperature uniformity;

Maximum Operating Temperature: 1100° / 1200° / 1300°/ 1500° / 1600° / 1700° / 1800° C

Thermal Insulation with rigid ceramic fibre - Fast heat up and cool down rates

Temperature Control with Eurotherm Temperature Controllers

Power Control through Solid State Relays or Thyristor Units (phase angle fired)

Heating elements with Kanthal metallic alloys or Molybdenum disilicide Kanthal

Tubular Furnaces
from 1200° to 1800°C

Options:

• Possibility of data acquisition through Eurotherm Software 'I-Tools;
• Over temperature protection;
• Possibility of multi-zone temperature control
• Possibility to work in horizontal or vertical position;
• Vacuum or/ and gas control accessories;
• Alumina recrystallized, mullite, or quartz tubes, with cooled flanges sealed by Viton O'rings, to work under vacuum or controlled atmosphere;
• Insulation plugs and radiation shields to avoid heat loss and increase uniformity of temperature;

Maximum Operating Temperature: 1200° / 1300°/ 1500° / 1600° / 1700° / 1800° C

Thermal Insulation with rigid ceramic fibre - Fast heat up and cool down rates

Temperature Control with Eurotherm Temperature Controllers

Power Control through Solid State Relays or Thyristor Units (phase angle fired)

Heating elements with Kanthal metallic alloys, Kanthal Silicon Carbide or Molybdenum Disilicide

Tubular Furnaces "Split"

from 1100° to 1700°C

Options:

- *Possibility of data acquisition through Eurotherm Software 'I-Tools;*
- *Over temperature protection;*
- *Possibility of multi-zone temperature control;*
- *Possibility to work in horizontal or vertical position;*
- *Vacuum or/ and gas control accessories;*
- *Alumina recrystallized, mullite, or quartz tubes, with cooled flanges sealed by Viton O'rings, to work under vacuum or controlled atmosphere;*
- *Insulation plugs and radiation shields to avoid heat loss amd increase uniformity of temperature;*

Maximum Operating Temperature: 1100° / 1200°/ 1300° / 1500° / 1600° / 1700° C

Temperature Control with Eurotherm Temperature Controllers

Heating elements with Kanthal metallic alloys or Molybdenum disilicide Kanthal

Thermal Insulation with rigid ceramic fibre - Fast heat up and cool down rates

Power Control through Solid State Relays or Thyristor Units (phase angle fired)

Split Furnaces are vertical or horizontal furnaces with the capability of opening the chamber in two halves. They can work as tubular furnaces or to be installed in tensile testing systems.

Rotary Tube Furnaces
from 1100° to 1800°C

The main features of this furnace are:

Rotary tube furnaces are used for continuous processing of powders under controlled atmospheres;
They can be supplied with an automatic feeding device;

- *Adjustable tube rotation;*
- *Adjustable tube tilting angle;*
- *Adjustable feeding rotation;*

Maximum Operating Temperature: 1100° / 1200° / 1300°/ 1500° / 1600° / 1700° / 1800° C

Thermal Insulation with rigid ceramic fibre

Temperature Control with Eurotherm Temperature Controllers

Power Control through Solid State Relays or Thyristor Units (phase angle fired)

Heating elements with Kanthal metallic alloys, Kanthal Silicon Carbide or Molybdenum Disilicide

Retort Furnaces
from 1000º to 1150ºC

The main features of this furnace are:

Furnaces with refractory steel chambers to work under vacuum or controlled atmosphere;

Maximum Operating Temperature: 1000º / 1150ºC

Insulation with Rigid Ceramic Fibre

Temperature Control with Eurotherm Temperature Controllers

Power Control through Solid State Relays or Thyristor Units (phase angle fired)

Heating elements with Kanthal metallic alloys (Kanthal A1 or APM)

Debinding Retort Furnaces
from 1100° to 1800°C

Furnaces with refractory steel chambers to work under vacuum or controlled atmosphere;

Additional features

- *Flow control with flowmeters or mass flow controllers;*
- *Primary vacuum (rotary pumps) or High vacuum (diffusion or turbo-molecular pumps);*
- *Burn-off system in the end of the gas line (for H2);*
- *Debinding system (condensation of the binders through traps and cold pots);*
- *Partial pressure control;*
- *Possibility to control the process via dedicated PC Panel with touch screen;*

Maximum Operating Temperature: 1500°C

Thermal Insulation with rigid ceramic fibre

Temperature Control with Eurotherm Temperature Controllers

Power Control through Solid State Relays or Thyristor Units (phase angle fired)

Heating elements with Kanthal metallic alloys, Kanthal Silicon Carbide or Molybdenum Disilicide

Graphite Furnaces
from 1100° to 1800°C

Main applications

- Sintering of AIN (aluminium nitride) tooling plates;
- Surface cleaning if SiC (silicon carbide) tooling plates;
- Annealing of sapphire parts;
- Sinter MIM parts of stainless steel and others metals;
- Heat treatment / annealing of metals;
- Carbonisation;
- Materials research, i.e. Boron carbide, carbon/carbon, SiC, etc;

The applications are almost infinitive as long as the work is compatible with a graphite hot zone; Flexible design can be customize for numerous applications.

Maximum Operating Temperature: 2500ºC - (vacuum, inert ou reduction atmospheres)

Graphite hot zone

Can be easily used for a variety of high temperature processes

Accurate user-friendly controls

Model	T. Máx. (ºC)	Zone Zone Diameter (mm)	Hot Zone Height (mm)	Power (kW)	Voltage (V)
G1	2000/2500	100	150	25	400
G2	2000/2500	150	200	40	400
G3	2000/2500	200	250	50	400
G4	2000/2500	200	300	50	400

Hot Press
up to 2500°C

This systems are designed for high temperature and high pressure consolidation of powder materials in oxidizing, high vacuum, inert or reducing atmosphere.

The system includes the following components:

- *Standard force up to 25 tons;*
- *Furnace;*
- *Press Frame;*
- *Heat Zone;*
- *Power Supply Unit;*
- *Hydraulic System;*
- *Vacuum or inert gas systems (optional);*

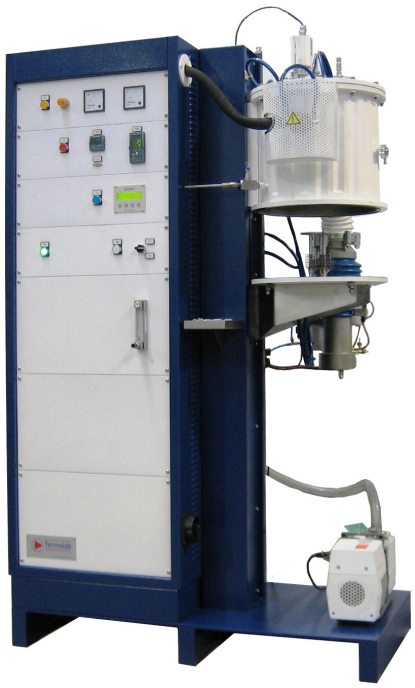
Main applications:

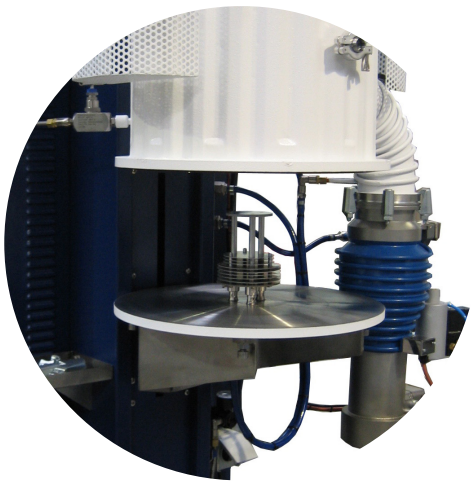
- *Ceramic Processing;*
- *Metal Processing;*
- *Powder Densification;*
- *Powder Metal Forming;*
- *Sintering;*
- *HMor Tests;*

This furnaces can reach temperatures up to 2500°C

Metallic Kanthal heating alloys, SiC or MoSi2, graphite and molybdenum/ tungsten heating elements

High Vacuum Furnaces
up to 2000ºC





This systems are designed for high temperature and high pressure consolidation of powder materials in oxidizing, high vacuum, inert or reducing atmosphere.

It's a cold wall furnace, with cylindrical water cooled vessel and windows for visualisation.

The hot zone (heating elements and shielding assembly) are produce in refractory metals (Tungsten and Milybdenum).

The introduction of the sample in the hot can be done by the top or by the bottom through a manually, pneumatic or motorized lifting device.

The vacuum is achieved by a rotary pump and a diffusion or turbo molecular pump.

The system includes the following components:

- *Furnace;*
- *Lifting System (manual or electrically operated);*
- *Control Unit;*
- *Gas Control Accessories;*
- *Vacuum system;*

Maximum operating temperature: 2.000 ºC

Secondary Vacuum up to 10-6 mbar

Atmospheres: Vacuum, Inert or Reducing

Other Products

xxxx°C

Other Products

xxxx°C

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