® THERMANSYS

# BOX TYPE FURNACES
1800 ˚C max.Temperature -MoSi₂ resistors
Model family: BOX-AM10-1800

Description.

BOX-AM10-1800 model being able to reach **1800 ˚C** and maintain temperature at **1750 ˚C continuously** represents an ultrahigh temperature chamber furnace.

Best quality and highest temperature ratings KANTHAL® Super 1900 MoSi₂ resistors used, known for their long working life under oxidizing atmosphere, are not affected by thermal shock and can withstand very high element power loads thereby provide a heating solution for extremely fast temperature ramping processes.

This furnace is constructed with multilayer fibrous, low mass density, and high thermal shock resistance thermal ceramic Al_2O_3 insulation. Having as major priority the economical operation the multilayered insulation boards are creating double wall between them serving both as a heat exchanger preheating the incoming air and as a heat barrier improving the overall thermal insulation.
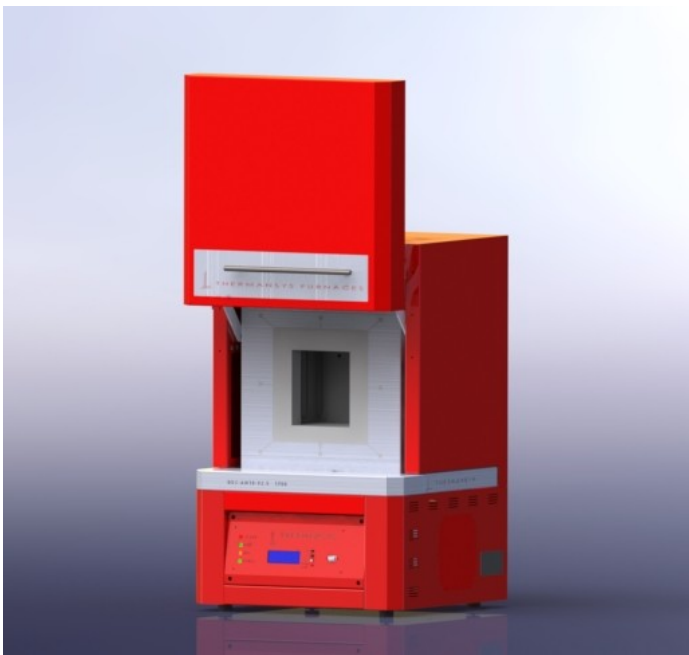
Ergonomic design with no protruding edges, bolts or other features combines stainless steel parts with painted finish parts for an improved aesthetic result.

Standard equipped with a Digital LCD display temperature controller providing 15 step programming with 1 program storage.

Optionally equipped with s remote, touch screen, computer running the specially designed PYROLOGISM 2.0 software, provide a really unique and friendly, windows oriented architecture interface with multiple, advanced features and peripherals.

Taking advantage of the optional addition of up to two flow control systems (Nitrogen and/or Air) the user can prepare flow mixtures with preset concentrations of Oxygen in Nitrogen or work under fully inert (Nitrogen) atmosphere.
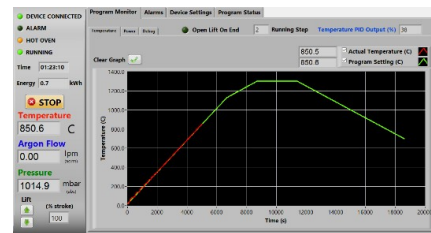
Key features.

- Control strategy based on Thermansys® PCC (Power Consistent Control) platform insures silent operation and compliance with EMC standards.
- Modern double wall construction keeps external surfaces temperature low.Internal skin is exclusively made from stainless steel to enhance durability.
- Heater failure, open control thermocouple detection, door open alarms and interlocks. Alarms and events front panel led array.

- Optional Touch Screen Computer running PYROLOGISM 2.0 software human-machine interface.
- Power and true RMS Current measuring circuits.
- Stand alone over-temperature limiter (Watchdog) with manual reset in accordance with EN 60519-2 to protect the oven and load. Overrides main controller and cut off heater power if user adjustable high limit is reached.
- Lift up door keep hot surfaces away from operator.

Contact details

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PYROLOGISM control and monitoring software.
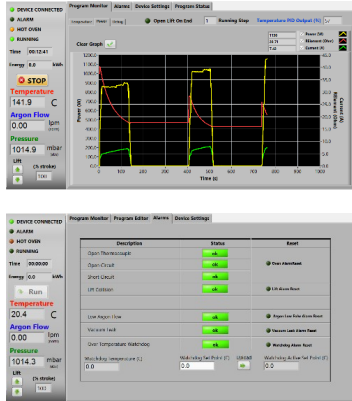
- Quick setting of a single ramp rate to a set point -run on timer function.
- Set-point programming with up to 15 ramp and constant temperature programming steps – graphical inspection of programming.
- Storage and reload of unlimited number of distinct programs.
- Graphical inspection of programming.
- Real time chart illustrating control temperature and running set point.
- Real time true-RMS Current (A), Voltage (V) and Power (W) measurements.
- Real time actual Power (W) and totalized Energy (kWh) chart.
- Saves all data on local memory.
- Tools for manual PID tuning and auto-tuning.
- Virtual keyboard, alarm and event message tab.
- Watchdog over temperature limiter monitor/configuration.

Specifications and Ordering Information.

Standard features:

- Maximum/continuous temperature 1800/1750 ˚C.
- Operating Power: 240 /400VAC – 50/60Hz.
- Digital LCD temperature controller with 15 step programming and I program storage.
- B type embedded thermocouples for main controller and (optionally) for over-temperature limiter feedback.
- Temperature control accuracy ±1 ˚C.
- Exposed resistors type. **Kanthal Super 1900** Molybdenum Disilicide-MoSi$_2$.
- Safety thermostat
- Thermocouple inputs: 3 chan. - B, K, R, S Software configurable (optional)

Optional features:

- Remote, touch screen computer running the specially designed PYROLOGISM 2.0 software on a 10.0in Tablet PC. **Add suffix _TSC.**
- Programmable stand-alone over-temperature limiter (Watchdog) with manual reset in accordance with EN 60519-2 to protect the heater and load, **Add suffix _WD.**
- UPS (Uninterrupted Power Supply). Keep system alive for short periods of power failure and restore program after power recovery **Add suffix _UPS**
- Flow controllers: Number of lines: 1 or 2
  Flow range: 0.01-20 std L/min - Accuracy: ±2% of reading for Air , ±3% of reading for N2 - Typical Control stability: ± 0.1 std L/min.
  Add suffix_Line 1, for gas type calibration: Air,
  Add suffix_Line 2, for gas type calibration: Nitrogen (N$_2$)

CE Certified. Compliant with **Low Voltage Directive 2006/95/EC** (harmonized referenced standard EN 61010-1: 2001 and EN 61010-2-010:2003) and **EMC Directive 2004/108/EC** (harmonized referenced standard EN 61326-1:2006)

TABLE1. BOX-AM10-1800 Family Models

Model Part Number BOX-AM10…	Heat up time* (min)	Furnace internal dim. WxHxD mm	Nominal Heated Volume (Liters)	Furnace external dim. WxH**xD mm	Max. Power (W) / Total No. Of resistors
_V3-1800	90	150x150x120	3	520x780x520	3000/ 2
_V4-1800	90	150x150x150	4	520x780x520	4800/4
_V6-1800	90	160x150x240	6	540x780x580	6200/6
_V8-1800	90	160x200x240	8	540x830x580	7200/6
_V16-1800	90	200x250x340	17	620x940x685	9600/6

*   *Furnace working with no load.*
** *Plus 100 mm for chimney*

IMPORTANT ORDERING NOTES:
- Models Part Number listed in Table 1 concern complete turn key systems without flow controllers included.
  Ordering Examples:
- BOX-AM10_V3-1800: This Part Number includes one BOX-AM10-1800 family furnace having 150x150x120 mm internal chamber dimensions including all standard features.
- To order the furnace with one flow controller add at the end of the part number the suffix "LINE X",
  e.g: BOX-AM10-V3-1800-**LINE1** for air calibration or BOX-AM10-V3-1800_**LINE2** for Nitrogen calibration
- BOX-AM10_V3-1800-**TSC-WD**. This Part Number includes one BOX-AM10-1800 family furnace having 150x150x120 internal chamber dimensions including all standard features plus a Tablet PC running the PYROLOGISM 2.0 software and a programmable over-temperature limiter.

HELLENIC PRODUCT.

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