

BOX TYPE FURNACES

1600 °C max. Temperature – MoSi₂ resistors – Zirconia Sintering

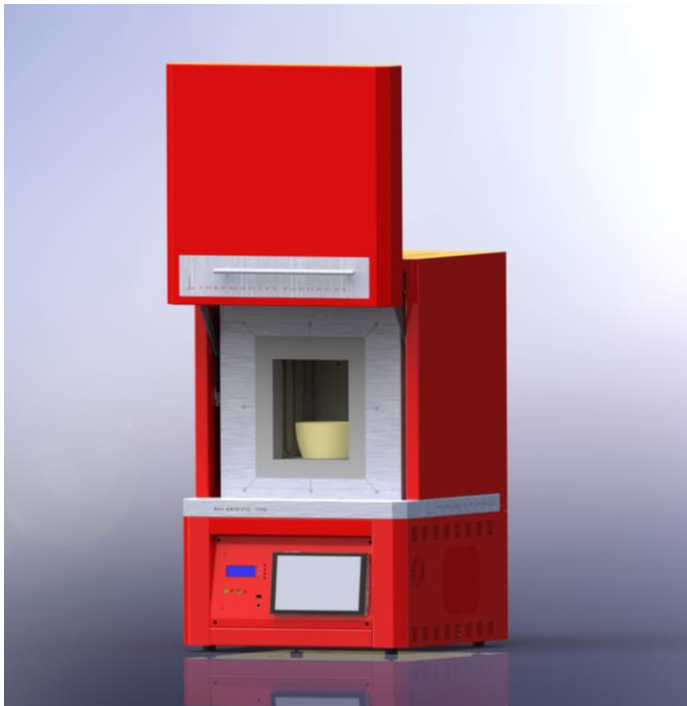
Model family: **BOX-AM10-1600**

Description.

BOX-AM10-1600 model is a powerful chamber furnace family concentrating numerous of advantages and providing a single piece solution for the research and small production laboratory.

Best quality KANTHAL Super 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. Can be used continuously or intermittently with no restriction.

Having as major priority the economical operation this furnace was designed with double wall low mass density thermal ceramic insulation serving both as a heat exchanger preheating the incoming air and as a heat barrier improving the overall thermal insulation. With adjustable air opening in the back side and an exhaust chimney at the top, creating a strong natural convection, the entire volume of the chamber can be refreshed several times per minute. The preheated incoming air is entering and exiting the chamber through multiple holes creating a smooth and temperature uniform laminar air stream through the sample.



Ergonomic design with no protruding edges, bolts or other features combines stainless steel parts with painted finish parts for an improved esthetic result.

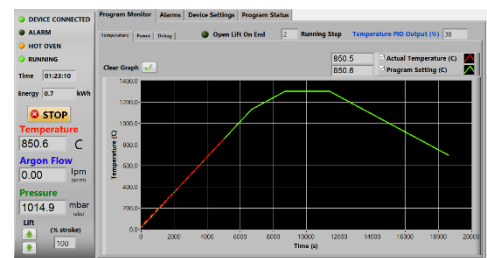
Key features.

- 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.
- Lift up door keep hot surfaces away from operator.
- Heater failure, open control thermocouple detection, door open alarms and interlocks. Alarms and events front panel led array.
- Touch Screen Computer running PYROLOGISM 2.0 software human-machine interface.
- 3 user process thermocouple inputs available (B, E, J, K, N, R, S, T type- software configurable).
- 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.

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



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

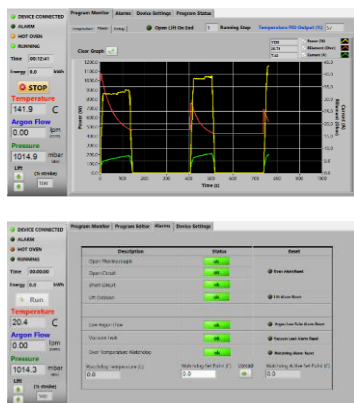


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PYROLOGISM control and monitoring software.



- 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 1600 °C.
- Operating Power: 208 /240VAC – 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 1800** Molybdenum Disilicide-MoSi₂.
- Safety thermostat
- Thermocouple inputs: 3 chan. - B, K, R, S, T Software configurable.
24 bit A/D conversion, 0-45°C cold junction compensated

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: $\pm 2\%$ of reading for Air , $\pm 3\%$ 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 (N₂)

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).
Produced in GREECE following ISO 9001:2008 quality management system and ISO 14001:2004 environmental management system.

TABLE1. BOX-AM10-1600 Family Models

Model Part Number	Max. Cont. Temp. °C x Heat up time* min	Furnace internal dim. WxHxD mm	Heated Volume liters	Furnace external dim. WxH**xD mm	Nominal Max. Power (W)
BOX-AM10... _V1.6-1600	1600 x 55	120x140x100	1.6	480x750x460	2000
_V2.5-1600	1600 x 55	140x160x120	2.5	500x770x520	2600
_V4.5-1600	1600 x 55	140x160x200	4.5	500x770x520	4200
_V7.0-1600	1600 x 55	140x160x320	7.0	500x770x640	6400
_V10-1600	1600 x 55	160x200x320	10.0	520x810x640	7600

* 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 including all standard features..

Ordering Examples:

- BOX-AM10_V2.5-1600: This Part Number includes one BOX-AM10-1600 family furnace having 140x160x120 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_V2.5-1600-LINE1 for air calibration or BOX-AM10_V2.5-1600_LINE2 for Nitrogen calibration

- BOX-AM10_V2.5-1600-TSC-WD. This Part Number includes one BOX-AM10-1600 family furnace having 140x160x120 internal chamber dimensions including all standard features plus a Tablet PC running the PYROLOGISM 2.0 software and a programmable over-temperature limiter.

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