

BOX TYPE FURNACES

1100 °C Max. Temp. – Gen. Purpose – Mono-block fibrous lightweight insulation

Model family: **BOX-AW10-1100**

Description.

BOX-AW10-1100 model family designed to offer an all round general purpose muffle for the laboratory. Constructed with seamless mono-block, fibrous insulation provides the highest degree of thermal insulation which in combination with the extremely low mass density leads to important energy savings.

Heated from three sides of the chamber with a dense structure of semi-exposed wire wound resistors performs excellently in terms of temperature uniformity.

With adjustable air opening in the back side and exhaust opening at the top this furnace is suitable for many laboratory applications including ashing and combustion of the material. The incoming air is preheated entering the chamber through multiple tubing running through the top side insulation leading to a smooth and temperature uniform air stream through the sample.



Model shown is **BOX-AW10_V26-1100**.

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

Equipped with a touch screen computer, running the specially developed **PYROLOGISM 2.0** software, these furnaces present a truly unique and friendly, windows architecture, operator environment with advanced features.



Key features.

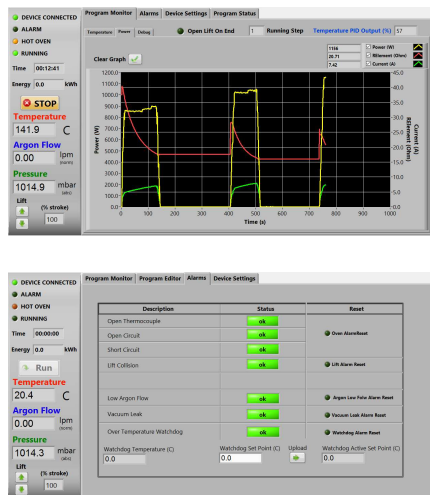
- Best available quality KANTHAL[®] FeCrAl wire wound resistors insure furnace long life operation.
- Control strategy based on Thermansys[®] PCC (Power Consistent Control) platform insures silent operation and compliance with EMC (Electro-Magnetic Compatibility) standards.
- PID control. Accurate and uniform temperature profiles.
- Economical performance under daily thermal cycling.
- Accurate and uniform temperature profiles.
- Modern double wall construction keeps external surfaces temperature low, emphasizing in operator safety. Internal skin is exclusively made from stainless steel to enhance durability.
- Ergonomic design with no protruding edges, bolts or other features combines stainless steel parts with painted finish parts for an improved esthetic result.
- 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.
- Heater failure, open control thermocouple detection alarms and interlocks. Alarms and events front panel led array.
- Alarm event output (dry contact 3A/250V AC/DC).
- USB client B type and RJ45 port for connection to PC.
- 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.
- Real time chart illustrating control temperature, running set point and user process temperatures with dynamic zoom.
- 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.
- Gas flow, monitoring and control interface pages activated if corresponding optional modules are enabled.
- Versions running at Microsoft® Windows are available for control by a PC through USB port.
- Remotely monitoring and control through network connection.

Specifications and Ordering Information.

Standard features:

- Maximum continuous temperature 1100 °C.
- Operating Power: 208 /240VAC – 50/60Hz.
- Two in depended K type embedded thermocouples for controller and over-temperature limiter feedback.
- Temperature control accuracy ± 1 °C.
- Semi-exposed resistors type.
- Thermocouple inputs:
3 chan. - B, E, J, K, N, R, S, T type- software configurable.
24 bit A/D conversion, 0-45°C cold junction compensated
Typical accuracy $\pm 0.2\%$ f.s @ 25 , resolution 0.1 °C

Optional features:

- Flow controllers:
Number of lines: 1 or 2
Line 1 gas type calibration: Air
Line 2 gas type calibration: Nitrogen (N₂)
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.
Temperature (0-50°C), Pressure (0-15 psig) comp.
Filtration: Not provided, user supplied HEPA grade

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-AW10-1100 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. WxHxD mm	Nominal Max. Power (W)
BOX-AW10... _V8-1100	1100 x 50	210x160x250	8.4	480x630x580	2600
_V14-1100	1100 x 50	250x180x310	14.0	520x650x620	3200
_V20-1100	1100 x 50	220x200x410	19.8	480x670x720	4000
_V26-1100	1100 x 50	250x250x415	25.9	520x720x720	5000

* Furnace working with no load.

IMPORTANT ORDERING NOTES:

- Models Part Number listed in Table 1 concern complete turn key systems without flow controllers included.

Ordering Examples:

- BOX-AW10_V26-1100: This Part Number includes one BOX-AW10-1150 family furnace having 250x250x415mm 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 1”,
e.g: BOX-AW10_V26-1100_LINE1.
- To order the furnace with two flow controllers add at the end of the part number the suffix “LINE 1/2”,
e.g: BOX-AW10_V26-1100_LINE1/2.

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