

## BOX TYPE FURNACES

### 1600 °C max. Temperature - Large Volume - MoSi<sub>2</sub> resistors

Model family: **BOX-AM20-1600**

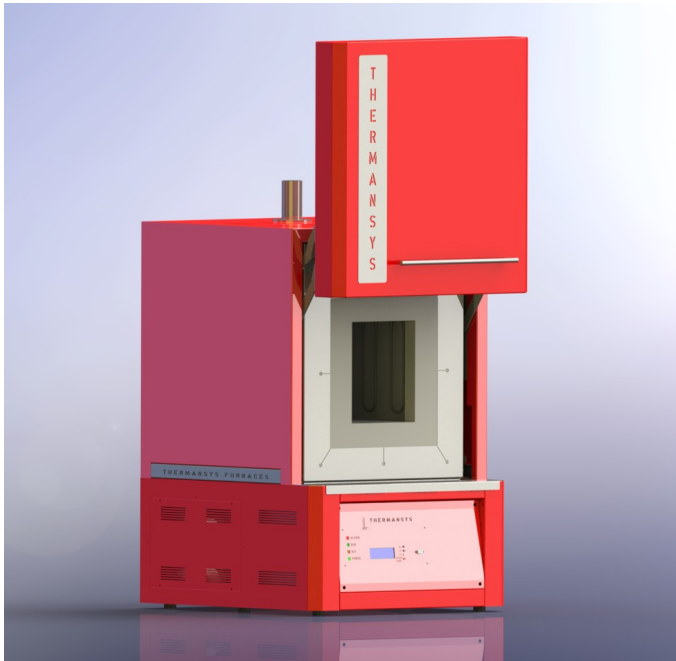
### Description.

**BOX-AM20-1600** model is a powerful large volume chamber furnace family concentrating numerous of advantages and providing a single piece solution for the research and small production laboratory.

Taking advantage of the THERMANSYS® PCC (Power Consistent Control) close loop power control management platform and based on accurate true rms Volt/Ampere measurements, these furnaces have optimum performance in terms of Power Factor and EMC standards compliance. Focusing our control management on the specific resistor properties the workable life of the heater is significantly extended and the temperature control is remarkably accurate both under fast ramping and stable point.

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 aesthetic result.**

**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.**



### Key features.

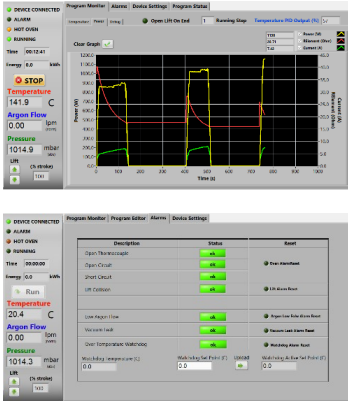
- Control strategy based on Thermansys® PCC (Power Consistent Control) platform insures silent operation and compliance with EMC standards.
- Power and true RMS Current measuring circuits.
- Heater failure, open thermocouple detection, door open alarms and interlocks.
- Lift up door keep hot surfaces away from operator
- Optional Touch Screen Computer running PYROLOGISM 2.0 software human-machine interface.
- Kanthal Super MoSi<sub>2</sub> Heating Elements.
- Modern double wall construction keeps external surfaces temperature low.
- Internal skin is exclusively made from stainless steel to enhance durability.

#### 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 1600 °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  $\pm 1$  °C.
- Exposed resistors type. **Kanthal Super 1700** Molybdenum Disilicide-MoS<sub>2</sub>.
- Safety thermostat
- Thermocouple inputs: 3 chan. - B, K, R, S, T 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:  $\pm 2\%$  of reading for Air ,  $\pm 3\%$  of reading for N<sub>2</sub> - Typical Control stability:  $\pm 0.1$  std L/min.  
**Add suffix \_Line 1**, for gas type calibration: Air,  
**Add suffix \_Line 2**, for gas type calibration: Nitrogen (N<sub>2</sub>)

**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-AM20-1600 Family Models**

Model Part Number <b>BOX-AM20...</b>	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)
<b>_V18-1600</b>	1600 x 50	200x260x340	17.7	640x940x700	8000
<b>_V28-1600</b>	1600 x 50	260x260x420	28.4	700x940x780	10000
<b>_V38-1600</b>	1600 x 50	300x300x420	37.8	740x980x780	12000

\* 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-AM20\_V18-1600: This Part Number includes one BOX-AM20-1600 family furnace having 200x260x340 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-AM20\_V18-1600-**LINE1** for air calibration or BOX-AM20\_V18-1600-**LINE2** for Nitrogen calibration

- BOX-AM20\_V18-1600-**TSC-WD**. This Part Number includes one BOX-AM20-1600 family furnace having 200x260x340 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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