

Hot Spot 110

Plug and Play 1700 °C Lab Furnace

110V to 1700 °C in a
Benchtop Design

Two Models:

- **Hot Spot 110 - 1700 °C**
- **Hot Spot 110L - 1600 °C**

HotSpot 110 Features

- Paladium Calibrated
- Programmable Temperature Controller Holds 2 Programs of up to 8 Steps Each
- Space Saving Compact Design
- Separate Over-Temp Protection
- Low Energy Consumption
- 1800 °C Grade MoSi₂ Heating Elements
- Pre-Fired and Pre-Programmed
- Optional Datalogger Available
- Unique Combination of Zircar Insulations
- Fan Cooled Shell & Door Safety Interlock

The Zircar Fibrous Ceramics Advantage

Low Mass,
Low Heat Storage &
Low Thermoconductivity
means
High Thermal Shock Resistance,
High Insulation Performance,
Higher System Efficiency &
Lower Energy Costs



Space Saving... Low Energy Consumption... Rapid Cycle...

The Hot Spot 110 is offered in two models and can rapidly achieve temperatures to 1700 °C.

Product Information

Zircar Lab Furnace Type Hot Spot 110 can simply be plugged into a standard 110 Volt, 20 Amp outlet without the need for either a 220 V supply or an electrician. This breakthrough frontloading box furnace is made possible by a unique combination of layered Buster alumina insulation, which exploits the hot strength and low thermal conductivity of alumina. It is a four layer, graded design that ensures the proper heat flow through each layer for maximum life.

The **Zircar** Hot Spot 110 is designed, manufactured and assembled at our plant in Florida, NY, USA.

With a 2.3 ft² footprint, this compact unit easily fits just about anywhere in the laboratory and does not require any special setting surface. The standard cooling fan feature keeps the furnace shell cool enough to protect the user from any potential burn, and the attached electronics cabinet cool even at 1700 °C.

Hot Spot 110 our highest temperature lab furnace has a working volume of 49 cubic inches and can be operated continuously at 1700 °C.

Hot Spot 110L features a larger 81 cubic inch chamber and can be operated continuously at 1600 °C.

For more information,
phone: (845) 651-3040
email: sales@zircarzirconia.com
website: www.zircarzirconia.com

Product Features

The outer shell of the Hot Spot 110 is powder coated heavy gauge steel while the inner shell and face plate are stainless steel.

The furnace is heated by four 1800 °Celsius grade molybdenum disilicide heating elements, which are connected to the power supply by oversized aluminum braids to assure reliable service. The furnace comes standard with a dual element type B platinum thermocouple. One thermocouple element is connected to the programmable temperature controller, while the other goes to the over-temp controller. The furnace is available with an optional extra thermocouple for direct connection to a remote chart recorder.

The door hinges upward on an articulating mechanism that assures correct door seal alignment minimizing heat loss around the door seal and saving table space. An automatic latch holds the door open while loading and unloading. A door safety interlock switch disengages power to the elements when the door is open to prevent accidental contact with live elements. The door remains cool because it is constructed without dense ceramic reinforcements, which would draw heat from the hot face out to the shell. Our door insulation design isolates the hot face insulation from the cold face insulation.

The furnace is available with an optional datalogger to link the furnace to your computer and record the temperature history in real time and later save the firing curve as an Excel file. Seven different optional analog output signals are available from the temperature controller. The output, which varies as the process temperature changes, is supplied to a jack located at the rear of the furnace. A six foot long cord that plugs into the jack is supplied to conduct this output to an independent chart recorder, remote display or other instrument of your choice. Be certain to select the correct analog output as required by your device.

Furnaces include a complimentary box of Process Temperature Control Rings (PTCR). A PTCR is a highly accurate ceramic temperature indicator which records the true heat treatment received by the fired product. They can be used as either a furnace calibration check or as a record of an individual firing.



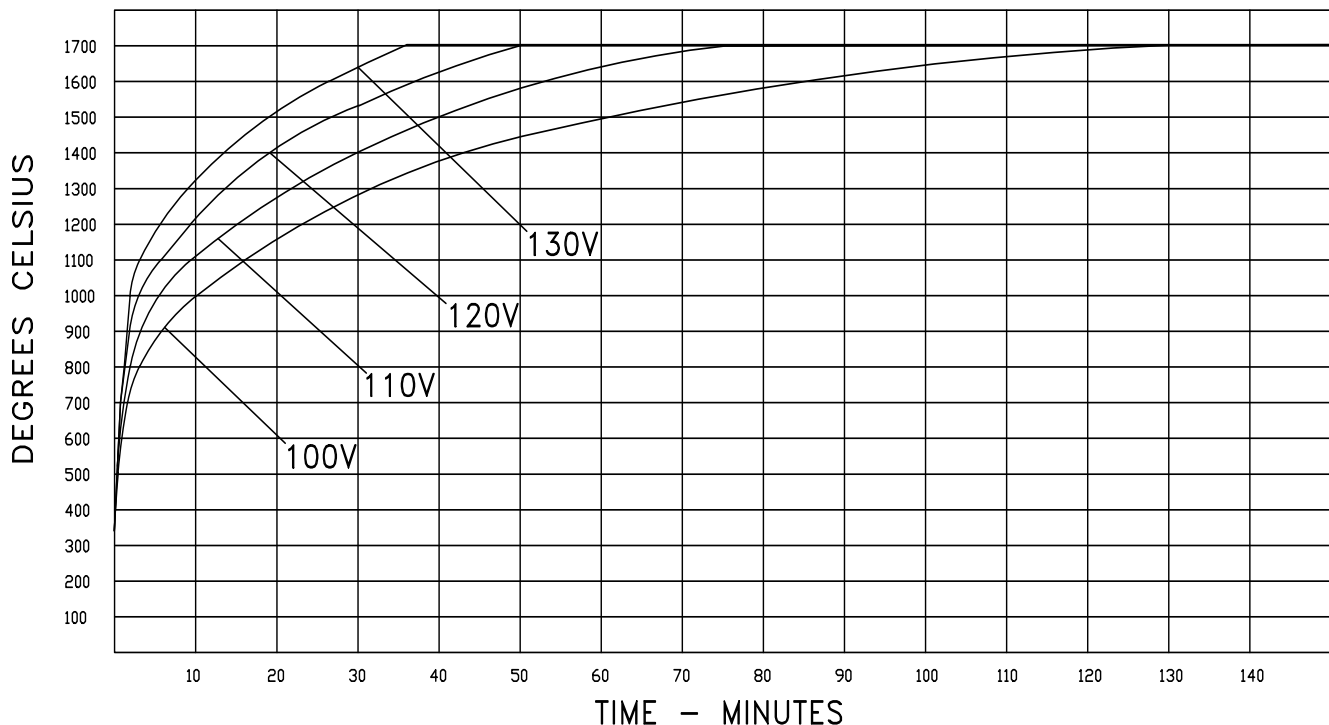
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Specifications

	Hot Spot 110	Hot Spot 110L
Maximum Continuous Use Temperature	1700 °C	1600 °C
Chamber Size	5" wide x 4" high x 5" deep	6" wide X 4" high X 5" deep
Working Size (Ware Space)	3.5" wide x 4" high x 3.5" deep	4.5" wide X 4" high X 4.5" deep
Overall Size (Door Closed)	20" wide x 16.5" deep x 16" high	20" wide X 16.5" deep X 16" high
Overall Size (Door Open)	20" wide x 19" deep x 27" high	20" wide X 19" deep X 27" high
Weight (Standard Model)	108 pounds	108 pounds
Thermocouple	Dual Element Type B (Pt 6% Rh vs. Pt 30% Rh)	Dual Element Type B (Pt 6% Rh vs. Pt 30% Rh)
Heating Elements	1800 °C Grade MoSi ₂	1800 °C Grade MoSi ₂
Power Supply Requirement for 110 Volt Model	110V, 20A, 60Hz standard US duplex outlet	110V, 20A, 60Hz standard US duplex outlet
Element Current at Max Temp Soak	~40 Amps AC at 5.5Volts	~45Amps AC at 5.5Volts
Transient Peak Current Surge on Start Up	~40 Amps AC at 110 Volts	~40 Amps AC at 110 Volts
Power Line Consumption at Max Temp Soak	~935 Watts	~1320 Watts

HOT SPOT 110 FULL POWER HEAT UP RATE AT DIFFERENT INPUT VOLTAGES



If the ramp rate needed cannot be achieved with the local line voltage, an Autotransformer (FAF08) can be used to boost the voltage from the line to the furnace.



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Ordering Information

The Hot Spot 110 is available in the standard models shown below. Please contact our Sales Department for pricing and availability.

To Place an Order

Call: 845-651-3040

email: sales@zircarzirconia.com

The order item code for the Hot Spot 110 is five characters starting with the two letters FA. The last three characters are selected per the table below. The standard 110 Volt furnace is item code FAA00 and comes with the standard dual element thermocouple and without any analog output.

First Two Characters	Third Character Input Voltage	Fourth Character Extra Thermocouple	Fifth Character Analog Output from Controller
FA	A - 110 V	0 - No	0 - None/Standard Model
		1 - Yes	1 - Voltage 0 to 10 mV DC
			2 - Voltage 0 to 100 mV DC
			3 - Voltage 0 to 1V DC
			4 - Voltage 0 to 5V DC
			5 - Voltage 0 to 10V DC
			6 - Voltage 1 to 5V DC
			7 - Current 0 to 20 mA DC
			8 - Current 4 to 20 mA DC

Warranty Information

The Hot Spot 110 furnace has a two year limited parts warranty. If a part fails, due to poor quality, we send you a new replacement at no charge and you install it. The warranty does not cover fuses and heating elements. The temperature controllers have a three year warranty. **Zircar** continues to support our furnaces long after the warranty has expired with products and services such as technical support for thermocouple repair and replacement.



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