



Specifications for Laboratory Closure Drying Oven.

Description of the Oven

The automatic vacuum drying oven consists of a round chamber with doors on either end that house three usable stainless steel shelves and one non-usable stainless steel radiation shelf. The shelves are supported by a stainless steel plate which serves to direct the air flow over each of the shelves. The exposed edges of the shelves are rounded to provide easy cleaning. Stainless steel radiation baffles in the back and on the front door of the oven serve also to direct the flow of air across the shelves. The stainless steel used in this portion of the oven is 316L and has a finish of brush finish. On a panel just below the lowest shelf are located ten (10) female connections for RTD sensors to be used to measure temperatures during validation of the oven and the drying process.

The temperature of the oven is controlled by the temperature of the gas coming from a heat transfer system. The main component of the heat transfer system consists of a manifold. The manifold contains a stainless steel fan and a stainless steel finned heater housed in a stainless steel frame. Gas from the manifold can flow to the inlet stainless steel piping which connects to the oven chamber or to a vacuum pump. The direction of the gas flow is directed by two pneumatic stainless steel valves. Gas to the heat transfer manifold stems from a second stainless steel outlet piping which also contains a stainless steel pneumatic valve. All piping in this segment of the oven is fabricated from 304 stainless steel.

The oven is evacuated to a given pressure by means of a vacuum pump and the pressure is controlled by a vacuum gauge. The chamber is pressurized to a given pressure by a system that consists of a desiccator and filter system. Evacuation or pressurization of the chamber is controlled by the opening and closing of the appropriate stainless steel pneumatic valves.

The entire drying chamber, manifold system and pressure control system will be housed in an outer 304 stainless steel container that contains rounded edges flat surfaces. Air inlet vents are located on either side of the oven and the chamber allow circulation of ambient air through the oven to cool heat sensitive components.

The computer control and data collection system is located on the left hand side of the door. Real time data is displayed as a graph on a chart recorder while a complete data set is collected on the USB device in a pdf format.

Technical Specifications

Oven Capacity	Three bags of 20 mm closures or trays	
Operating Parameters	Sensor	Range
Oven Air Temperature	RTD	30 °C to 120 °C +/- 2 °C
Oven Pressure	G-P gauge	760 Torr to 500 mTorr
Humidity/Temp.	SHT7	0 %-100 % +/- 2 % @ 25 °C -40 °C to 80 °C +/- 0.5 °C
Time and date	OCS Controller	

Recorded Data

"X" SERIES OCS CONTROLLER	Color monitor with touch screen
	Fan performance
	Heater output
	Upper and lower temperature set points
	Upper and lower pressure set points

Graphic recorder	Alarms Input batch data Data in graphic and tabular form Real time data display
Data Export	USB thumb drive
Total Weight	450 kg
Dimensions:	825 x 900 x 2032 (mm) (width, length, height)
Air Changes in Oven	20 air changes per hours.
Operating Environment:	Ambient Temperature - 0 °C to 50 °C Storage Temperature -40 °C to 71 °C Humidity <75% @ <40 C
Power:	240 VAC (50Hz) 2500 watts
Air Supply	90 psi
Warranty:	One year (extended warranty available)
<u>Suggested Spare Parts</u>	Desiccator Unit Finned Heater Recorder Paper Pneumatic Valve