

Model 123C Temperature Chamber Specifications

Temperature Range

-68°C to +175°C

Control Tolerance

±0.5°C Short-term variations measured at the control sensor after stabilization)

Uniformity

±1°C (Variations throughout the chamber after stabilization)

Cool Down Transition Time

Start Temp	End Temp					
	+23°C	0°C	-40°C	-55°C	-65°C	-68°C
+23°C	-----	6 min	27 min	41 min	55 min	Ultimate
+85°C	18 min	28 min	54 min	70 min	85 min	Ultimate

Heat Up Transition Time

Start Temp	End Temp					
	+23°C	+50°C	+85°C	+125°C	+150°C	+175°C
+23°C	-----	2 min	12 min	24 min	33 min	Ultimate
0°C	3 min	9 min	18 min	32 min	41 min	Ultimate
-40°C	9 min	16 min	25 min	39 min	48 min	Ultimate
-55°C	14 min	18 min	31 min	44 min	53 min	Ultimate
-65°C	15 min	21 min	32 min	45 min	54 min	Ultimate

Rate Of Change

To calculate rate of change for a particular condition, take the difference between the Start Temp and End Temp and divide by the Transition Time.

Cool Down Example: From +85°C to -40°C = 125°C / 54 min = 2.3°C/min.

Heat Up Example: From -40°C to +85°C = 125°C / 25 min = 5.0°C/min.


***Note:** Transition times are measured after a 2 hour soak at the respective start temperature with an empty chamber, as indicated on the temperature controller, 23°C ambient. Measured with setpoint beyond the start and end temperatures. Does not include the effect of proportional band when approaching setpoint. Performance is reduced on 123C-EX 50 Hz export versions by 17%.

Live Load Capacity


+23°C	0°C	-40°C	-55°C	-65°C
500 Watts	400 Watts	225 Watts	175 Watts	100 Watts

Refrigeration and Heating System

High Stage Refrigerant	R-404A (Dupont HP-62)
Low Stage Refrigerant	R-508B (Dupont SUVA-95)
Compressors	1/2 HP x 1/3 HP Tecumseh hermetic compressors in a cascade configuration.
Condenser	Air Cooled
Heat of Rejection	5,000 BTUH (maximum rated chamber load at maximum cooling rate from high temperature soak)
Air Heater Power	1,000 Watts (500 Watts when compressors are running)
Instrumentation	

Temperature Controller	Watlow F4T Touch Screen Controller with RS-232, Ethernet interface, 4.3" color graphic touch screen. OR... Watlow F4 Controller with RS-232 interface, LED readout of temperature, LCD display of other parameters.	
Limit Controller	Independent high and low temperature limits. Triggers an audible alarm and shuts down the chamber. Relay contacts provide a safety power interlock for test sample.	
Chart Recorder	(Optional) Honeywell DR4300 Series. One pen, 10" circular chart. Mounts in lower front door. 24-hour rotation.	

Input Power Requirements

Input Voltage	123C North America Version: 120 V nominal (110 to 126 VAC), 60 Hz, 1 PH Max Current Draw 18 A, Recommended Minimum Service 20 A 123C-EX Export Version: 230V nominal (220 to 240 VAC), 50 Hz, 1 PH Max. Current Draw 9 A, Recommended Minimum Service 13 A Performance is reduced by 17% with 50 Hz input power.	
Power Cord and Plug	6' Power cord supplied with a molded NEMA 5-20P plug. Plugs into a standard NEMA 5-20R receptacle. Use of an extension cord is not recommended. Model 123C-EX export version is supplied with power cord for the destination country.	

Physical Characteristics

Inside Dimensions	18" W x 16.5" H x 13.5" D (2.3 cubic feet)
Outside Dimensions	26" W x 63" H x 36.5" D (nominal)
Minimum Installed Clearance	6" from the left and right side 12" from the rear
Window Viewing Area	7" W x 12" H
Access Ports	4" Port on left and right side (two total) Supplied with foam plugs
Weight	Chamber Weight: 520 pounds Shipping Weight: 600 pounds (North America only, contact us for export shipment)
Sound Level	62 dBA (A-weighted, measured 36" from the front)

NOTE: Performance is typical and based on operation at 23°C (73°F) ambient and nominal input voltage. Designed for use in a normal conditioned laboratory. Operation at higher ambient temperatures may result in decreased cooling performance. Additional ports and shelves will also affect performance. Operation above 30°C (85°F) or below 16°C (60°F) ambient is not recommended.