

## Model 1027C Temperature Chamber Specifications

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<b>Temperature Range</b>	-73°C to +175°C
<b>Control Tolerance</b>	±0.2°C (Short-term variations measured at the control sensor after stabilization)
<b>Uniformity</b>	±1.0°C (Variations throughout the chamber after stabilization)

### Cool Down Transition Time (empty)\*

Start Temp	End Temp					
	+23°C	0°C	-20°C	-40°C	-55°C	-65°C
+23°C	----	1.5 min	7.5 min	11 min	14 min	18 min
+85°C	9 min	15 min	21 min	28 min	35 min	40 min
+150°C	23 min	30 min	37 min	45 min	53 min	60 min

### Cool Down Transition Time (with 80 lb. aluminum load)\*

Start Temp	End Temp					
	+23°C	0°C	-20°C	-40°C	-55°C	-65°C
+85°C	15 min	26 min	35 min	48 min	59 min	68 min
+150°C	32 min	41 min	50 min	61 min	69 min	76 min

### Heat Up Transition Time (empty)\*

Start Temp	End Temp					
	+23°C	+50°C	+85°C	+125°C	+150°C	+175°C
+23°C	----	1.5 min	7 min	14 min	20 min	25 min
0°C	1.5 min	3.5 min	13 min	20 min	23 min	31 min
-40°C	6 min	11 min	17 min	24 min	30 min	35 min
-55°C	8 min	13 min	19 min	26 min	32 min	37 min
-65°C	10 min	14 min	21 min	28 min	34 min	39 min

### Heat Up Transition Time (with 80 lb. aluminum load)\*

Start Temp	End Temp					
	+23°C	+50°C	+85°C	+125°C	+150°C	+175°C
0°C	5 min	13 min	23 min	36 min	45 min	55 min
-40°C	11 min	19 min	29 min	42 min	51 min	61 min
-65°C	22 min	32 min	44 min	61 min	71 min	81 min

### 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 (empty):** From +85°C to -40°C = 125°C / 28 min = 4.5 °C/min.

**Cool Down Example (with 80 lb. load):** From +85°C to -40°C = 125°C / 48 min = 2.6°C/min.

**Heat Up Example (empty):** From -40°C to +85°C = 125°C / 17 min = 7.35°C/min.

**Heat Up Example (with 80 lb. load):** From -40°C to +85°C = 125°C / 29 min = 4.3°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 by 17% with 50 Hz input power.

### Live Load Capacity


+23°C	0°C	-20°C	-40°C	-55°C	-65°C
2,900 Watts	2,600 Watts	2,300 Watts	1,750 Watts	1,450 Watts	1,050 Watts

### Refrigeration and Heating System

<b>High Stage Refrigerant</b>	R-404A (Dupont HP-62)
<b>Low Stage Refrigerant</b>	R-508B (Dupont SUVA-95)
<b>Compressors</b>	3.5 HP x 3.5 HP Copeland scroll compressors in a cascade configuration <a href="#">More about Scroll Compressors &gt;&gt;</a>
<b>Condenser</b>	Air Cooled
<b>Heat of Rejection</b>	27,500 BTUH (maximum rated chamber load at maximum cooling rate from high temperature soak)
<b>Heater Power</b>	4,000 Watts @ 208 V input
<b>Air Flow</b>	630 cfm

### Instrumentation

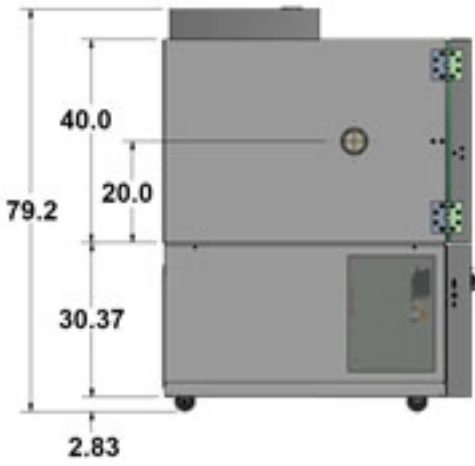
<b>Temperature Controller</b>	<b>Watlow F4T Touch Screen Controller</b> with RS-232, Ethernet interface, 4.3" color graphic touch screen. OR... <b>Watlow F4 Controller</b> with RS-232 interface, LED readout of temperature, LCD display of other parameters.
<b>Limit Controller</b>	Independent high and low temperature limits. Triggers an audible alarm and shuts down the

	chamber. Relay contacts provide a safety power interlock for test sample.	
<b>Chart Recorder</b>	(Optional) Honeywell DR4300 Series. One pen, 10" circular chart. Mounts in lower front door.	

### Input Power Requirements

<b>230 V ±10%, 60 Hz, 3 Phase</b>	Max Current Draw 39 A; Recommended Service 50 A
<b>208 V -5/+10%, 60 Hz, 3 Phase</b>	Max Current Draw 35 A; Recommended Service 45 A
	Input may be configured for 230 V or 208 V in the field by changing jumpers. Three phase load is balanced. Call for other voltages or 50Hz operation. Performance is reduced by 17% with 50Hz input power.  Customer power source must be hard-wired to the chamber by a qualified electrician. Power cord and plug is not included.

### Physical Characteristics and Safety

<b>Inside Dimensions</b>	40" W x 32" H x 36.5" D (27 cubic feet) 1016 mm W x 813 mm H x 927 mm D (765 liters)	
<b>Outside Dimensions</b>	49" W x 73.25" H x 63" D (nominal) 1244 mm W x 1860 mm H x 1600 mm D Door latch adds 3" to width on right side. Circulator motor and housing adds 6" to height - may be removed for move-in.	
<b>Minimum Installed Clearance</b>	18" from the left and right side 24" from the rear	
<b>Window Viewing Area</b>	16" W x 13" H	
<b>Access Ports</b>	4" Port on left and right side (two total) Supplied with foam plugs	

<b>Weight</b>	Chamber Weight: 1,560 pounds Shipping Weight: 1,744 pounds
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**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.

Due to continuous product improvements, specifications subject to change without notice.