



## Benchmaster Temperature & Humidity Test Chambers

Tenney Benchmaster test chambers are capable of simulating a wide range of temperature or temperature and humidity conditions. The one horsepower cascade refrigeration and two kilowatt heating system provide optimal cooling and heating performance. The five cubic foot internal workspace has the versatility to accommodate both small and large size test material. In keeping with the needs of today's lab environments, the Tenney Benchmaster chamber design incorporates a compact exterior that maximizes the interior workspace.

### ► Features

- All models feature vapor-tight, continuously welded stainless steel interiors
- 3-inch port is standard on left side
- Temperature and humidity conditions are controlled with the Watlow F4T profiling type dual channel 1/4 DIN controller
- Data logging and Graphical trend chart for Watlow F4T controller
- Ethernet communication
- USB port
- Cascade type refrigeration system
- Nichrome wire air heater
- Low workspace height to ease the loading and unloading of product
- Accurate control and display with minimum maintenance
- Vertical recirculation conditioning system
- Available in either a benchtop or upright configuration

### ► Options:

- RS 232 or RS485 communications
  - 5 gallon water reservoir\*
  - Recirculating system for humidity water\*
  - Water demineralizer\*
  - External dryer for obtaining humidity levels as low as 5%\*
  - Additional ports
  - Viewing windows up to 6" x 8" and thermal insulated
  - Interior lighting
  - Shelving, adjustable and removable
  - Automatic CO2 or LN2 cooling boost system
  - Boost heating system
  - GN2 purge system
  - Recording instruments
  - Chamber cart with casters
  - TempGard IV Over-temperature Protection
  - NIST Calibration
  - Tenney Environmental offers calibration services accredited to the ISO 17025 standard
  - Additional engineered to order custom configurations available
- \* Humidity Model Only



Tenney, Lunaire, Blue M, Gruenberg  
Lindberg/MPH, Wisconsin Oven

**Tenney Environmental**

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Model	BTC		BTRC	
Cubic Feet	5			
Liters	141			
Work Space (WxDxH)	20.5" x 20" x 22" 521mm x 508mm x 559mm		20.5" x 20" x 22" 521mm x 508mm x 559mm	
Exterior (WxDxH)	67" x 30" x 41" 1702mm x 762mm x 1042mm		67" x 30" x 41" 1702mm x 762mm x 1042mm	
Approx. Unit Weight	825 lbs / 375 kg		875 lbs / 397 kg	
Approx. Crated Weight	875 lbs / 397 kg		925 lbs / 420 kg	
<b>Temperature Range</b>				
Standard Temperature Range	-68°C to 180°C			
Optional Temperature Range	-70°C to 200°C		-70°C to 180°C	
Humidity Range	N/A		20% to 95% in the dry bulb range of +20°C to 85°C as limited by a 5°C Dewpoint	
<b>Cooling Rates (empty chamber) Min (°C/min)</b>				
180°C to -65°C	58 (4.1)	ambient to -35°C	9 (6.6)	
125°C to -35°C	34 (4.7)	ambient to -40°C	10 (6.5)	
85°C to -40°C	23 (5.4)	ambient to -65°C	25 (3.6)	
ambient to -20°C	6 (7.5)	ambient to -68°C	38 (2.4)	
<b>Heating Rates (empty chamber) Min (°C/min)</b>				
-65°C to 180°C	20 (12.2)	-68°C to ambient	5 (18.6)	
-20°C to 85°C	7 (15)	ambient to 85°C	4 (15)	
-40°C to 85°C	8 (15.6)	ambient to 125°C	7 (14.2)	
-35°C to 180°C	7 (12.6)	ambient to 180°C	32 (4.8)	
<b>Live Load Capacity</b>				
Live Load Watts @ -18°C			930	
Live Load Watts @ -40°C			820	
Live Load Watts @ -54°C			560	

	BTC		BTRC	
Temperature Control	± 1.0°C after stabilization			
Humidity Control	N/A		±5% RH after stabilization	
Air Flow Rate	115 CFM			
Heat Capacity	2000 W			
Refrigeration	Two (2) 1 HP Reciprocating Compressors			
Humidifier	N/A		1500 W-GPH 0.5	
Condenser	Air Cooled			
Condenser Discharge Air	Exits on right side of chamber			
Heat of Rejection	Maximum 12000 BTU's per hour			
Power	230V-1PH-60Hz			
Amp – Fuse	40			
Amp – Under Load	29			
NEMA Plug	Male Plug NEMA 6-50P			
Standard Ports Included	3" Standard Port w/Plug centered left sidewall			
Decibel Level	Less than 58 dBA as measured 3 feet from chamber, 5 feet from the floor at right angles			
Load Per Shelf	50 lbs / 23 kg per shelf (Maximum chamber load including shelf and floor load not to exceed 50 lbs / 23 kg)			
Number of Shelves Standard	None			
Max Number of Shelves	4 Shelves			
Shelf Spacing	2" / 50mm on Pilasters			
Chamber Spacing Requirement	18" / 458mm on all sides			
Floor Load Rating	50 lbs / 23 kg			

Performance is based upon an empty chamber with air temperature measured at the supply air stream, operating at 24°C (75°F) ambient air. Operating at 50Hz or higher than 24°C ambient air, performance may be reduced. Consult factory regarding any special cooling requirements.