



Fast Change Rate “FCR” Temperature & Humidity Test Chambers

The Tenney FCR Series Temperature Humidity Cycling Chamber features scroll compressor technology that provides quiet operation, fast transition rates, and reliable operations.

Multiple heating and cooling systems are available, as well as a diverse list of options that together will create the chamber to accommodate your specific application.

► Features

- Synergy Quattro touch screen controller
- Ethernet & R232 communications
- Heated viewing glass window
- Chamber light
- Two 3" cable ports
- Reliable scroll compressor technology
- Nichrome wire air heater precise control
- Refrigeration Pressure transducers
- Solid state humidity sensor (when RH option is selected)
- Platinum RTD temperature sensor
- Heavy-duty leveling casters
- Thermal expansion valves for precise cooling control
- FM approved safety OTP
- Backup safety thermal cutoff
- Main electrical disconnect with Lock Out capability
- Chamber vent port
- Water cooled condenser

► Options

- IEEE communications
- 5 gallon water reservoir*
- Recirculating system for humidity water*
- Water demineralizer*
- Pump to drain
- Dehumid/Dry Air Purge
- Product load control
- UUT Module
- Customer Alarm Output Contact
- Additional ports
- Shelving, adjustable and removable
- CO2 or LN2 cooling boost system
- Boost heating system
- GN2 purge system
- Maintenance Kit
- Recording instruments
- NIST Calibration
- Tenney Environmental offers calibration services accredited to the ISO 17025 standard
- Additional engineered to order custom configurations available
- * Humidity Model Only

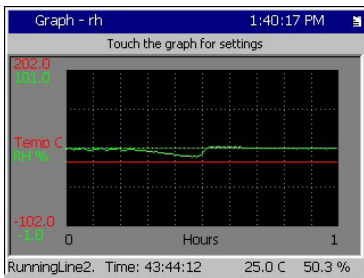
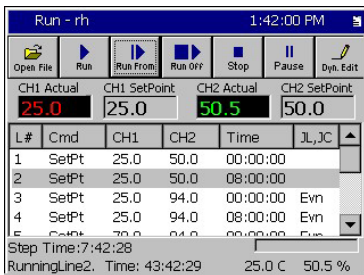
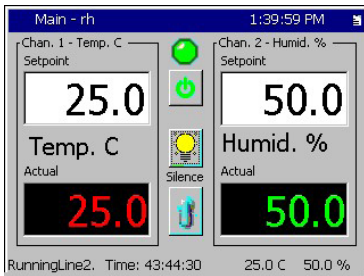


Tenney, Lunaire, Blue M, Gruenberg
Lindberg/MPH, Wisconsin Oven

Specifications and Product Information are subject to change without notice.
Consult your Tenney Environmental Sales Representative for a full list of available options.

Tenney Environmental

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▶ Synergy Quattro Controller Features

- User-friendly LCD graphical 320 x 240 color display/touch screen programmer with simple English language prompts for program entry
- Real time clock
- Near infinite number of programs and steps
- PID control with auto-tune and operator adjustable to match special chamber loading conditions (2-channel capability)
- Tenney's exclusive state of the art logic circuits automatically select the necessary refrigeration and heating capacities as well as humidification operating modes, as required to achieve the desired chamber environment
- Storage and retrieval of programs and test data from USB Port, local flash disk and/or removal PCMCIA flash card
- Separate I/O controller (Olympic) for machine interface, machine diagnostics
- RS-232 serial communications
- Advanced Ethernet (10/100) communications capabilities using TCP/IP networking protocols
- USB Port for data collection of set point temperature and humidity, actual for air temperature and humidity
- Built in limit alarms
- Flash disk on chip storage
- Microsoft's advanced Windows TM CE operating system
- Serial communications are standard and wired externally to the cabinet with a DB9 port

▶ Benefits

- Robust design delivers consistent, reliable, repeatable results that lead to higher productivity
- Improved serviceability and reduced maintenance cost
- Constructed for long life and thermal integrity

▶ Temperature Ranges

- Single stage (S, RS models) -35°C to 180°C
- Cascade (C, RC models) -68°C to 180°C

▶ Relative Humidity Range

- 20%RH to 95%RH in the dry bulb range of 20°C to 85°C, limited by a 5°C dew point

▶ Available Sizes

- 10 ft3
- 20 ft3
- 30 ft3
- 40 ft3
- 64 ft3

▶ Available Refrigeration Size

- 6HP
- 10HP
- 15HP

FCR Series Temperature / Humidity Test Chamber Specifications															
Model	FCR10			FCR20			FCR30			FCR40			FCR64		
Cubic Feet (Liters)	10 (283)			20 (566)			30 (850)			40 (1133)			64 (1812)		
Work Space (WxDxH)	24" x 26" x 28" (609 mm x 660 mm x 711 mm)			30" x 32" x 36" (762 mm x 812 mm x 914 mm)			36" x 40" x 36" (914 mm x 1016 mm x 914 mm)			40" x 44" x 40" (1016 mm x 1117 mm x 1016 mm)			48" x 48" x 48" (1219 mm x 1219 mm x 1219 mm)		
Exterior (WxDxH)	40" x 81" x 79" (1016 mm x 2057 mm x 2007 mm)			46" x 87" x 87" (1168 mm x 2210 mm x 2210 mm)			52" x 95" x 87" (1321 mm x 2413 mm x 2210 mm)			56" x 99" x 91" (1422 mm x 2515 mm x 2311 mm)			64" x 103" x 99" (1626 mm x 2616 mm x 2515 mm)		
Approx Unit Weight	1700 LBS (772 kg)			2100 LBS (953 kg)			2400 LBS (1089 kg)			2700 LBS (1225 kg)			3300 LBS (1497 kg)		
Available In	6HP			6HP, 10HP			6HP, 10HP, 15HP			6HP, 10HP, 15HP			6HP, 10HP, 15HP		
Cooling Rate (empty chamber) °C/minute															
Model	FCR10			FCR20			FCR30			FCR40			FCR64		
Refrigeration HP	6 HP			6 HP			10 HP			6 HP			10 HP		
Cascade 180°C to -68°C	9.0°C/min			5.5°C/min			10.0°C/min			4.25°C/min			8.5°C/min		
Single Stage 180°C to -35°C	13.0°C/min			8.0°C/min			14.0°C/min			6.5°C/min			11.75°C/min		
11.5°C/min															
15 HP															
6 HP															
10 HP															
15 HP															
6 HP															
10 HP															
15 HP															
6 HP															
10 HP															
15 HP															
Heating Rates (empty chamber) °C/minute															
Model	FCR10			FCR20			FCR30			FCR40			FCR64		
Refrigeration HP	6 HP			6 HP			10 HP			6 HP			10 HP		
Heating kW	6 kW			6 kW			12 kW			6 kW			12 kW		
-68°C to 180°C	11.75°C/min			8.0°C/min			15.5°C/min			7.25°C/min			13.75°C/min		
-35°C to 180°C	11.75°C/min			8.0°C/min			15.25°C/min			7.0°C/min			13.25°C/min		
17.5°C/min															
18 kW															
6 kW															
12 kW															
18 kW															
6 kW															
12 kW															
18 kW															
6 kW															
12 kW															
18 kW															
Live Load Capacity (SS = Single Stage; C = Cascade) Watts															
Model	FCR10			FCR20			FCR30			FCR40			FCR64		
Refrigeration HP	6 HP			6 HP			10 HP			6 HP			10 HP		
Live Load Watts @ -18°C (S,RS)	3200 W			2800 W			3900 W			3600 W			5300 W		
Live Load Watts @ -18°C (C, RC)	7300 W			6800 W			9900 W			6300 W			11800 W		
Live Load Watts @ -40°C (C, RC)	5600 W			5100 W			6100 W			6300 W			9900 W		
Live Load Watts @ -54°C (C, RC)	3100 W			2700 W			3600 W			3900 W			5300 W		
3800 W															
5200 W															
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3700 W															
5100 W															
6100 W															
9800 W															
10800 W															
3700 W															
5100 W															
6100 W															
9800 W															
10800 W															
General Specifications															
Temperature Range	Single stage (S,RS models) -35°C to 180°C Cascade (C,RC models) -68°C to 180°C														
Humidity Range	(RS,RC models only) 20% to 95% in the dry bulb range of 20°C to 85°C as limited by a 5°C dewpoint														
Control Tolerances	Temperature: ± 1°C after stabilization Humidity: ± 5% RH after stabilization														
Air Flow Rate	750 CFM (FCR10, FCR20) / 1500 CFM (FCR30, FCR40, FCR64)														
Humidifier capacity	3kW (RS,RC models only)														
Condenser	Water Cooled / Air Cooled														
Electrical Requirements (C = Cascade; S = Single Stage; R = Humidity)															
Power	460V - 3PH 60HZ						460V - 3PH 60HZ			460V - 3PH 60HZ					
Horsepower	6HP						10HP			15HP					
HP Temp/RH	RC/C		RS		S		RC/C		RS		S				
Amp - Fuse	45 Amps		40 Amps		30 Amps		90 Amps		60 Amps		60 Amps				
Amp - Under Load	36 Amps		28 Amps		24 Amps		69 Amps		48 Amps		44 Amps				
Power	208V - 230V 3PH 60HZ						208V - 230V 3PH 60HZ			208V - 230V 3PH 60HZ					
Horsepower	6HP						10HP			15HP					
HP Temp/RH	RC/C		RS		S		RC/C		RS		S				
Amp - Fuse	90 Amps		70 Amps		60 Amps		175 Amps		125 Amps		125 Amps				
Amp - Under Load	72 Amps		55 Amps		47 Amps		140 Amps		96 Amps		89 Amps				
187 Amps															
127 Amps															
120 Amps															

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.