

# Tenney Jr.

## Test Chambers

**LR**  
ENVIRONMENTAL  
EQUIPMENT COMPANY INC.

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[LRE.com](http://LRE.com)



The Tenney compact junior line of chambers in both bench-top and floor models are capable of simulating a wide range of temperature or temperature and humidity conditions. These chambers are well-suited for use in electronic, military, and pharmaceutical quality assurance and reliability testing, as well as research testing and production processes. In keeping with the needs of today's lab, these chambers are specifically designed to have a compact exterior, yet an ample interior workspace to maximize valuable floor space.



**Tenney**  
ENVIRONMENTAL

ADAPTING TO YOUR ENVIRONMENT

# Specifications

## Overall dimensions in inches /centimeters

Model		TJR	TUJR	THJR
Workspace	W	15% /40		1611 /42
	D	11/28		15%/40
	H	11%/30		20/51
Exterior	W	36% /93	28/71	51/130
	D	2211 /57	20/51	24/61
	H	3011/78	65/165	30/76

## Temperature Range

Low	°C	-75	-12
High	°C	+200	+93

## Change rates in minutes

Ambient to °C to Chamber Empty	200°	55°	—
	150°	30	—
	100°	15	—
	93°	—	30
	65°	—	15
	2°	—	20
	-7°	—	30
	-12°	—	45
	-40°	20	—
	-54°	30	—
	-65°	40	—
	-73°	55	—
	-75°	Ultimate	—

## Live load capacity in watts (humidity system off)

Temperature °C	24°	—	275
	10°	—	170
	-7°	—	45
	-12°	—	5
	-40°	170	—
	-54°	145	—
	-65°	105	—
	-73°	60	—
	-75°	Ultimate	—

## Utilities, etc.

Refrigeration		(2) 11 HP + 11 HP		(1) 1/2 HP
Heater Capacity		500 W		500 W
Humidifier	W	—	—	500
	GPH	—	—	0.15
AMPS @ 115V, 1Ø		18		12
AMPS Fuse		20		15
Unit Weight	LBS/Kg	260/118		275/125

Humidity capability: 20% to 98% RH in the dry bulb range of +20°C to +85°C as limited by a 3° dewpoint. Test data based on 24°C ambient, sea level, 60Hz. On 50 Hz or higher than 24°C ambient, performance may be reduced. Consult factory regarding any special cooling requirements. CFC-free refrigerants are used exclusively on all Tenney chambers.

# Standard Features

## Construction

All models feature vapor-tight, continuously welded stainless steel interiors. Structural reinforcement is used at all critical points. Through-wall ports are continuously welded. A combination of fiberglass and polyurethane insulation surrounds the chamber to maximize insulating characteristics, thus ensuring minimal thermal transfer.

## Control System for TH Jr.

Proprietary VersaTenn controller provides complete automatic chamber control through a user-friendly alpha-numeric display. The control is bi-directional, proportional for heating, cooling, humidification, and dehumidification. The proportional band and the reset are operator-adjustable. Logic circuits automatically select cooling, heating, and humidity modes as required.

- 99 step programming capability with step-interval length of 99 hours.
- Ability to store up to 10 resident programs.
- Looping and nested-loop capability. Loops can be repeated up to 255 times. Infinite looping is possible.
- Time intervals are programmable in seconds, minutes, and hours.
- Time-of-day start and delayed-start functions up to two weeks.
- Guaranteed soak feature.
- Non-volatile memory for up to 5 years of power-off protection of RAM.
- Digital selection and display of actual conditions.

## Control Tolerance

$\pm 0.3^{\circ}\text{C}$  and  $\pm 2\%$  RH typical after stabilization.

## Control System for Tenney Jr. and TU Jr.

The Watlow 942 controller provides 24-step programming, or may be used as a non-ramping manual controller.

## Features include:

- Data output that sends information directly to a serial printer
- Time-proportioned output
- Zero voltage switching

## Resolution

Setpoint and chamber temperature are displayed with  $0.1^{\circ}\text{C}$  or  $0.1^{\circ}\text{F}$  resolution, and 0.1% RH on the TH Jr.

## Sensors

A platinum RTD sensor measures temperature. Humidity is measured by an electronic, capacitive sensor that requires no wet wick or water supply. The sensors provide excellent control and display accuracy with minimum maintenance.

## Refrigeration System

Tenney *Hermeticool*®: air-cooled, readily accessible hermetic system uses accurately calibrated capillary tubes rather than mechanical expansion valves. This simplifies the system and reduces the likelihood of leaks.

## Humidity System

Tenney *VaporFlo*®: the humidity system is constructed of 100% non-corroding parts and is equipped with its own low-water protection system. A transparent Pyrex vessel permits easy inspection and enables easy clean out and maintenance. The system operates at atmospheric pressure and is specially vented to prevent undesired siphoning.

## Heating System

Low-mass nichrome, open wire heating elements are used to reduce thermal lag and provide rapid response to instrument demand. The heating elements are isolated from the workspace to reduce radiant influence on the test item.

## Electrical

All wiring complies with NEC. Circuit breakers are used throughout the electrical system and are located, along

▲ T-U Jr. temperature test chamber provides maximum performance with a minimum footprint.

with other electrical components, in a readily accessible, integral control panel.

## Conditioning System

Uniform conditions are assured through the use of a vertical-down recirculating conditioning stream. The system draws air from the bottom of the workspace, conditions as required, then discharges the air through a grille at the ceiling level. The compact design of the conditioning plenum allows the test chambers to offer a larger proportional area of interior volume to exterior volume than afforded by conventional chambers.

## Door

Since the unit's chamber is continuously welded, the door remains as the final sealing surface to maintain atmosphere integrity. All doors are equipped with double gaskets that trap air for the purpose of insulation. On the TH Jr. models, a unique, energy-efficient system circulates hot gas from the refrigeration system to provide automatic defrost for the door gaskets, thus ensuring pliable gasket conditions and extending gasket life.

