



# Environmental Walk-in Rooms



**TPS**<sup>™</sup>  
Thermal Product Solutions







## Industries

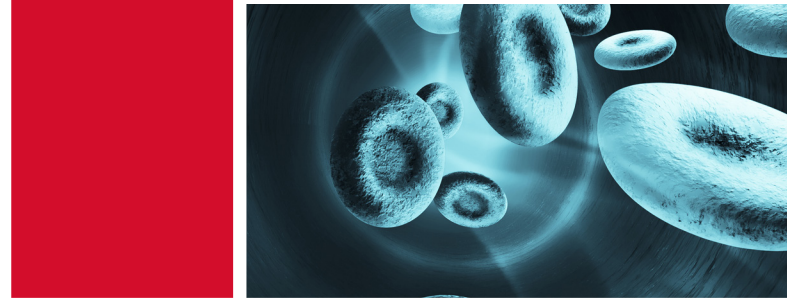
Solar Energy  
Defense and Aerospace  
Pharmaceutical  
Medical Devices  
Automotive  
Lab Ovens  
Electronics  
Petroleum and Natural Gas  
Battery Test Chambers  
Machinery  
Material Processing  
Semiconductors  
Telecommunications  
Test and Measurement  
Composite Curing Ovens  
Paints, Inks and Coatings  
Rubbers and Plastics  
Lab Animal Sciences

## Products

Environmental Test Chambers and Rooms  
Steady State Chambers and Rooms  
Industrial Ovens  
Sterilizers and Dryers  
Lab Furnaces  
Battery Test Solutions  
Out of Autoclave Solutions  
Process Controls  
Custom Industrial Ovens

**Thermal Product Solutions** is a global engineering designer, manufacturer, and service provider of standard and custom thermal-processing equipment. Our seven distinct brands include Baker Furnace, Blue M, Gruenberg, Lindberg/MPH, Lunaire, Tenney and Wisconsin Oven. From industrial ovens and furnaces to environmental temperature-cycling and stability test chambers, we accommodate a comprehensive range of applications to meet virtually every thermal-processing need.





# Environmental Testing

**Custom and standard environmental rooms to match your application and facility needs.**

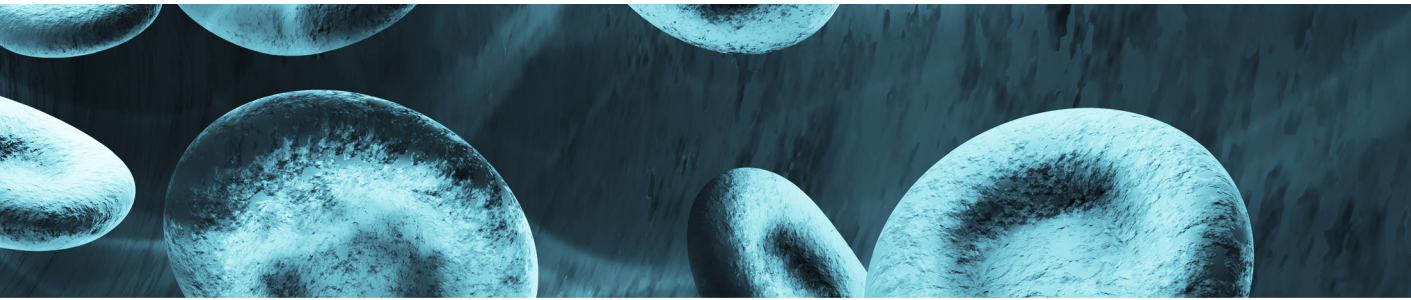
**When your testing requires walk-in rooms**, choose Tenney. Our test rooms feature automated process control, energy efficiency, and a vast range of features and options.

Every Tenney environmental room features state-of-the-art equipment that reliably produces required conditions, structural integrity that keeps the room working properly through years of demanding test cycles, and measuring/monitoring equipment that precisely records all test data.

Tenney environmental rooms are used world-wide for many testing applications. Almost every tool, product or component that is used in the home, factory or field is tested with environmental simulation equipment. Tenney's engineering experience can deliver environmental rooms to meet your exact requirements:

- **Automotive**
- **Appliance Testing**
- **Microelectronics**
- **Electrical**
- **Microbiology**
- **Medical Research**
- **Energy Technologies**





## Standard Panelized Environmental Room Specifications

MODEL	INTERIOR DIMENSIONS (W x D x H)	EXTERIOR DIMENSIONS (W x D x H)	CUBIC FEET	AVAILABLE DOOR SIZES (W X H)			REFRIGERATION HP SIZES AVAILABLE (SINGLE STAGE OR CASCADE)					
				36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0
WIS-316	73.5" x 77.5" x 96"	81.5" x 104.5" x 104.5"	316	36" X 77"	48" X 77"	N/A	5.0	7.5	10.0	15.0	25.0	30.0
WIS-366	85" x 77.5" x 96"	93" x 104.5" x 104.5"	366	36" X 77"	48" X 77"	N/A	5.0	7.5	10.0	15.0	25.0	30.0
WIS-477	96.5" x 89" x 96"	104.5" x 116" x 104.5"	477	36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0
WIS-539	96.5" x 100.5" x 96"	104.5" x 127.5" x 104.5"	539	36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0
WIS-603	108" x 100.5" x 96"	116" x 127.5" x 104.5"	603	36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0
WIS-744	119.5" x 112" x 96"	127.5" x 139" x 104.5"	744	36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0
WIS-820	119.5" x 123.5" x 96"	127.5" x 150.5" x 104.5"	820	36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0
WIS-983	131" x 135" x 96"	139" x 162" x 104.5"	983	36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0
WIS-1069	142.5" x 135" x 96"	150.5" x 162" x 104.5"	1069	36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0
WIS-1160	150.5" x 173.5" x 104.5"	142.5" x 146.5" x 96"	1160	36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0
WIS-1351	162" x 185" x 104.5"	154" x 158" x 96"	1351	36" X 77"	48" X 77"	72" X 77"	5.0	7.5	10.0	15.0	25.0	30.0





## Tenney offers walk-in environmental rooms in both standard and custom configurations to meet your process requirements.

### Standard Panelized Walk-In Chambers

The interlocking panelized chambers can be quickly shipped and assembled for less cost than a non-panelized chamber. The chamber panels interlock using a tongue and groove assembly that can be secured using cam latches and silicone sealant. The latches connect to metal banding links that are embedded in the panels to create a structurally strong chamber.

### Controls

The microprocessor-based controller allows the operator to program up to 40 profiles, including the common steps of ramp, soak, and guaranteed soak. The user-friendly 7" touch screen display also includes ports for Ethernet, USB, serial, and SD card connections.

The controller provides data logging, alarm and event monitoring, and remote access from any computer with internet access. The included dual alarm relays can be programmed as either process or deviation alarms.

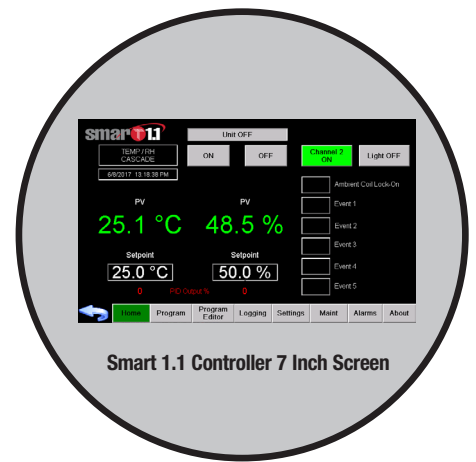
### Flexibility

Each chamber panel consists of 4" (100mm) thick urethane foam between a stainless steel interior wall and a galvanized exterior wall. After the chamber panels are assembled, the walk-in room is self-supporting, eliminating the need for additional structure supports. The chambers can be ordered with different door sizes, access ports, and options as necessary.

## Tenney Environmental Room Options

- Flooring
- Floor Coverings
- Windows and Ports
- Ramps
- Remotely Located Refrigeration
- Airflow and Humidity Control
- Temperature Control
- Chart Recorders
- Test Product Heat Dissipation
- Lighting
- Room Air Exhaust and Fresh Air Input
- Safety Systems (heat overload, fire, gas monitoring, door locks, sound levels)
- Water and Air Supply Conditioning
- CO2 and LN2 Injection
- Insulation
- Extended Humidity Range
- Rigid Hard Walled Frame for Strength
- Stainless Steel Interior is Hermetically Welded





Smart 1.1 Controller 7 Inch Screen

# Smartest Kid on the Block



The main features of the 7" Windows based PLC Smart 1.1 are the high resolution graphical touch screen, Smart 1.1 graphical user interface, 800MHz Corex A9 central processing unit with graphics processor, 4GB (SD Card) flash storage, capable of storing up to 100 profiles with 100 steps each. Test data retrieval and profile data transfer/sharing is accomplished through a local FTP server via Ethernet connection. Individual PID control loops allow for precise process control.

## Features included with Smart 1.1:

- Real-time and historical color graph displays for temperature and humidity as well as set point values.
- System can run in Single set point or Programmed modes.
- Alarm, Program, and Datalog files can be easily transferred to and from controller via Ethernet connection
- Built-in TCP/IP networking via Ethernet 10/100 communication port
- Ethernet communications are standard. RS485, RS232 and IEE GPIB are all available as options
- Analog signal re-transmit out to peripheral devices such as optional chart recorders, etc.
- Remote access via Smartphone, iPad, etc. with internet connection and VNC phone application.
- Dynamic Expandable Zoom
- 850:1 Contrast Ration
- Windows CE 7.0 Operating System
- 16 million display colors
- Projective Capacitive Touch Screen
- TFT LCD Anti-Glare Display

## Construction

- Temperature range: -73°C to 85°C
- Humidity range: 20% to 95% in the temperature range of 20°C to 85°C, limited by a 5°C dew point
- Modular design for easy transport and setup
- 4" (100mm) insulated wall panels
- Interior lighting
- Optional 3" or 6" ports
- Thermally insulated and heated windows
- 36" x 77" door

## Special Features

- Redundant over temperature protection and alarms
- Heavy duty floor supports 600 lb/ft2 of equally distributed weight
- Refrigeration taps and pressure gauges
- Optional water demineralization
- Optional external dryers to achieve very low humidity levels
- Optional Chart Recorder

## Efficient Tenney Humidity and Conditioning System

- Durable and reliable construction
- High quality compressors
- Tenney Vapor Flow®
- Easy access panel for maintenance
- Quiet operation



**Baker Furnace, Blue M, Gruenberg, Lindberg/MPH,  
Lunaire, Tenney, Wisconsin Oven**

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