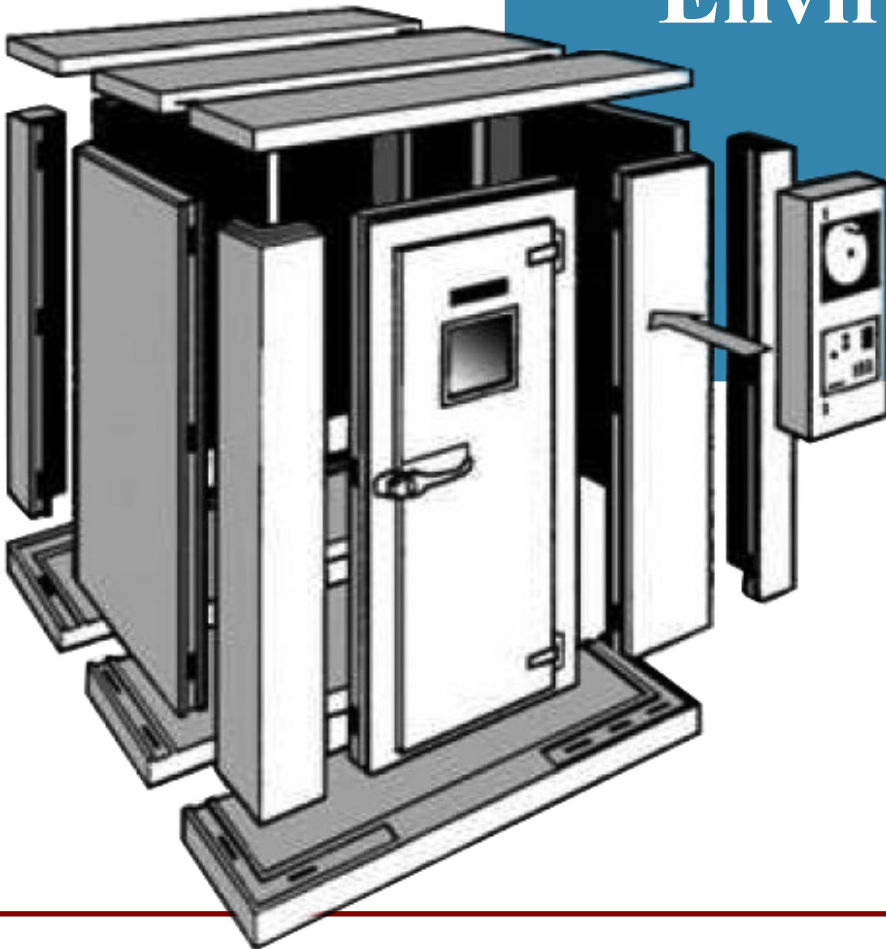




## Environmental Walk-In Rooms



Thermmax, LLC  
315 West Street Road  
Warminster, PA 18974

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Toll Free: 1-800-899-3774

Email: [sales@thermmax.com](mailto:sales@thermmax.com)  
[www.thermmax.com](http://www.thermmax.com)

# Environmental Rooms



## Standard Ranges

•

### Temperature

Cold Rooms:.....4 °C  
Warm Rooms: 20 to 50 °C  
Stability Rooms: 15 to 30°C  
Freezers:..... -25 to 0 °C  
Wide Range: 0 to 50 °C  
Low Temperature: -40 °C

•

### Humidity

Standard: .....20 -90%RH  
With Dew Point... 4C to 50C  
Control: ± 3%  
Accuracy: ± 1%

### Dessicant Dryer Systems:

Sub-Freezing Dewpoints  
Relative Humidity to  
30% @ 4 °C  
5% @ 35 °C

### Specials Available

## Precision Controlled Temperature Humidity Rooms

- Scientific Research
- Pharmaceutical • Life Science Applications
- Critical Product Storage and Testing

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# Environmental Rooms

## Standard Features

The Modular Environmental Rooms are constructed from a flexible system of foamed-in place Polyurethane panels. Surfaces are metal lined with various optional finishes. The panels are locked together with cam lock fasteners providing a tight vapor seal. The resulting insulation has a high energy efficient R value greater than 30 and provides a natural 100% closed cell moisture vapor barrier.

All Refrigeration is proportionally modulated for energy efficiency and long term reliability. All Refrigerants used are environmentally friendly *non* CFC's.

Control Loops are accomplished with the latest microprocessor three mode PID electronic precision instruments with digital panel readout for set point and actual process variable. RS485 interface for computer communication is available.

Temperatures are measured with RTD platinum sensors with NBS traceable accuracy. Humidity is measured with a precision linear sensor.



## Standard Ranges

### Temperature

**Cold Rooms:** .....2-10 °C  
**Warm Rooms:**.....20-50°C  
**Stability Rooms:**.....15 to 40°C  
**Freezers:**..... -20 °C  
**Environmental:**.....0 to 50C  
**Wide Range:**..... -20 to 50 °C  
**Low Temp Freezer:** ..... to -40 °C

### Humidity Option:

**Standard:** .....20 to 90% RH  
**Dew Point Range:** 4 to 50 °C  
**Desiccant Dryer Systems:** to 2% RH

### Typical Performance Criteria

**Temperature Control:**..... ±0.3°C  
**Temperature Accuracy:**.....±0.1 C  
**Horizontal Uniformity:** ± 0.5°C  
**Vertical Uniformity:** ± 1.0°C  
**Humidity Control:**..... ± 3%RH  
**Humidity Accuracy:**..... ± 1%RH

### Typical Options

Programmable Cycles  
Data Acquisition Systems  
Central Computer Interfaces  
Redundant Refrigeration Systems  
Shelving and Furniture  
Special Doors and Ramps  
Factory Paint, or Stainless Steel Surfaces

***Validation for GMP***

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# Environmental Rooms



**Temperature-Humidity Stability Rooms**



**Combination Cold Room-Freezer**



**Pharmaceutical Laboratory Rooms**



**Laboratory Cold Room**



**Robotic Archive Storage Freezer**



**Temperature Humidity Test Room**



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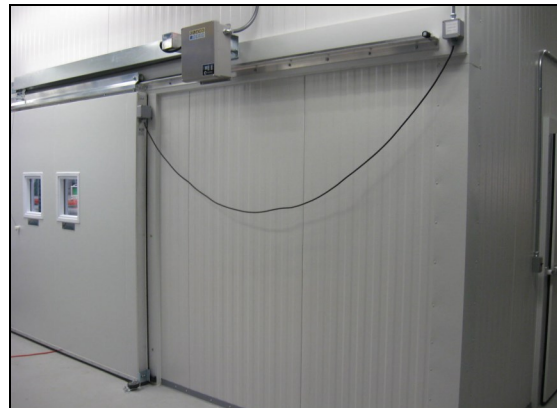
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# Environmental Rooms

Laboratory Rooms



Warehouse Rooms



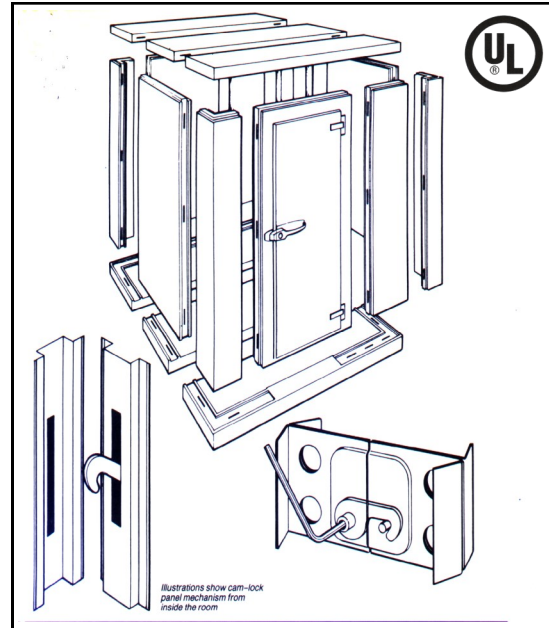
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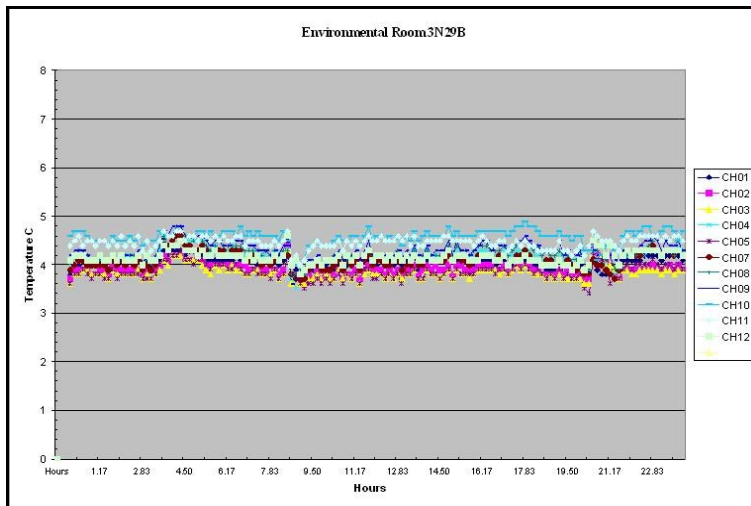
# Environmental Rooms

## *Construction Highlights*

The cam locked metal faced urethane panels provide great strength and rigidity. No framing of any type is used, thus preventing any significant heat transfer gradients. The panel sections lock together from inside to provide easy access for installation. The non-hygroscopic insulation is four inches of foamed in place rigid polyurethane foam with an overall U-factor of 0.029 and an R factor >30. The urethane used is UL fire test approved with a low flame spread rating of 25 or less. All panel sections have tongue and groove construction to provide tight leak-proof seams. The insulated doors are flush with the outside walls and are fabricated with similar construction. The heated door gasket is thermoplastic with a magnetic steel core. Doors are self-closing and are hinged with attractive chrome hardware. An internal release mechanism prevents anyone from ever being trapped inside even when the door is padlocked. Rooms are available in a variety of corrosion resistant natural metal finishes, and with baked white enamel surfaces. Various flooring options are also available including aluminum tread plate, stainless steel, and seamless vinyl. **Factory Mutual Approval available on some models.**



## Precision Air Distribution System



Typical Thermal Mapping Test Results

Thermmax provides a low profile ceiling mounted air distribution system that draws room air up from the center of the room and uniformly distributes it along both side walls. This produces excellent temperature uniformity throughout the entire work space. Uniformity is typically better than  $\pm 0.5$  C on a horizontal plane and  $\pm 1.0$  C on the vertical.

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