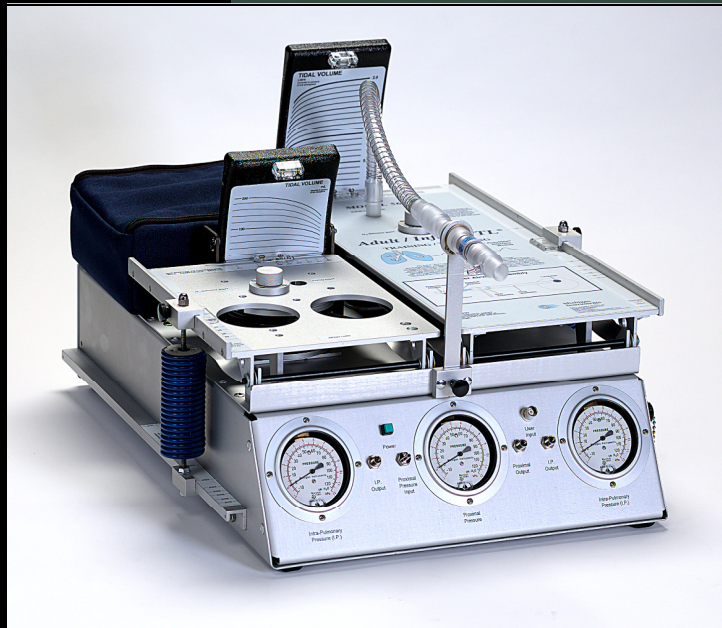


# Training/Test Lung - TTL<sup>®</sup>



## Adult Infant Lung Simulator

*Quality and Versatility  
Built Into Every Unit*

**Provides accurate simulation of wide ranges of normal and diseased lung conditions for ventilator testing/calibration and respiratory therapy instruction.**



**Michigan  
Instruments**  
INC.

**Call 1-800-530-9939 or visit [www.michiganinstruments.com](http://www.michiganinstruments.com) to learn more about the TTL/PneuView<sup>®</sup> test systems from Michigan Instruments.**

## What is the Adult Infant TTL<sup>®</sup>?

- A portable analog dual lung (one adult and one infant) system which accurately simulates human pulmonary function for training or testing ventilators under simulated load conditions.
- The adult lung holds a residual capacity typical of an adult human. The infant lung's residual capacity is typical of an infant, 6 to 12 months of age.
- Visually demonstrates a variety of normal and pathological pulmonary conditions.
- Provides an accurate measure of volumes, pressures and flow rates of medical equipment and replaces several measuring instruments at a fraction of their combined costs.
- Can accommodate several types of oxygen measuring sensors and other pressure sensing equipment.

## How does the TTL<sup>®</sup> work?

- Uses two lungs, each with its own range of compliance settings to simulate the pulmonary system.
- The PneuFlo<sup>®</sup> resistors offer accurate simulation at both upper and lower airway resistance in exact accordance with ASTM standards. These resistors represent the parabolic flow characteristics of the human airway.
- The pressure corrected volume measurements match spirometer volumes measured on an actual patient with the same pulmonary compliance and airway resistance.

## Combining lung simulation with the versatility of a personal computer.

To enhance the demonstration of ventilation phenomena and allow the capture and review of data from the TTL<sup>®</sup>, we've developed the PneuView<sup>®</sup> Adult Infant System. This system incorporates an interface that communicates with software on a personal computer. The PneuView<sup>®</sup> system combines the very finest in lung simulation with advanced data acquisition, presentation, and storage.

### PneuView<sup>®</sup> Software

- Visually demonstrates, in real-time, the relationship between pressure, volume, and flow waveforms.
- Provides acquisition, storage, and review of data.
- Tracks ventilator performance trends for up to 72 hours.
- Measures pressure, volume, flow and timing parameters.
- Includes flow/volume and pressure/volume loops.
- Generates concise, yet comprehensive printed reports.



### PneuView<sup>®</sup> Software CALCULATIONS:

- Breath Rate
- Inspiratory Time
- Expiratory Time
- I:E Ratio
- Tidal Volume
- Minute Volume
- Mean Airway Pressure
- Baseline Pressure

## Specifications:

### Tidal Volume Capacity:

Adult Lung	2.0 L
Infant Lung	200 mL

### Residual Lung Volume:

Adult Lung	1.02 L
Infant Lung	70 mL

Size: Approximately 20" x 25" x 8"

Weight: 37 lbs. (16.8 kg)

### Lung Compliance (adjustable):

Adult Lung	.01 to .10 L/cmH <sub>2</sub> O
Infant Lung	.001 to .01 L/cmH <sub>2</sub> O
Accuracy: +/- 3% (at calibration volumes)	

### Airway Resistance (adjustable):

Adult Lung	Rp5, 20 or 50 cmH <sub>2</sub> O/L/sec
Infant Lung	Rp50, 200 or 500 cmH <sub>2</sub> O/L/sec
Accuracy: +/- 5% (at calibration flows)	