Q: What is a TTL®?

A: A Training/Test Lung.

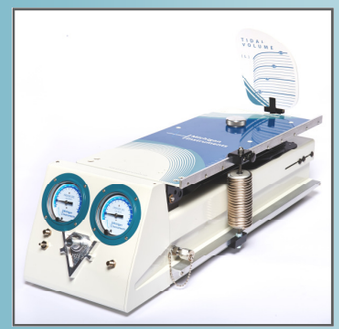
The TTL®:

- embodies a mechanical simulation of the human pulmonary system capable of measuring more than twenty individual parameters.
- visually demonstrates almost any normal or pathological pulmonary condition.
- provides accurate measurements of volumes, pressures and flow rates of medical equipment replacing several measuring instruments at a fraction of their combined costs.
- accommodates most gas specific measuring sensors and other sensing equipment.
- available with PneuView®3 software or in an analog version.

Applications:

- Classroom Instruction
- Ventilator Testing
- Product Evaluation
- Product Demonstration
- Pulmonary Research
- Quality Control
- Design Engineering
- Clinical Intervention

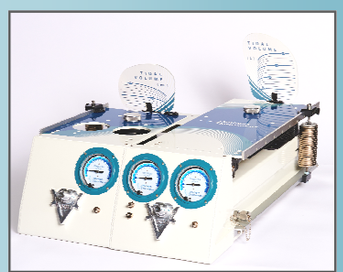
Single Adult Test Lung



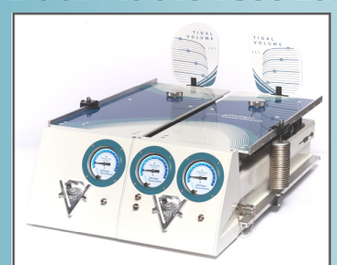
Mobility– Need a portable solution? The Single Adult lung provides compact, reliable simulation options and offers the same compliance and resistance options as our other adult lungs.

Adult/Infant Test Lung

Versatility– Need a wider spectrum of simulation? The Adult/Infant lung will provide an adult and infant lung in one solution. The infant lung is also ideal for HFOV and jet ventilation testing.



Dual Adult Test Lung



Capability– Need to measure large volumes? The Dual Adult lung can provide up to 4 liters of capacity.

Compliance for any lung can be set independently by a variable position spring located on the side. Resistance values can be selected using parabolic resistors introduced into the airway.

Breath Simulation Module

The Breath Simulation Module transforms the Dual Adult models into spontaneously breathing lung systems.

- Simulate a spontaneously breathing patient for training or studying the use of CPAP, IMV, SIMV and pressure support of other ventilation models designed for use with breathing patients.
- Test and troubleshoot devices designed to support a spontaneously breathing patient for training.
- Measure added work of breathing associated with breathing circuits.
- Assess trigger sensitivity and response of demand flow systems.

Breath Rate:	1-60 Breaths per Minute
Inspiratory Time:	User selectable - .50, 1.0, 1.5, & 2.0 sec (+/- .015 sec)
Breath Volume:	50-2000 mL
Manual Mode:	Manual trigger provided for individual breaths

NOTE: The BSM may be used on Adult/Infant TTL Models but its use is limited. It can only be used to create a spontaneously breathing infant lung.

PneuView®3 Software

PneuView®3 enhances the demonstration of ventilation phenomena. Possessing a wide array of capabilities and features, PneuView3® will complement any equipment testing, certification or calibration program.

Select from up to 26 data parameters gathered, calculated and reported. All parameters are available for review at any time.

- Visually demonstrates, in real-time, the relationship between pressure, volume, and flow waveforms.
- Provides acquisition, storage, and review of data.
- Trend ventilator performance for up to 1000 hours.
- Measures pressure, volume, flow and timing parameters.
- Provides FiO_2 and ambient temperature measurements.

PneuView®3 Software

CALCULATIONS:

- Breath Rate
- Inspiratory Time
- Expiratory Time
- I:E Ratio
- Tidal Volume
- Minute Volume
- Baseline Pressure
- and more

Computer Requirements:

PneuView®3 software requires minimal computer resources to ensure proper operation.

1 GHz processor
1 GB RAM (32-bit) or 2 GB RAM (64-bit)
1 GB available hard disk space
DirectX 9 graphics device with WDDM 1.0 or higher driver.
Windows® 7 (32 or 64 bit) OS or newer
Microsoft .NET Framework 4.5 or higher

Specifications:

	Single Lung	Adult/Infant Lung		Dual Adult Lung	
	Adult	*Adult*	*Infant*	*Each Lung*	*Total*
Tidal Volume:	2.0 L	2.0 L	200 mL	2.0 L	4.0 L
Residual Lung Volume:	986 mL	986 mL	200 mL	986 mL	1.972 L
Lung Compliance: (adjustable) L/cmH_2O Accuracy: +/- 3% (at calibration volumes)	.01 to .10	.01 to .10	.001 to .01	.01 to .10 (each lung)	NA
Airway Resistance: (selectable) cm H_2O/L/sec Accuracy: +/- 5% (at calibration flows)	Rp5, Rp20 or Rp50	Rp5, Rp20 or Rp50	Rp50, Rp200 or Rp500	Rp5, Rp20 or Rp50	NA
Pressure: (Lung/Airway) cm H_2O Accuracy: +/- 0.5% of user-calibrated Full Scale Output (FSO)	-20 to 120	-20 to 120	-20 to 120	-20 to 120	NA
Weight:	25 lbs	37 lbs		37 lbs	

Contact us for more information.

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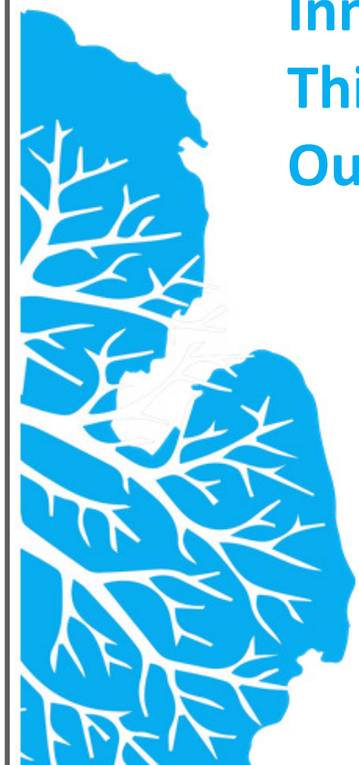
Innovations Like This Don't Come Out Of Thin Air



Announcing the NEW Michigan Lung

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