MEC Bodylethysmography device is a low cost measurement station for precise and reproducible testing which can be easily and economically upgraded with many modular options. (Possibility to upgrade with in-built CO diffusion measurement – Respiratory Mechanic). It is made in rigid construction for long-term stability.

- Aluminium and safety glass construction minimises any feelings of claustrophobia and offers excellent temperature transfer characteristics, enhancing fast signal stability and measurement reproducibility.
- Fast and reproducible results require uncompromising accuracy. The all-in-one concept helps you to save valuable time as the spirometry and flow-volume measurement is integrated in the MEC Bodybox Program.
- In compliance with the demands of leading pulmonologists, the entire data is obtained from a single breathing manoeuvre, which means the results are assessed on the basis of a continuous measurement better accepted by the patient.

- Your patients will always feel comfortable and relaxed.
- Seat height adjustment for comfort and optimal testing position.
- Automatic drift correction allows quick bodybox signal stability you can start the measurement as soon as the door of the box is closed.
- Fully automated BTPS correction for airway resistance curves to exact cabin temperature and lung conditions assures correct and informative results.
- The computer excludes artefacts according to determined quality criteria and proposes measurements for selection as best trials. At any time in case of doubt values and graphs can be called back and completely recalculated by hand for analyse.
- MEC Bodylethysmograph offers comprehensive differential PFT diagnosis which allows you to detect restrictive and/or obstructive respiratory disorders by reversibility of obstruction with broncho-dilatation testing or asthma diagnostic by broncho-provocation challenge testing.
- Allows fast and easy flow, volume and cabin pressure calibration.

**Components:**
- Large fully air-tight bodybox with large door and full panoramic glass windows.
- Variable Orifice Membrane pneumotachometer using reliable and durable flow sensor insensitive to water.
- Fast and reliable acquisition system oriented to future technology with: Serial port, PC and USB connection and communication protocol.
- Mobile trolley with Isolated power supply, computer, printer and large screen TFT monitor.
- Powerful and flexible measurement program compatible with Windows® based software and analysis with powerful PDI database management software open to central Hospital networking, automatic calibration programs and flexible report generator. Everything can simply be configured according to your desire.
- You or your staff can easily perform modifications at any time.
- Reports available in Word, HTML, PDF format.
M.E.C. Bodylethysmography measurement station

Measurements:
M.E.C PFT Bodybox is specially designed to determine:
- Static and dynamic lung volumes Spirometry / Flow-Volume,
- Bodylethysmographic Intrathoracic Gas Volume ITGV
- Bodylethysmographic Airway Resistance AWR
A variety of other recording programs are available so that, if desired, you can upgrade at any time and cover the entire range of lung function testing you require.

Options:
1. In combination with the optional Single Breath Diffusion Module, you will have a complete lung function laboratory at your disposal which also allows you to determine very easily:
   - Diffusion capacity single breath. DLCO/TLCO, Alveolar volume
   - Functional Residual Capacity FRC with gas dilution and static lung volumes.
   - Pulmonary gas distribution during expiration

2. In combination with the optional MEC Airway Mechanics module allows you to determine very easily:
   - Reversibility of obstruction after broncho-dilatation
   - Specific and non-specific Broncho Provocation with full reporting
   - Airway Mechanics, (Resistances and Compliances)
   - Airway resistance with flow interruption, Rocc, Rint,
   - Po1, Pimax, Pemax,
   - respiratory drive and hypercapnic stimulus Po1 and CO2 rebreathing

3. In combination with the MEC Exercice testing module allows you to determine very easily rest and stress spirometry together with 12 lead ECG parameters:
   - VO2; VCO2; VE; R; EQO2; EQCO2; O2 /Pulse etc
   - Tabulation presentations and graphical presentations (Wassermann) etc
   - With full report generator.

Variable Orifice Membrane Flow Sensor
The MEC bi-directional pneumotachograph VOM only weighs 32 grams, has a small dead space volume and is absolutely insensitive to moisture.

Neither moisture of the breath nor water droplets can influence the measurement. After cleaning, it is immediately ready for use.

The form of the lamella and the housing were mathematically optimized and guarantee a linear characteristic over the entire measuring range.

The « Variable Orifice Membrane Flow Sensor » was specially developed for spirometry and artificial ventilation to overcome the handicaps of conventional sensors insensitive to low flow and sensitive to moisture

Advantages:
- Great durability,
- High accuracy and reproducibility of the measurements
- Easy to clean
- Very low flow resistance
- No heating, no errors due to humidity and sputum.
- No errors at low flow ranges

VOM Variable Orifice Membrane flow sensor
### Technical specifications

**Body cabin:**
- **Construction:** welded and powder ionized coated aluminum construction / safety glass
- **Measuring stand with arm:** Can be adjusted for spirometry outside the cabin
- **Door construction:** safety glass 10mm door with 2 electromagnetic locks
- **Dimensions:** cabin: 810 x 870 x 1950 depth x width x height in mm
- **Volume / Weight:** 990 l / 150 kg

**Flow measurement**
- **Range:** ±0.02 – ±20l/s
- **Accuracy:** 0.05 – 15l/s ±2%
- **Resistance:** < 0.01 kPa(/l)s at 10 l/s
- **Resolution:** < 5ml
- **Back pressure:** <0.93kPa at 14l/s

**Volume determination**
- **Range:** 0 - ± 20 l/s
- **Accuracy:** 5 ml

**Mouth pressure**
- **Solid state pressure transducer**

**Box pressure**
- **Solid state pressure transducer**

**Box**
- **Aluminum / safety glass 8mm**
- **Volume:** 990 l
- **BTPS correction:** software Auto Digital BTPS correction
- **Drift compensation:** Auto Digital Drift Compensation
- **Cabin temperature:** Auto compensation sensor, accuracy: ±0.5°C

**Box Calibration**
- **Flow volume & body box pressure in one manoeuvre:** Flow/volume & cabin full-automatic single routine calibration procedure with built-in sinusoidal calibration pump or manual flow/volume calibration with volume calibrationsyringe pump (optional).

### Certification/Safety standards:
- **93/42/EEC:** Medical Device Directive
- **EN60601-1:** General Requirements for Safety
- **EN60601-1-1:** Safety Requirements for Medical Electrical Systems
- **EN60601-1-2:** Electromagnetic compatibility

### CE approval:
- **DGM-163:** Final inspection and test of cardiopulmonary function test equipment in class I (93/42/EEC Annex VI Section 3.2 - Product quality assurance)

**Manufacturer:**

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**Your distributor:**

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