

MicroLab

The world's most versatile
portable Spirometer

Micro Medical



With research grade gold standard transducer

A next generation Spirometer designed for the professional

Developed specifically for the professional, the next generation MicroLab employs Micro Medical's acclaimed precision Gold Standard Digital Volume Transducer which is especially suited to measuring very low flow rates in patients with COPD.

The MicroLab has a class-leading, very high definition paper-white screen and can display both Volume/Time and complete Flow/Volume Loops (using either the open or closed loop test techniques). The instrument can measure up to 36 spirometry parameters and has a database storage capacity for over 1000 patients. A built-in high resolution printer quickly delivers hard copy results however A4 sized printouts are possible direct (via Hewlet Packard or Canon printers – compatible models specified by Micro Medical).

A new child incentive graphical display is featured and an optional Airway Resistance measurement module is offered.

A comprehensive range of advanced features normally only seen on more expensive laboratory based equipment are included (see features and specifications).

**The next generation of portable precision
Spirometers are here – NOW !**

MicroLab Cat. No. ML3500

- *High resolution printer*
- *Text entry, enabling comment writing*
- *Internationally recognised on-screen test quality assurance prompts for poor test attempts (e.g. slow start, abrupt end etc.)*
- *Bronchodilator and/or steroid assessment*
- *Predicted value and language selection*
- *Body mass index and dyspnoea score calculation*
- *Lung age assessment and algorithmic result interpretation by BTS or Enright*
- *Fully customisable printout format*
- *Complete with all accessories in a sturdy carry case*



Text and number
entry keys

GOLD STANDARD



Setting new standards in spirometry

The new Gold Standard transducer from Micro Medical gives you accurate measurements for your Asthma and COPD patients.

Especially effective at low flows, it complies with all current ATS standards for accuracy. This means that Micro Medical's world beating spirometers give you accurate respiratory measurement - bar none.

Digital Volume Transducer Spirometers are NOT ALL THE SAME

device

Built-in internationally recognised test quality prompts

Audio alarm

High visibility paper white screen

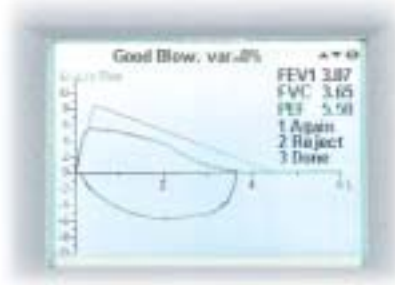
Screen navigation keys

Rechargeable battery indicator light

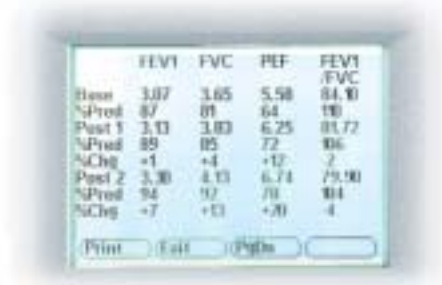
you the most precise volume and flow

S and other recognised international standards
Spirometers are the definitive benchmark for

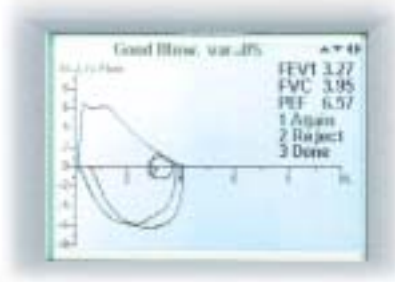
THE SAME.



1. Open loop spirometry



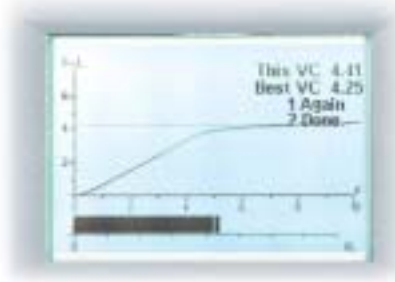
6. Comprehensive results screen



2. Closed loop spirometry



7. Patient entry screen



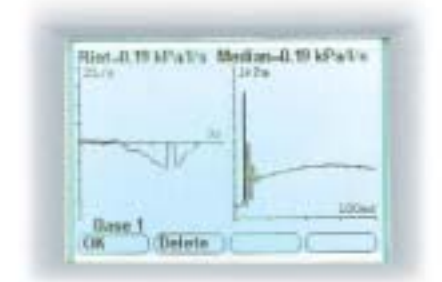
3. Relaxed inspiratory/expiratory vital capacity



8. Airways resistance results screen (MicroRint)



4. Simple parameter selection



9. Airways Resistance waveform results (MicroRint)



5. Easy system customisation



A simple test to measure airway resistance

Now available for MicroLab is the optional MicroRint module for the easy measurement of airway resistance.

Micro Medical's unique design has taken a hitherto specialised measurement out of the pulmonary function laboratory and into the clinic or home.

MicroRint enables airway resistance to be measured with the same ease as peak flow but without effort or technique from the patient. The subject simply breathes passively through a mouthpiece or facemask. The result is automatically computed and displayed against predicted normal values. The procedure, that can be performed on neonates to adults, takes only a few minutes.

In this method airway resistance is determined by a momentary interruption to flow (Q) in the airways. At this point alveolar pressure (P_a) equilibrates with the pressure in the airways and the mouth (P_{aO}) and airway resistance ($kPa/1/s$) is calculated from P_{aO}/Q (pressure/flow).

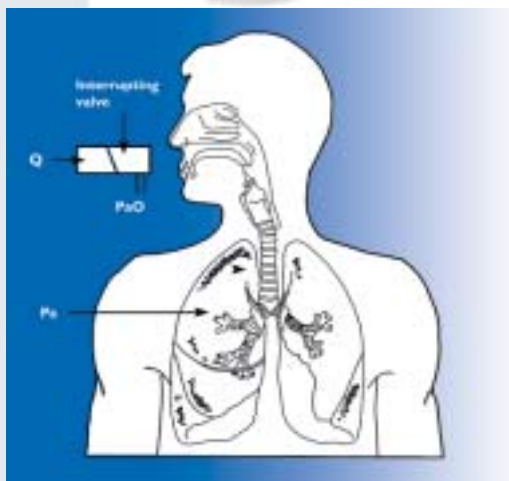
Results using MicroRint correlate well with other airway resistance methods and with other measurements of lung function such as FEV₁.

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MicroRint Module Cat. No. MRT6000

- Rechargeable battery or mains usage
- Bacteriological viral filters to eliminate cross infection fears
- Predicted values with pre-and post-bronchodilator analysis
- Configurable measurement methodology
- 1000+ test memory with results printout direct to Canon or Hewlett Packard printers – compatible models specified by Micro Medical
- Software programme included for results upload to PC



Spida 5

Advanced, user-friendly Spirometry PC software

Micro
Medical

As an option to MicroLab we can offer Spida 5 a 32-bit PC based Spirometry software package. With a very user-friendly, modern multi-window, visual interface and many new advanced features. Up to 41 spirometry parameters are measurable. Closed loop test technique and the overlaying of previous curves for comparison are now possible. Extensive search facilities and powerful comparative and long term trending of results are only some of the features.

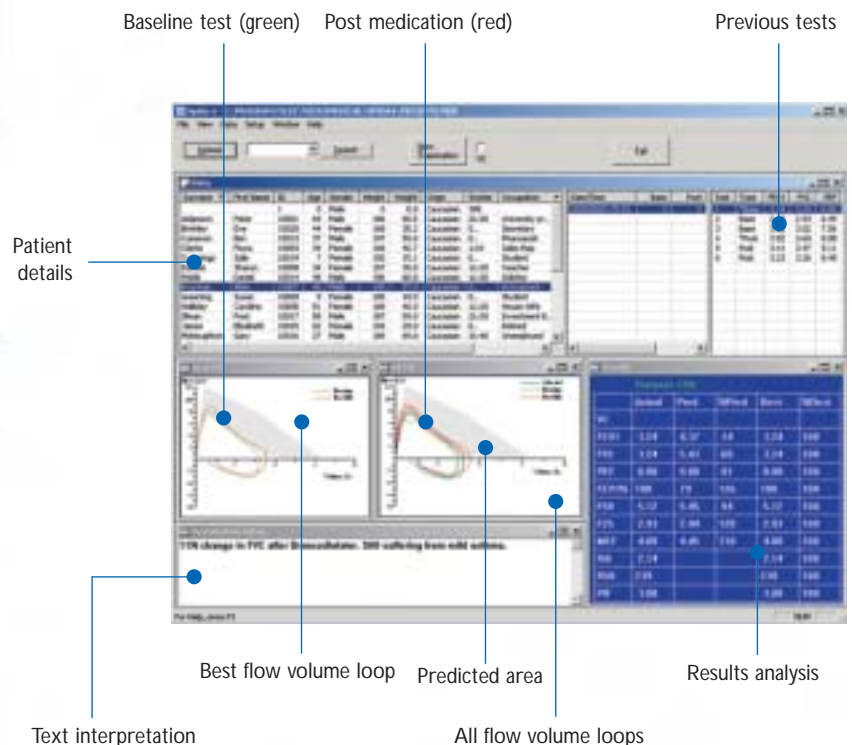
Spida 5 will connect with the SMS text entry keypad versions of MicroLab (ML3500) MicroLoop (ML3535) and the Gold standard transducer versions of MicroGP (MS07) MicroDL (MS08) MicroDiaryCard (MD02), and MicroPlus (MS03).

Spida 5 is compatible with Microsoft Windows 95, 98, 2000, Me, XP and NT providing the system requirements are adhered to (see below).

To know more about Spida 5
please visit www.micromedical.co.uk

PC System requirements

- Pentium processor or higher
- 32 MB RAM
- 4 MB hard disc space
- One free serial port
- Micro Medical Spirometry serial cable



Spida 5 Cat. No. SD5000

- Multi-window layout is extremely easy and fast to use
- Animated child incentive display
- Real-time Flow/Volume and Volume/Time traces
- Open and closed Flow/Volume loop test technique is possible
- Overlaying of previous test curves for comparison
- Long term trending facility
- Lung age calculation and textual interpretation
- Powerful search capability
- Up to 41 spirometry parameters can be measured
- Can be easily linked to other patient journal or GP administration systems, occupational health systems or other medical databases
- Configurable printout format

Specifications

Spirometry

Measurements: VC, FEV_{0.75}, FEV₁, FEV₃, FEV₆, FVC, PEF, FEV_{0.75}/VC, FEV_{0.75}/FVC, FEV₁/VC, FEV₁/FVC, FEV₃/VC, FEV₃/FVC, FEV_{0.75}/FEV₆, FEV₁/FEV₆, MEF75, MEF50, MEF25, MEF25-75, FEF50/VC, FEF50/FVC, MVV_{end}, FET, MET, IC, FIV₁, FIVC, PIF, FIV₁/FIVC, FIF25, FIF50, FIF75, FIF50/MEF50, V_T, ERV, IRV [all expiratory measurements with baseline, post bronchodilator 1 and 2, % predicted, % change and normal range]

Tests per subject: VC-unlimited (best reported) FVC-unlimited (best 3 from baseline, post 1 and post 2 tests)

Predicted Values: Various – depends upon national preference

Transducer: Micro Medical Gold Standard Bi-Directional Digital Volume

Resolution: 10ml volume 0.03l/s flow

Accuracy: +/-3%. To ATS recommendations – Standardisation of spirometry 1994 update for flows and volumes

General

Storage : 1000 patients' tests including Flow/Volume loops and Volume/Time curves

Printer Output: 320 dot internal thermal printer, or serial output for all IBM Proprinter compatible Canon bubble jet printers e.g. BIC250, BIC4400, BIC80 and BIC50, and all PLC3 compatible Hewlett Packard printers e.g. Deskjet 420, 695, 340, 880C and 895Cxi

Display: High resolution graphic LCD 240x160 pixels

Power Supply: 100 – 240V 0.3A 47 – 63Hz. DC output 9V 0.8A

Battery Pack: Rechargeable NiCad 7.2V 600mA/hours

Dimensions: 150 x 251 x 40 mm. Transducer 50 x 60 x 90mm

Weight: Unit weight 0.75kg. Packed weight 2.55kg

Temperature: 0° to +40° C

Operating

Humidity: 30% to 90% RH

Storage Temperature: 0° to +70° C

Storage Humidity: 10% to 90% RH

Bibliography

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3 Pollard AJ, Mason NP, Barry PW, Pollard RC, Collier DJ, Fraser RS, Miller MR, Milledge JS. Effect of altitude on spirometric parameters and the performance of peak flow meters. Thorax 1996;51:175-178.

4 Godschalk, L, Brackel HIL, Peters JCK, Bogaard JM. Assessment of accuracy and applicability of a portable electronic diary card Spirometer for Asthma treatment. Respiratory Medicine, 1996;90:619-622.

5 Morris JF, Temple W. Spirometric 'Lung Age' estimation for motivating smoking cessation. Preventative Medicine, 1995;14 655-662.

6 BTS Guidelines for the management of Chronic Obstructive Pulmonary Disease (The COPD Guidelines Group of the Standards of Care Committee of the BTS) Thorax 1997;53 (Suppl 5):S4-6.

The MicroLab (Cat. No. ML3500) is part of an extensive range of respiratory monitoring equipment manufactured by Micro Medical Ltd.

Micro Medical Ltd pursues a policy of continuing improvement in design, production and performance of its products. The right is therefore reserved to vary details at any time and without notice.

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