

Innovation in Spirometry Oximetry Telemedicine



MIR Group Organization

MIR Medical International Research

(Headquarters)

Rome - ITALY

Research & Development

Designing

Marketing

Warehouse

Distribution (Worldwide)

MIR PRODUCTION Teramo - ITALY

Warehouse Assembling Testing

MIR SERVICE Rome – ITALY

Quality Control Service

MIR Medical International Research USA, Inc. Winsconsin – USA

Warehouse Distribution (US Market) Service

MIR FRANCE (Partnership) Montpellier – FRANCE

Distribution (France and North Africa)
Service







About MIR

MIR is a global medical device company founded in 1993, and today is present in more than 93 countries worldwide.

For more than 20 years the company has been internationally recognized for its numerous innovations and advancements in three different market areas: Spirometry, Oximetry and Telemedicine.



MIR offers advanced technological solutions and manufactures accurate and reliable medical instruments which have become milestones in Pulmonary Function Screening and Clinical Trials.



reddot design award

One of the distinctive features of the MIR products is their exclusive design which has been awarded repeatedly at an international level with the prestigeous Reddot design award.



The cornerstone of our Spirometry technology is the FlowMIR the first and only internationally patented DISPOSABLE TURBINE.



Spirometry

Oximetry

The new range of MIR products meet the needs of clinicians, physicians and patients. In addition to connecting to PC-Windows via USB and Bluetooth®, MIR provides the ability to connect to Tablets and Smart Phones, an ideal solution for customers who wish to use these technologically advanced devices combined with our diagnostic instruments.

MIR is able to provide customizable solutions and tools which empower systems integrators involved in Home Care and Clinical Trials projects.



FlowMir[®]

Disposable Turbine Flowmeter MIR exclusive product International patent

Each turbine, which includes a cardboard mouthpiece, has been individually factory tested with a computerized system

It comes standard in a dispenser of 50 pcs

FlowMIR® is an inexpensive alternative to a costly reusable flowmeter and replaces the need for an antibacterial filter

A full Spirometry session can be performed, including a Bronchial Challenge and POST Bronchodilator test

For each patient, after the Spirometry test, both turbine and mouthpiece are thrown away

Two types of turbine flowmeters available:



MIR Disposable Turbine



MIR Reusable Turbine

The reusable turbine is manufactured with high-tech materials - including special alloys and synthetic sapphires - for durability while retaining the features of reproducibility and accuracy even after many years of use



Comfortable Packaging



No Antibacterial Filter



Singularly Tested and Packed



Always 100% accurate and hygienic



Eliminates staff clean-up time



ATS/FRS Compliant for accuracy



No Sterilisation



Not affected by Vapour Not affected by Condensation



No Calibration



Ambient conditions





The Best Sensor for Spirometry



Spirolab®

7 inch Touchscreen All in one portable Desktop Spirometer with Oximetry option

Wireless Real Time test on PC via Bluetooth®



always present on the screen

Database up to 10,000 Spirometry tests or 900 hours of Oximetry recording coupled with powerful and flexible search services

Fast and silent built-in printer with customizable printout format

Long life Rechargeable Battery



Optional function available:

Oximeter with adult or paediatric finger probe



Available with both DISPOSABLE or REUSABLE turbine flowmeter



Spirometry test:

FVC, VC, IVC, MVV, PRE/POST Bronchodilator comparison with a wide range of selectable parameters



Always included:

- Elegant and robust carrying case
- Winspiro PRO[®] PC software with free update



MIR exclusive patent:

Paediatric incentive system directly on the screen, helpful to improve patient compliance during a Spirometry test

Spirometry parameters

FVC, FEV1/FVC, FEV1/VC, PEF, FEF25, FEF50, FEF75, FEF25–75, FEF75–85, Lung Age, Extrap. Volume, FET, Time to PEF, FEV0.5, FEV0.5/FVC, FEV0.75, FEV0.75/FVC, FEV2, FEV2/FVC, FEV3, FEV3/FVC, FEV6, FEV1/FEV6, FEV1/FEV0.5, FIV1, FIV1/FIVC, PIF, FIF25, FIF50, FIF75, FEF50/FIF50, VC, IVC, IC, ERV, IRV, Rf, VE, VT, t_h , t_e / t_{TOT} , MVV (measured), MVV (calculated)

Oxymetry parameters (Optional)

%SpO2 and Pulse Rate (Min, Max, Average), Test duration, Total SpO2 Events, T90% (SpO2 time ≤89%), T89% (SpO2 time ≤88%), T40 (Bradycardia duration with Pulse Rate <40 BPM), T120 (Tachycardia duration with Pulse Rate >120 BPM)



Spirodoc[®]

4 in One: Touchscreen Spirometer, 3D Oximeter®, Triaxial Accelerometer and eDiary

Wireless Real Time test on PC via Bluetooth®



Long life Rechargeable Battery

Unique feature: can be configured for both Doctor's Office or for Patient Home use



Always included: Winspiro PRO® PC software with free update



Optional function available:

Oximeter with adult or paediatric finger probe



Available with both DISPOSABLE or REUSABLE turbine flowmeter



Spirometry test:

FVC, VC, IVC, MVV, PRE/POST Bronchodilator comparison with a wide range of selectable parameters



Fully featured stand alone Oximeter



eDiary with on-screen Symptoms entry



Optional function available:

3D Oximeter® with adult or paediatric finger probe including device holder with belt for easy Sleep test Desaturation Analysis, 6 Minute Walk Test and daytime Physical Activity Measurement coupled with Desaturation Events

Spirometry parameters

FVC, FEV1, FEV1/FVC, FEV1/VC, PEF, FEF25, FEF50, FEF75, FEF25-75, Lung Age, Extrap. Volume, FET, FEV3, FEV3/FVC, FEV6, FEV1/FEV6, FIVC, FIV1, FIV1/FIVC, PIF, VC, IVC, IC, ERV, Rf, VE, VT, $t_{\rm l}, t_{\rm E}, {\rm VT/}t_{\rm l}, t_{\rm E}/t_{\rm TOT}, {\rm MVV}$ measured, MVV calculated

6 Minute Walk Test (specific parameters)

O2-Gap, Estimated Distance, Walked Distance, Predicted Distance (Min, Standard), $T\Delta 2\%$ (SpO2 $\geq 2\%$), $T\Delta 4\%$ ($\Delta SpO2\geq 4\%$), Time (Rest, Walking, Recovery), Desaturation Area/Distance Optional data entry: Borg Dyspnea (Baseline, End, Change), Borg Fatigue (Baseline, End, Change), Arterial blood pressure (Systolic, Diastolic), Oxygen administered

Main Oximetry parameters

SpO2 and Pulse Rate (Baseline, Min, Max, Average), T90% (SpO2<90%), T89% (SpO2<89%), T88% (SpO2<88%), T5% (ΔSpO2>5%), ΔIndex (12s), SpO2 Events, Pulse Rate Events (Bradycardia, Tachycardia), Step counter, Physical Activity (VMU), Recording time, Analysis time

Sleep analysis (specific parameters)

Body position, SpO2 Events, Desaturation Index (ODI), Desaturation (Mean Value, Mean duration, Longest duration, Nadir Peak), ΔSpO2 (Min Drop, Max Drop), Total Variations, Pulse Rate Index, NOD89% (SpO2<89%; >5min), NOD4% (SpO2 Basale-4%; >5min), NOD90% (SpO2<90%; Nadir<86%; >5min)



Spirobank II®

Accurate, Complete and Easy to use Spirometer with Oximetry option

4 versions available: Smart, Basic, Advanced and Advanced plus

On screen results and curves preview for immediate data assessment

Wireless Real Time test on PC via Bluetooth®



Memory up to 10.000 Spirometry tests or 900 hours of Oximetry recording

Long life Rechargeable Battery

Optional functions available: see attached table



Always included: Winspiro PRO® PC software with free update



Available with both DISPOSABLE or REUSABLE turbine flowmeter



Spirobank II Smart Edition with embedded Bluetooth Low Energy module now available including new iSpirometry App for iPad



Basic version available with USB connectivity

Main spirometry parameters available on Smart version using new iSpirometry App FVC, FEV1, FEV1/FVC%, PEF, FEF25-75

Optional Oximetry parameters available on Smart version using new iOximetry App %SpO2 and Pulse Rate (Min, Max, Average)

Main Spirometry parameters available on Basic, Advanced and Advanced plus version FVC, FEV1, FEV1%, PEF, FEF25-75, FET, Extrap. Volume, Lung Age, VC, IVC, IC, ERV

Additional Spirometry parameters available on Advanced and Advanced plus version FVC, FEV1, FEV1/FVC, FEV1/VC, PEF, FEF25, FEF50, FEF75, FEF25-75, FEF75-85, Lung Age, Extrap. Volume, FET, Time to PEF, FEV0.5, FEV0.5/FVC, FEV0.75, FEV0.75/FVC, FEV2 FEV2/FVC, FEV3, FEV3/FVC, FEV6, FEV1/FEV6, FIVC, FIV1, FIV1/FIVC, PIF, FIF25, FIF50, FIF75, FEF50/FIF50, VC, IVC, IC, ERV, IRV, Rf, VE, VT, $t_{\rm l}$, $t_{\rm E}$, VT/ $t_{\rm l}$, $t_{\rm E}$ / $t_{\rm TOT}$, MVV (measured), MVV (calculated)

Oximetry parameters available on Advanced and Advanced plus version

%SpO2 and Pulse Rate (Min, Max, Average), Test duration, Total SpO2 Events, T90% (SpO2 time ≤89%), T89% (SpO2 time ≤88%), T40 (Bradycardia duration with Pulse Rate <40 BPM), T120 (Tachycardia duration with Pulse Rate > 120 BPM)

	Smart	Basic	Advanced	Advanced plus
iPad Software	~	_	_	_
PC Software	~	~	~	~
High resolution display	~	~	~	~
Traffic light indicator	~	~	~	~
Main Spirometry parameters	~	~	~	~
Additional Spirometry parameters	**	_	~	~
POST Bronchodilator test	~	~	~	~
Bluetooth Smart	~	_	_	_
Bluetooth 2.1	_	_	~	~
Oximeter	0	_	0	~
Battery charger	0	_	0	~



Bluetooth® wireless communication



Spirotel[®]

4 in One for Home use: Touchscreen Spirometer, 3D Oximeter[®], Triaxial Accelerometer and eDiary

3D Oximeter® with triaxial accelerometer allows to correlate SpO2 Desaturation Events, patient Physical Activity and Body Position during data recording

The best solution for remote management in Asthma, COPD, Cystic Fibrosis and Lung Transplant.

Ideal for Clinical Trials with customizable protocols

Long life Rechargeable Battery



Optional function available: 3D Oximeter® with adult or paediatric finger probe; Bluetooth module, GSM module



Always included: Winspiro PRO® PC software with free update



On screen Plethysmographic Curve

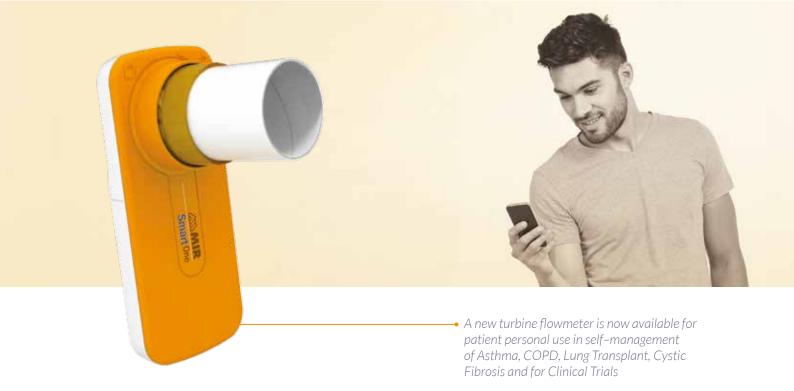


Customizable eDiary





Large selection of languages



Smart One

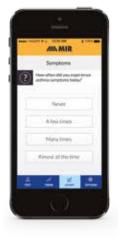
Peak Flow and FEV1 on your Smart Phone

Smart One is a new powerful revolutionary product around which new Apps for Smart Phone and Tablet are continuously developed. Please ask one of our sales representatives for customizable protocols and Apps available on request for special applications, innovative projects and Clinical Trials.

Comes with standard App to measure PEF and FEV1 on iPhone including a MIR patented incentive for both adult and children

Bluetooth® Smart connectivity for easy integration in third party platforms











Minispir[®]

Computer-based Spirometer with Oximetry option

Real time Flow/Volume and Volume/Time curves with PRE/POST Bronchodilator comparison on your PC using Winspiro PRO® software

Includes a wide range of selectable parameters

Spirometry test interpretation

Embedded Temperature sensor for BTPS conversion



Always included: Winspiro PRO[®] PC software with free update



Optional function available: Oximeter with adult or paediatric finger probe



Available with both DISPOSABLE or REUSABLE turbine flowmeter



Spirometry test: FVC, VC, IVC, MVV, PRE/POST Bronchodilator comparison with a wide range of selectable parameters

Minispir Light®

Simplified Computer-based Spirometer

Real time Flow/Volume and Volume/Time curves on your PC using Winspiro Light® software

COPD and Asthma screening have never been so intuitive and inexpensive

Includes a wide range of selectable parameters

Spirometry test interpretation

Embedded Temperature sensor for BTPS conversion



Always included: Winspiro Light[®] simplified PC software with free update



Optional function available: POST Bronchodilator software feature



Available with DISPOSABLE turbine flowmeter



Spirometry test: FVC, VC, IVC.

Minispir® parameters

Spirometry parameters

FVC, FEV1, FEV1/FVC, FEV1/VC, PEF, FEF25, FEF50, FEF75, FEF25–75, Lung Age, Extrap. Volume, FET, FEV3, FEV3/FVC, FEV6, FEV1/FEV6, FIVC, FIV1, FIV1/FIVC, PIF, VC, IVC, IC, ERV, Rf, VE, VT, $t_{\rm h}$, $t_{\rm e}$ / $t_{\rm tot}$, MVV

Oximetry parameters (optional)

%SpO2 and Pulse Rate (Min, Max, Average), T90% (SpO2<90%), T89% (SpO2<89%), T88% (SpO2<88%), T5% (ΔSpO2>5%), Δ Index (12s), SpO2 Events, Pulse Rate Events (Bradycardia, Tachycardia)

Minispir Light[®] parameters

Spirometry parameters

FVC, FEV1, FEV1%, FEV6, PEF, FEF25-75, FIVC, Lung Age, VC, IVC



Spirobank G[®]

Accurate, complete and easy to use Spirometer

On screen results and curves preview for immediate data assessment

Wireless Real Time test on PC via Bluetooth®



Memory up to 6,000 Spirometry tests

Lightweight and slim

An ideal solution for healthcare professionals

Free internal software upgrades available online



Always included: Winspiro PRO® PC software with free update



Available with both DISPOSABLE or REUSABLE turbine flowmeter



Spirometry test: FVC, VC, IVC, MVV, PRE/POST Bronchodilator comparison

Spirobank USB®

Intuitive and simple COPD and Asthma screener with PDF file generator

Performs a diagnostic test in 3 simple steps:

- Complete a stand-alone Spirometry session
- Plug the USB cable into your PC
- Print the 3 best test report in PDF format

Spirobank USB® can identify asymptomatic patients at risk of COPD and Asthma at an early stage facilitating better clinical outcomes

Intuitive, reliable and highly accurate

Can be used by clinicians as well as non-respiratory professionals



Always included: Winspiro Express® PDF file generator for PC with free update



Available with both DISPOSABLE or REUSABLE turbine flowmeter



Spirometry test: FVC, VC, IVC.

Spirobank G[®] parameters

Spirometry parameters

FVC, FEV1, FEV1/FVC, FEV1/VC, PEF, FEF25, FEF50, FEF75, FEF25-75, Lung Age, Extrap. Volume, FET, FEV3, FEV3/FVC, FEV6, FEV1/FEV6, FIVC, FIV1, FIV1/FIVC, PIF, VC, IVC, IC, ERV, FEV1/VC, Rf, VE, VT, t_I , t_E , VT/ t_I , t_E / t_{TOT} , MVV

Spirobank USB[™] parameters

Spirometry parameters

FVC, FEV1, FEV6, PEF, FEV1/FVC, FEF25-75, FIVC, Lung Age, VC, IVC



Spirolab III®

Portable Desktop Spirometer with Oximetry option

Wireless Real Time test on PC via Bluetooth®



Full alphanumeric keyboard with icon based function keys for intuitive use

Database up to 6,000 Spirometry tests or 400 hours of Oximetry recording coupled with powerful and flexible search services

Fast and silent built-in printer with customizable printout format

Long life Rechargeable Battery



Optional function available:

Oximeter with adult or paediatric finger probe



Spirometry test:



FVC, VC, IVC, MVV, PRE/POST Bronchodilator comparison with a wide range of selectable parameters

Available with both DISPOSABLE or REUSABLE turbine flowmeter



Always included:

- Elegant and robust carrying case
- Winspiro PRO® PC software with free update



MIR exclusive patent:

Paediatric incentive system directly on the screen, helpful to improve patient compliance during a Spirometry test

Spirometry parameters

FVC, FEV1, FEV1/FVC, FEV1/VC, PEF, FEF25, FEF50, FEF55, FEF25-75, Lung Age, Extrap. Volume, FET, FEV3, FEV3/FVC, FEV6, FEV1/FEV6, FIVC, FIV1, FIV1/FIVC, PIF, VC, IVC, IC, ERV, Rf, VE, VT, t₁, t₂, VT/t₁, t₂/t₇₀₇, MVV (measured), MVV (calculated)

Oxymetry parameters (Optional)

%SpO2 and Pulse Rate (Min, Max, Average), Test duration, Total SpO2 Events, T90% (SpO2 time ≤89%), T89% (SpO2 time ≤88%), T40 (Bradycardia duration with Pulse Rate <40 BPM), T120 (Tachycardia duration with Pulse Rate >120 BPM), Rapid Desaturation Analysis > 2,5 min. (ODI), Prolonged Desaturation Analysis < 5 min. (NOD), % Bradycardia Duration (<40 BPM), % Tachycardia Duration (>120 BPM), % of Time with SpO2 ≤ 90%, T90%, T89%, T88%, T87%

MIR Software

MIR is world recognized for a wide range of software packages for specialists in respiratory illnesses, doctors and patients.

In order to best satisfy the numerous needs of customers, MIR's R&D team has developed a large number of software solutions. Please ask one of our sales representatives for customizable protocols and Apps available on request for special applications, innovative projects and Clinical Trials.

All MIR software are supplied with the guarantee of **free** update.

Professional software solutions for spirometry and oximetry



iOS based

Simple and intuitive App for Spirometry and Oximetry test directly on your iPad and iPad mini.



Winspiro PRO® and Winspiro Net®

Windows based

Complete and powerful software package for Specialists. Includes Telemedicine and Home Care Management.



Windows based

Measure, visualize and transfer test results.

The perfect solution for direct integration of Spirometry and Oximetry test on your existing Electronic Medical Record.

Basic software solutions for spirometry



Winspiro Light®

Windows based

Simple and intuitive for essential Spirometry test.



Winspiro Express®

Windows hased

PDF Spirometry report generator.



iOS based

iSpirometry[®] & iOximetry[®]

Simple and intuitive App for Spirometry and Oximetry test directly on your iPad

iOS based App for Real Time Spirometry and Oximetry on your Tablet

Innovative, easy to use, and powerful App that includes data transfer to a cloud system for backup or second opinion facility

Ideal for primary care

iSpirometry and iOximetry are new powerful Apps for Smart Phones and Tablets.

Please ask one of our sales representatives for customizable protocols and Apps available on request for special applications, innovative projects and Clinical Trials.





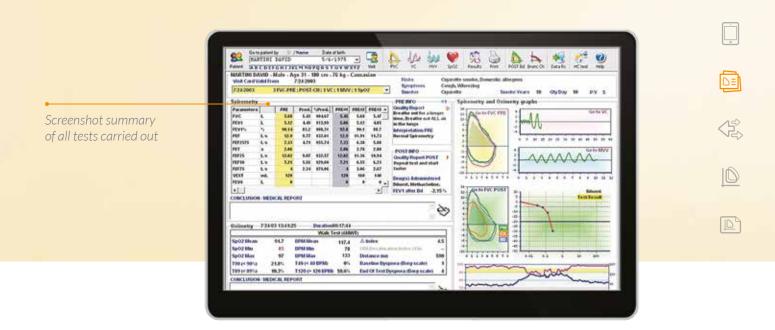
MIR exclusive patent:

Paediatric incentive system directly on the screen, helpful to improve patient compliance during a Spirometry test





iSpirometry® and iOximetry® is an App for iPad and iPad mini, and free updates are guaranteed. The App is provided on request with the Smart version of Spirobank II®, which is the MIR device that comes with embedded Bluetooth® \$\mathbb{\center}\$ Low Energy



Windows based

Winspiro PRO & Winspiro PRO NET®

Complete and powerful software package for Specialists Includes Telemedicine and Home Care Management

Winspiro PRO®

Customizable PC software for Spirometry, Oximetry and Telemedicine projects

FVC, VC, IVC, MVV, Bronchodilator Reversibility, Bronchial Challenge with FEV1–response curve with protocols for both Methacholine and Mannitol

Paediatric Incentive for Spirometry

Home Care and Telemedicine management

Quanjer 2012-GLI Predicted values with LLN and Z-score

Patient Trend Charts for easy follow-up

Search engine for instant access to data

Specialized and customizable Printout

Wide choice of communication protocols ... and more

3D Oximeter® management, O2Gap Index,

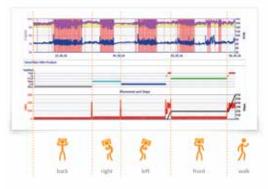
Sleep Desaturation Analysis, 6 Minute Walk Test, Daytime Physical Activity Report coupled with Desaturation Events

Winspiro PRO NET®

Network version of Winspiro PRO® PC software for Spirometry, Oximetry and Telemedicine

Complements the features of the client version, by providing the capability to share a single Database between different Network users

Sleep test



Events and Body Position recording

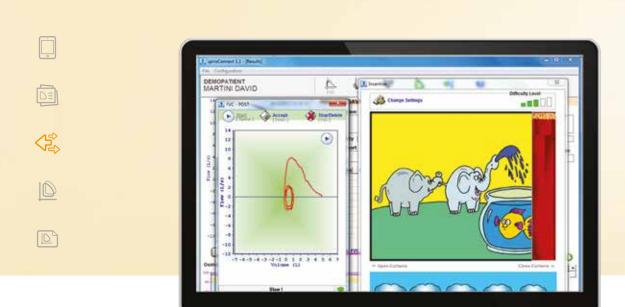
6 Minute Walk Test (6MWT)



Events and Physical Activity recording

Winspiro PRO NET® includes free updates, and is provided on request.

Winspiro PRO[®] is compatible with Windows: XP, VISTA, 7 and 8 Winspiro PRO[®], it includes free updates, and is provided with Spirolab, Spirodoc, Spirobank II, Spirotel, Minispir, Spirobank G, Spirolab III



Windows based

Spiro Connect

Measure, visualize and transfer test results. The perfect solution for direct integration of Spirometry and Oximetry test on your existing Electronic Medical Record

PC software for direct integration with EMR

Innovative and simple to use tool to integrate a Real Time Spirometry and Oximetry test with an Electronic Medical Record (EMR) or a Medical Practice Management software

Spiro Connect performs tests as a Slave systems and is Database-less, therefore it is no longer necessary to duplicate the patient's information

The essential patient data (age, height, gender, ethnicity) is sent just-in-time by the Master and is kept by Spiro Connect until medical test outcomes are sent back

Complete set of results is provided including main measured parameters, predicted values and graphic images for an easy integration process

Standardized communication in HL7 or Exchange Protocol

Detailed documentation on request and online support for all systems integrators

Spiro Connect is provided on request for special projects

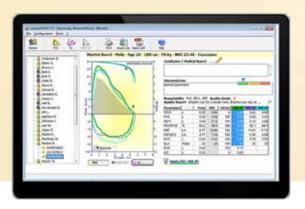












Windows based

Winspiro Light®

Simple and intuitive for essential Spirometry test

Software for Real Time Spirometry on your PC

Simple and intuitive user interface with one main screen with all functions available

Ideal for primary care and occupational medicine

For each session produces a report with the 3 best tests including both Flow/Volume loop and Volume/Time curves that can be exported in .DOC or .PDF format

Wide range of selectable predicted values



Winspiro Light[®] includes free updates and is provided with Minispir Light[®] Spirometer



Optional function available: POST Bronchodilator software feature

Windows based

Winspiro Express®

PDF Spirometry report generator

Produces a report with the 3 best tests in .PDF format

Once a Spirometry test has been carried out the outcomes can be transferred via USB to the PC for printout and storage

For each session produces a complete report that includes both Flow/Volume loop and Volume/Time curves

Wide range of selectable predicted values



Winspiro Express[®] includes free updates and is provided with Spirobank[®] USB Spirometer

Winspiro Light parameters

Spirometry parameters FVC, FEV1, FEV1%, FEV6, PEF, FEF25–75, FIVC, Lung Age, VC, IVC

Winspiro Express parameters

Spirometry parameters FVC, FEV1, FEV6, PEF, FEV1/FVC, FEF25–75, FIVC, Lung Age, VC. IVC



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