

English



Innovation in Spirometry Oximetry Telemedicine

www.spirometry.com
www.mirsmartone.com



Global spirometer market: company share analysis (%)*

*MIR distributes its products in 93 countries and it has been ranked among the top 5 spirometry major players in the world!
It's second in terms of global market share (16.3%)
It's third by geography in Europe and Asia-Pacific and fourth in North America.*



*** Sources (2015):**

Global Spirometry Market, Analysis and Forecast to 2020
Secondary Research, Company Annual Reports, Press Releases



**INTERNATIONAL
PATENT**



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 60 pcs or of 10 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



FlowMIR Dispensers (10 and 60 pcs)



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



Singularly Tested and Packed



Eliminates staff clean-up time



No Sterilisation



No Calibration



No Cross Contamination



No Antibacterial Filter



Always 100% accurate and hygienic



ATS/ERS Compliant for accuracy



Not affected by Vapour Condensation



Not affected by Ambient conditions



The Best Sensor for Spirometry



Each function can be activated by a simple touch on the intuitive bar menu always present on the screen

Spirolab[®] Bluetooth[®]

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

Wireless Real Time test on PC via Bluetooth[®]

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



Always included:

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

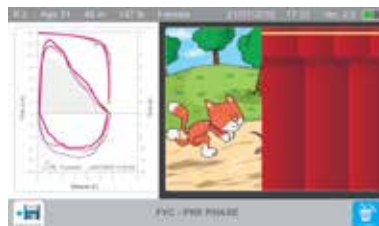


Optional function available:
Oximeter with adult or paediatric finger probe

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

Direct connection to an external USB printer



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, 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/PEF, FEV1/FEV0.5, FIVC, FIV1, FIV1/FIVC, PIF, FIF25, FIF50, FIF75, FEF50/FIF50, VC, IVC, IC, ERV, IRV, Rf, VE, VT, t_i, t_E, VT/t_i, t_E/t_{TOT}, MVV measured, MVV calculated

Oximetry parameters

only available with oximetry option (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)



Minispir[®]

Computer-based
Spirometer



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



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[®] 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_i, t_E, VT/t_i, t_E/t_{TO}, MVV

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



Function available: POST Bronchodilator software feature



Available with DISPOSABLE turbine flowmeter



Spirometry test: FVC, VC, IVC

MINISPIR LIGHT[®] PARAMETERS

Spirometry parameters

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



Detachable flowmeter head to facilitate Oximetry test during 6 Minute Walk Test

Spirodoc® Bluetooth®

Touchscreen Spirometer and 3D Oximeter®: 6MWT, Sleep test, 24h SpO2 Holter

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



Fully featured stand alone Oximeter



eDiary with on-screen Symptoms entry



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



Optional function available:

3DOXIMETER®

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 (24h SpO2 Holter)

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, ti, tE, VT/ti, tE/tTOT, MVV measured, MVV calculated

6 Minute Walk Test (specific parameters)

O2-Gap, Estimated Distance, Walked Distance, Predicted Distance (Min, Standard), TΔ2% (SpO2≥2%), TΔ4% (ΔSpO2≥4%), Time (Rest, Walking, Recovery), Desaturation Area/Distance Optional dataentry: BorgDyspnea(Baseline,End,Change), BorgFatigue(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)



New Spirobank II®

3 versions available: Smart, Basic and Advanced

S B A KEY COMMON FEATURES

PRE and POST Bronchodilator comparison

Spirometry test interpretation

Embedded Temperature sensor for BTPS conversion

Traffic light health indicator, for immediate test interpretation

Memory up to 10.000 Spirometry tests or 900 hours of Oximetry (if available) recording coupled with powerful and flexible search services

Rechargeable, long-life battery

Backlit, high-resolution display, with on-screen results and curves preview for immediate data assessment

S **SPIROBANK II® SMART**
Spirometer with Oximetry option for iPad



The road to Smart spirometry is now open!



Spirometry report



Virtual Assistant

S

An expert beside you

One of the limitations to the spread of spirometry is the necessary compliance of the patient during testing and the difficulty of interpretation. Through a simple tap, the App of **Spirobank II Smart** provides an highly innovative **Virtual Assistant** which supports the operator before, during and after the spirometry test

Spirometry Parameters (Stand Alone)

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

Oximetry Parameters (Stand Alone)

%SpO2 [Baseline, Min, Max, Mean], Pulse Rate [Baseline, Min, Max, Mean]

Spirometry Parameters (On the App)

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

Oximetry Parameters (On the App)

%SpO2 [Baseline, Min, Max, Mean], Pulse Rate [Baseline, Min, Max, Mean]

Pediatric Incentive Animations

Sharing is caring

The App creates files which can be easily printed, sent via Email or uploaded into an EHR for future reference

Spirometry Parameters (PC Based)

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, tl, tE, VT/ tl, tE/tTOT, MVV (measured), MVV (calculated)

Oximetry Parameters (PC Based)

SpO2 [Baseline, Min, Max, Mean], Pulse Rate [Baseline, Min, Max, Mean], T90, T89, T88, T5 , Index [12s], SpO2 Events, Pulse Rate Events

B

SPIROBANK II® BASIC

Accurate, Simplified Spirometer



Ideal for family doctors, primary care, occupational medicine, screening

Can operate both in stand-alone mode, and connected to PC via USB

Spirometry Parameters (Stand Alone)

FVC, FEV1, FEV1%, PEF, FEF25-75, FET, Extrap. Volume, Lung Age, VC, IVC, IC, ERV

Spirometry Parameters (PC Based)

FVC, FEV1, FEV1%, PEF, FEF25-75, FET, Extrap. Volume, Lung Age, VC, IVC, IC, ERV

A

SPIROBANK II® ADVANCED

Spirometer with Oximetry Option



Portable minilab for pulmonologists and respiratory therapists

Can operate both in stand-alone mode, and connected to PC wireless via Bluetooth® 2.1 or USB

Spirometry Parameters (Stand Alone)

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, tl, tE, VT/ tl, tE/tTOT, MVV (measured), MVV (calculated)

Oximetry Parameters (Optional in Stand Alone mode)

SpO2 [Baseline, Min, Max, Mean], Pulse Rate [Baseline, Min, Max, Mean], T90, T89, T88, T5 , Index [12s], SpO2 Events, Pulse Rate Events [Bradycardia, Tachycardia]

Spirometry Parameters (PC Based)

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, tl, tE, VT/ tl, tE/tTOT, MVV (measured), MVV (calculated)

Oximetry Parameters (Optional PC Based)

SpO2 [Baseline, Min, Max, Mean], Pulse Rate [Baseline, Min, Max, Mean], T90, T89, T88, T5 , Index [12s], SpO2 Events, Pulse Rate Events [Bradycardia, Tachycardia]



Always included:

Winspiro PRO® PC software with free update



Optional function available:

Oximeter with adult or paediatric finger probe (for Advanced and Smart versions)



Available with both DISPOSABLE or REUSABLE turbine flowmeter



Also available for iPad (Smart version)



Spirobank[®] Smart



Ultra portable, Real Time test via Bluetooth[®] (BLE) connection

iSpirometry

Suitable from 3 to 93 years!

300 million people suffer from asthma, over 200 million people worldwide have COPD Lung function reduces much before the symptoms occur, preventing patients from becoming aware of their pathology. Prevention is essential.

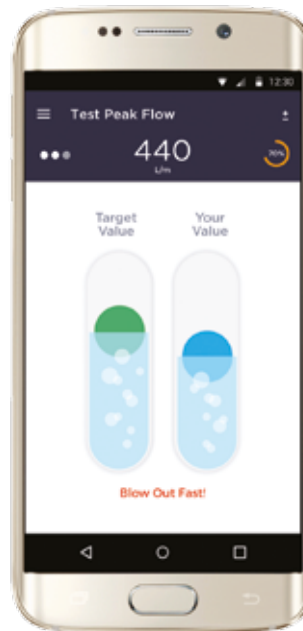
Spirobank Smart is a complete inexpensive spirometer ideal for screening



Available with both **DISPOSABLE** or **REUSABLE** single patient turbine flowmeter



Spirometry test:
PEF, FVC, FEV1, FEV1/FVC Ratio, FEV6
FEF 25/75



Patient Incentive



On-screen Results

Open Source Project Software Development Kit (SDK) for App Developers

Implemented for the most important mobile platforms: iOS and Android.
The SDK handles the Smart Bluetooth communication between your App and the device with simple and intuitive commands.

Source code of sample app provided.

Unparalleled Accuracy
Unmatched Quality!
ISO 26782 Std (for spirometry parameters)
ISO 23747 Std (only for the Peak Flow parameter)
ATS/ERS 2005 standards



*FDA clearance pending



Smart One[®]

Peak Flow and FEV1
now available on your Smart Phone



SmartOne
Suitable from 3 to 93 years!

Ideal in the *self management* of Asthma, COPD, Lung Transplant care, Cystic Fibrosis and for use in Clinical Trials

Simple and lightweight to carry on the go
Smart One[®] has been designed to satisfy the growing demand for wireless devices capable to connect to the new generation of Android and iOS Smart Phones and Tablets



Traffic light health indicator, symptoms scoring and notes

Graphic trend of Peak Flow or FEV1



Available with both **DISPOSABLE** or **REUSABLE** single patient turbine flowmeter



Spirometry test: PEF, FEV1

Open Source Project Software Development Kit (SDK) for App Developers

Implemented for the most important mobile platforms: iOS and Android.
The SDK handles the Smart Bluetooth communication between your App and the device with simple and intuitive commands.

Source code of sample app provided.

Unparalleled Accuracy
Unmatched Quality!
ISO 26782 Std (for spirometry parameters)
ISO 23747 Std (only for the Peak Flow parameter)
ATS/ERS 2005 standards



Spirotel[®] Bluetooth[®]

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

3Doximeter[®]

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



On screen Plethysmographic Curve



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



Optional function available: Oximeter with adult or paediatric finger probe; Bluetooth module



Customizable eDiary



Easy integration in third party Telemedicine Platforms

Integrated with
2net[™]
 by Qualcomm Life



Large selection of languages

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



MIR Spiro

iOS based

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



Winspiro PRO® & Winspiro PRO Net®

Windows based

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



MIR Software Development Kit

Windows based

Get the tools to build and run your own Windows® desktop application in C# for Spirometry and Oximetry

Basic software solution for spirometry



Winspiro Light®

Windows based

Simple and intuitive for essential Spirometry test



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

iOS based

MIR Spiro

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



MIR Spiro



*A smarter way to perform spirometry!
Maximum ease of use in primary care*

An expert beside you

Highly innovative virtual assistant supporting the operator before, during and after the spirometry test with four main functions:

- ✓ didactic guide with recommendations for the correct execution of the test
- ✓ identification of the cause of errors during test execution
- ✓ suggestions both for the operator and for the patient to make an acceptable test
- ✓ automatic test interpretation

Sharing is caring

Changing our software experience, direct and simple as a tap, test can be printed, exported in pdf and sent by email.

The recorded data can be transferred in HL7 format to a web service for archiving tasks or for second opinions and are enabled for EMR access

MIR Exclusive Patent

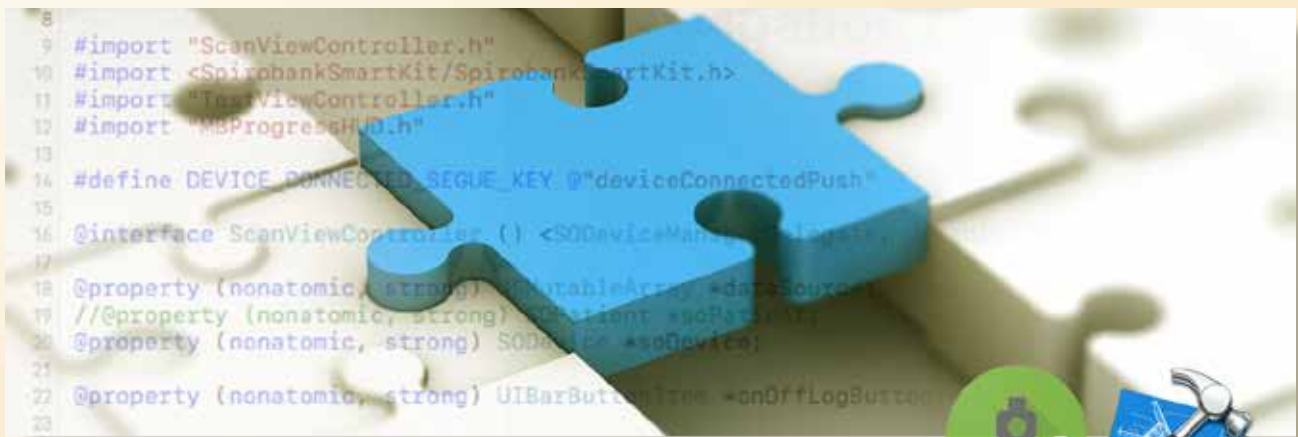
Paediatric incentive system directly on the screen, helpful to improve patient compliance during a Spirometry test



MIR Spiro is an App for iPad and iPad mini, and free updates are guaranteed.

The App is provided with the Smart version of SpirobankII®.





Windows based

MIR SDK



Get the tools to build and run your own Windows® desktop application in C# for Spirometry and Oximetry

MIR Software Development Kit

Is the Software Development Kit to easily connect and handle MIR spirometers and oximeters into your windows application. The developers will take advantage of the many libraries included in the SDK covering many different environments such as:



USB and Bluetooth® communication

Real time values for spirometry and oximetry are provided to be plotted in a chart. USB Windows Certified Driver comes with the SDK.



Spirometry Reference Values

A huge database of equations from many authors is available. For each parameter the MirPredicted library retrieves, not only the standard reference values but also the LLN, the ULN and the zScore values



Spirometry Interpretation

Spirometry Interpretation library performs the Acceptability and Repeatability calculation (Quality Control Grade) and retrieves the Variability and the Automatic Interpretation for both the baseline spirometry and the post bronchodilator sessions, according to the ERS/ATS criteria.



Oximetry Interpretation

Starting from the measured SpO2 and HeartRate "points" this library is able to perform both the generic and the specific analysis of the pulse oximetry, also using sophisticated algorithms for the detection of specific disease such as OSAS (Obstructive Sleep Apnea Syndrome), NOD (Nocturnal Oxygen Desaturation).



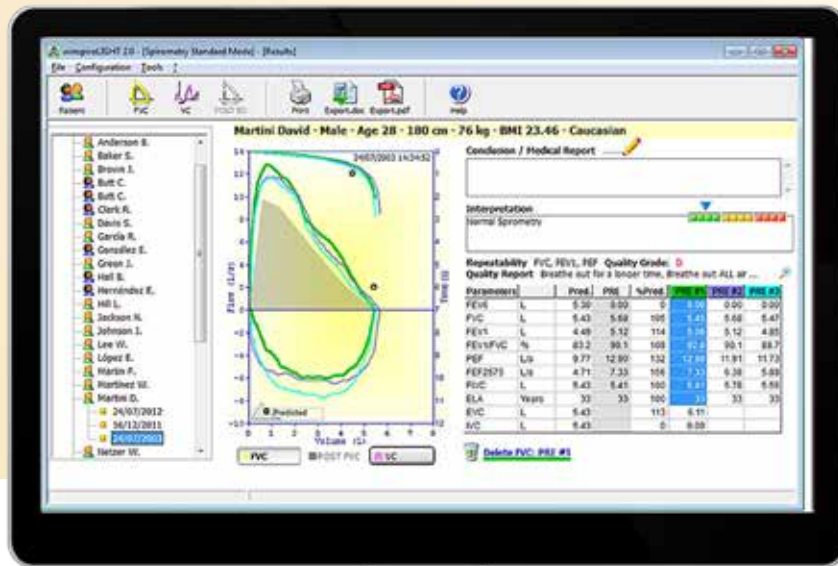
Spirometry and Oximetry Charts

MirCharting library returns complete charts for any spirometry or oximetry layouts



Spirometry and Oximetry Report in PDF

The SDK provides a professional and complete, ready to print report in PDF format.



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

 Function available: POST Bronchodilator software feature

Spirometry parameters

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

MIR Target Markets

- ✓ **Doctor and patient**
With MIR products, the patient can self monitor his/her health and doctor can keep track of the values.
- ✓ **Pharmaceutical Company**
MIR products are the perfect match for clinical trials: MIR software is fully customizable and it can support also long protocols.
- ✓ **System Integrators**
MIR products can communicate with other third parties systems. MIR software is constantly updated to communicate with the latest technologies.
- ✓ **Customized hardware and software solutions**
MIR software and hardware are fully customizable, with great flexibility.

MIR International Product Awards

ERS 2015 Product of Outstanding Interest Award



Medical Design Excellence Awards

iF Design Award 2016



Medical Design Excellence Awards



reddot design award

MIR products has been awarded repeatedly with the prestigious Reddot design award

MIR

Spirometry for all





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www.mirsmartone.com

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