

ADVANCED

MINISPIRTM

Handheld, PC-based Spirometer

Real-Time Flow/Volume and Volume/Time curves on your PC for a comprehensive Spirometry.



MAIN features



REAL-TIME TEST

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



PLUG AND PLAY

Power via USB, no internal memory, no display, no maintenance, carrying case included



COMPLIANCE ATS/ERS 2019

And other Standards including ISO 26782 (for Spirometry), ISO 23747 (for PEF), and more. CE0476, FDA 510 (k)



SPIROMETRY PARAMETERS

Spirometry: FVC, FEV1, FEV1/FVC%, FEV3, FEV3/FVC%, FEV6, FEV1/FEV6%, PEF, FEF25, FEF50, FEF75, FEF2575, FET, ELA, EVOL, FIVC, FIV1, PIF, FIV1/FIVC%, PIF, IRV, VC, IVC, IC, ERV, FEV1/VC%, VT, VE, Rf, tI, tE, ti/tTOT, VT/tI, MVV



PC CONNECTION VIA USB

Real-time test on PC screen, connect with your EHR/EMR, print Medical Report and more



DISTINCTIVE features



PREDICTED SETS & VALUES

Large Selection, including comparison %Pred, Z-score and LLN. Include GLI equations



GENERAL PRACTICE

Easy-to-Use, real time spirometry curve and complete test results available in PC-mode



EHR/EMR CONNECTIVITY

Via PC, integration with patient database on your EHR/EMR (in HL7, GDT)



COVID-19 PREVENTION

Complete Disposable Set with Antiviral filter available, to reduce risk of cross-contamination

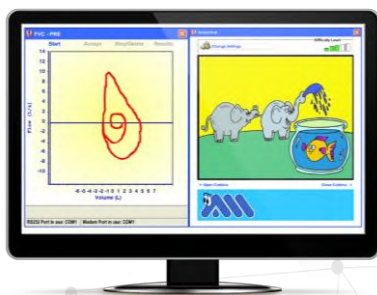
Always INCLUDED

- Carrying case
- Noseclip
- PC Software license



Compatible SOFTWARE

winspiroPRO



Pediatric Incentive
(PATENTED) to improve patient compliance during the test.



Acceptability Messages, Test interpretation and Quality Control Grade according to the latest **Spirometry Standards**

MAIN FEATURES

Windows-based solution for Spirometry, Oximetry and Telemedicine.

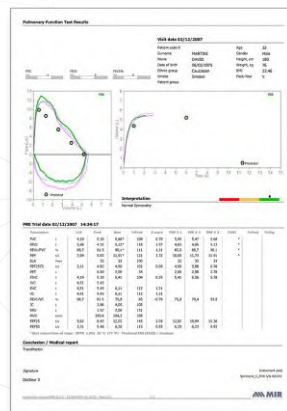
Wide range of predicted sets and values, including **GLI Predicted sets, LLN and Z-score**.

Embedded **EHR/EMR connectivity**.

NET VERSION available, share one database between different PC workstations.

MEDICAL REPORT

Specialized and **customizable printout**



spiro Connect



MAIN FEATURES

Windows-based solution, **direct integration** with your EHR/EMR.

Real time test include **Spirometry**

Standardized communication in **HL7 or Exchange Protocol**.

Select patient info directly from your own **EHR/EMR**

Spirometry test: FVC-Pre, FVC-Post, VC-Pre

GO-TO-MARKET TOOLKIT

Software Development Kit available for System Integrators and App Developers.
OEM service available for Spirometry and Oximetry.



Learn more about available SDK and OEM



Compatible TURBINES

flowMIR™
Disposable Turbine



Reusable Turbine



Mouthpiece

Included Disposable

Required, Not Included

Turbine Disinfection

Not required

Required

Turbine Calibration

Not required

Required

Packaging

Individually sealed: 60 or 10 units / box

1 unit in Carton box

Antiviral Filter

Available Disposable

Required Disposable

PLAY VIDEO



SCIENTIFIC PUBLICATIONS



Also available in **MORE CONFIGURATIONS**



Technical Specification

Minispir

Minispir Light

TYPE OF SPIROMETER	PC-Based	PC-Based
COMPATIBLE TURBINES	flowMIR™ Disposable Turbine, Reusable Turbine Flowmeter	flowMIR™ Disposable Turbine
COMPATIBLE SOFTWARES	Winspiro PRO, spiro Connect	Winspiro Light
EXTERNAL CONTROL	Real time test on PC screen, connect with your EHR/EMR, back-up database on PC memory and much more Connect to your PC via USB	Real time test on PC screen, print visit report, back-up database on PC memory and much more Connect to your PC via USB
EHR CONNECTIVITY	Via PC, integration with patient database on your EHR/EMR (in HL7, GDT)	
MEASURED PARAMETERS	Spirometry: FVC, VC, IVC, MVV, PRE/POST Bronchodilator comparison Spirometry: FVC, FEV1, FEV1/FVC%, FEV3, FEV3/FVC%, FEV6, FEV1/FEV6%, PEF, FEF25, FEF50, FEF75, FEF2575, FET, ELA, EVOL, FIVC, FIV1, PIF, FIV1/FIVC%, PIF, IRV, VC, IVC, IC, ERV, FEV1/VC%, VT, VE, Rf, tI, tE, ti/tTOT, VT/tI, MVV	Spirometry: FVC, VC, PRE/POST Bronchodilator comparison Spirometry: FVC, FEV1, FEV6, FEV1/FVC, PEF, FEF2575, ELA, FIVC, IVC, EVC

[COMPARE ON WEBSITE](#)



PRODUCT CODES – 911006E0 - Spirometer; 911006E1 - Spirometer with reusable turbine

Technical specification

Width	49.7 mm
Length	142 mm
Thickness	26 mm
Weight	65 g

Turbine



Reusable turbine (code 910002)

Disposable turbine (code 910004)

Supply voltage	5 V d.c. USB connection
Rated electrical power	0.25 W
Rated input current	50 mA max
Backup battery voltage	none
Connectivity	USB 2.0
Display	none
Mouthpieces	Ø 30 mm (1.18 inch)
IP protection level	IPX1
Type of electrical protection	Class II device
Safety level for shock hazard	Type BF Apparatus

Conditions of use	Apparatus for continuous use
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Storage conditions	Temperature:	MIN -20 °C, MAX +60 °C
	Humidity:	MIN 10% RH; MAX 95%RH
Operating Conditions	Temperature:	MIN +10 °C, MAX +40 °C
	Humidity:	MIN 10% RH MAX 95%RH

Memory capacity	database PC software
PC software	winspiroPRO
Applicable standards	IEC 60601-1:2005 + Amd1:2012
	EN 60601-1-2: 2015
	ISO 26782: 2009
	ISO 23747: 2015
	ATS/ERS: 2005, 2019 update
	ISO 80601-2-61: 2017

Spirometry

Flow sensor	bi-directional digital turbine
Volume range	10 L
Flow range	±16L/s
Volume accuracy (ATS 2019)	±2.5% or 50 mL
Flow accuracy	±5% or 200 mL/s
Dynamic resistance	<0.5 cm H ₂ O/L/s
Temperature sensor	semiconductor (0-45°C)
Test available	FVC, VC, IVC, MVV, PRE-POST FVC, FEV1, FEV1/FVC%, FEV3, FEV3/FVC%, FEV6, FEV1/FEV6%, PEF, FEF25, FEF50, FEF75, FEF2575, FET, ELA, EVOL, FIVC, FIV1, PIF, FIV1/FIVC%, PIF, IRV, VC, IVC, IC, ERV, FEV1/VC%, VT, VE, Rf, t _f , t _E , ti/t _{TOT} , VT/t _f , MVV
Measured parameters	

Oximetry (optional)

Measurement method	Red and infrared absorption
SpO2 range	0-99%
SpO2 accuracy	± 2% between 70-99% SpO2
Average number of heart beats for the %SpO2 calculation	8 beats
Pulse Rate range	30-300 BPM
Pulse Rate accuracy	± 2BPM or 2% whichever is greater
Average interval for the calculation of cardiac pulse	8 seconds
Signal quality indication	0 - 8 segments on display
Test available	spot
Measured parameters	SpO2% min, max, average
	BPM min, max, average
	Test duration
	% Bradycardia Duration (<40 BPM)
	% Tachycardia Duration (>120 BPM)
	% of Time with SpO2 ≤ 90% (T90%, T89%)

Certificates & Registrations

CE 0476	MED 9826
FDA 510 (k)	K 122384
Health Canada	71191 (class II)
CND code	Z12150102
GMDN code	13680
Ministry of Health	678828/R

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SPIRODOC® - SPIROMETER AND OXIMETER

- 33532 SPIRODOC SPIROMETER + SOFTWARE WINSPIRO PRO - bluetooth
- 33533 SPIRODOC OXIMETER + SOFTWARE WINSPIRO PRO
- 33534 SPIRODOC SPIROMETER + OXIMETER + SOFTWARE - bluetooth

One touch laboratory for respiratory analysis suitable for professional and personal use, supplied with reusable turbine.

Complete spirometer ATS/ERS compliant

Specialist-level analysis, screening and Home-care monitoring. Various operation modes: "advanced" parameters for the specialist, "reduced" set of parameters for screening as well as a "simplified" version for Home-care operation. FVC, VC, IVC, MVV, PRE-POST.

Precise spirometry interpretation including post bronchodilator. All tests are automatically memorized. Automatic BTPS conversion. Memory capacity: 10.000 tests. Wide selection of predicted values. Possibility to enter patient name.

Intelligent pulse oximeter with on-screen results

Simple, clear SpO₂ and Pulse Rate measurements with plethysmographic curve. During the single six-minute walk test (6 MWT), Spirodoc® estimates the level of oxygen therapy required by the patient. Spirodoc® carries out sleep desaturation studies and memorizes events as well as body position.

3D Accelerometer with motion analysis

Spirodoc® is the first 3D Oximeter® incorporating a triaxial motion sensor to correlate the saturation level (%SpO₂) with physical activity (walk counter, movement analysis and VMU).

Home-care symptoms diary

Fast on-screen symptoms entry. Touch screen with settable questions and automatic answer recording for homecare patient use (eDiary).

High performance PC software for spirometry and oximetry

All tests memorized are automatically downloaded into WinspiroPRO and a patient data card is created with a preview of the spirometry curve. WinspiroPRO can easily be connected to a database, EPR, hospital or occupational health system. This software also gives trend graphs of any parameter. All stored

Internal software and CD manual: GB, FR, IT, ES, DE, PT (only manual)

SPIROMETER + OXIMETER + 3D ACCELEROMETER IN ONE UNIT

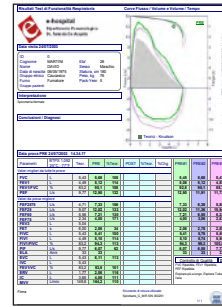


EASY TOUCH-SCREEN DISPLAY

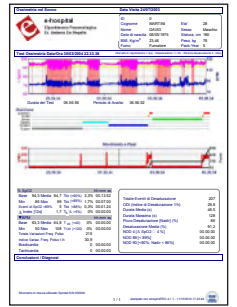
MIR
MEDICAL INTERNATIONAL RESEARCH



Three phase report of 6 minutes walk test: baseline, walk, recovery



Spirometry report
MADE IN ITALY



Nocturnal oximetry report with desaturation analysis

tests and curves of every patient can be reviewed on a single page and the results, including oximetry tests, can be compared. Multilingual software: GB, FR, IT, ES, DE, PT, PL, NL SE, CZ, LV, TR, RU, CN, JP.

TECHNICAL SPECIFICATIONS

Central unit

Display: LCD backlight touch screen display 128x64 pixels
Power supply: Lithium ion 3.7 V, 1100 mA rechargeable battery with 50 hours measurement back up
Accelerometer: Triaxial ±2 g, 400 Hz sampling
Dimension and weight: central unit 101x48x16 mm, 99 g removable turbine head: 46x47x24 mm, 17 g

Spirometry

Flow sensor: Bi-directional digital turbine
Flow range: ±16 L/s
Volume accuracy: ±3% or 50 mL, whichever is greater
Flow accuracy: ±5% or 200 mL, whichever is greater
Dynamic resistance at 12 L/s: <0.5 cm H₂O/L/s

Temperature sensor: semiconductor (0-45°C)

Spirometer measured parameters

FVC, FEV1, FEV1/FVC%, FEV3, FEV3/FVC%, FEV6, FEV1/FEV6%, PEF, FEF25%, FEF50%, FEF75%, FEF25%-75%, FET, Estimated Lung Age, Extr. Vol., FIVC, FIV1, FIV1/FIVC%, PIF, VC, IVC, IC, ERV, FEV1/VC%, VT, VE, Rf, ti, te, ti/t-tot, VT/ti, MW measured, MW calculated

Oximetry

SpO₂ range: 0-100%, ±2% (50-100% SpO₂)

Pulse rate range: 20-254 BPM, ±2 BPM or 2%

Pulseoximeter measured parameters

SpO₂ [Baseline, Min, Max, Mean], Pulse rate [Baseline,

Min, Max, Mean], T90% [SpO₂<90%], T89% [SpO₂<89%], T88% [SpO₂<88%], T5% [ΔSpO₂>5%], ΔIndex [12s], SpO₂ events, Pulse rate events [Bradycardia, Tachycardia], Step counter, Movement [VMU], Recording time, Analysis time

Sleep analysis

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

MINISPIR® LIGHT

- 33527 MINISPIR with Winspiro Light

Minispir Light measures 10 essential parameters for a diagnostic spirometry: FEV6, FVC, FEV1, FEV1%, PEF, FEF25/75%, FIVC, Lung Age, VC, IVC PRE-POST BD. Pediatric incentives. Flow/Volume loop and Volume/Time curve. Spirometry test interpretation.

Temperature sensor for BTPS conversion. Minispir Light meets the requirements of integrated healthcare platforms and tablet applications. For use with FlowMir disposable turbine only (33507).

Winspiro Light is an easy and intuitive software, for complete diagnosis included in Minispir Light.

MADE IN ITALY

AND MINISPIR®-USB

- 33528 MINISPIR with Winspiro PRO
- 33529 MINISPIR+OXYMETER with Winspiro PRO

Real time Flow/Volume loop and Volume/time curve with PRE/POST comparison. Advanced spirometry test interpretation. Pediatric incentive animations. Lung Age. Bronchial provocation test including new Mannitol protocol with FEV1 response curve. Temperature sensor for BTPS conversion. Supplied with reusable turbine.

32 measured parameters: FVC, FEV1, FEV1%, FEV3, FEV3%, FEV6, FEV1/FEV6%, PEF, FEF25%, FEF50%, FEF75%, FEF25-75%, FET, Vext, Lung Age, FIVC, FIV1, FIV1%, PIF, VC, IVC, IC, ERV, FEV1/VC%, VT, VE, Rf, ti, te, ti/t-tot, VT/ti, MVV.

CD manual GB, FR, IT, ES, DE, PT. Winspiro PRO is a unique spirometry and oximetry software, which comes standard with Minispir. All patient records are shown on simple, single-screen patient cards with dynamic management of all data and graphs.

FOR COMPLETE RESPIRATORY ANALYSIS

FOR ESSENTIAL RESPIRATORY TESTING

PC SYSTEM REQUIREMENTS FOR WINSPIRO LIGHT/PRO

Microsoft Windows: XP, Vista 32/64 bit, Seven 32/64 bit, 8
Screen resolution: 1024x768 Hard disk: 128 MB (better 256 MB)
USB socket
Multilingual: GB, FR, IT, ES, PT, DE, PL, SE, NL, CZ, LV, TR, RU, CN, JP

TECHNICAL SPECIFICATIONS MINISPIR/MINISPIR LIGHT

Temperature sensor: semiconductor (0-45°C)
Flow sensor: bi-directional digital turbine
Flow range: ± 16 L/s
Volume accuracy: ± 3% or 50 mL
Flow accuracy: ± 5% or 200 mL/s
Dynamic resistance at 12 L/s: <0.5 cm H₂O/L/s
Communication port: USB
Power Supply: line powered from USB port
Dimension: 50x142x26 mm
Weight: 65 g

TECHNICAL SPECIFICATIONS MINISPIR SpO₂

SpO₂ range: 0-99%
SpO₂ accuracy: ± 2% tra 70-99% SpO₂
Pulse Rate range: 30-300 BPM
Pulse Rate accuracy: ± 2 BPM or 2%
Measured parameters
SpO₂ [Baseline, Min, Max, Mean], Pulse Rate [Baseline, Min, Max, Mean], T90 [SpO₂<90%], T89 [SpO₂<89%], T88 [SpO₂<88%], T5 [ΔSpO₂>5%], Δ Index [12s], SpO₂ Events, Pulse Rate Events [Bradycardia, Tachycardia]



33529 PC not included

Winspiro PRO is a unique

spirometry and oximetry software, which comes standard with Minispir. All patient records are shown on simple, single-screen patient cards with dynamic management of all data and graphs.

MADE IN ITALY

GIMA code SPARE PARTS AND ACCESSORIES

33507	Flowmir disposable turbine with integrated mouthpiece - box of 60
33526	Reusable turbine (only for 33528-9)
33410	Adult mouthpieces Ø ext 3 cm - box of 500 pieces for 33526 - spare