

MIR MiniSpir datasheet code 911006 (spiro); 911010 (spiro+oxy)



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

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
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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
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Conditions of use	Apparatus for continuous use
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

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
Measured parameters	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 _i , t _E , t _i /t _{TOT} , VT/t _i , MVV

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



Minispir



USB Spirometer
Real time tests directly on PC

Key features

Plug & Play

Device powered via integrated USB cable, without screen, without internal memory and with direct data recording on **MIR Spiro** software



Real-time tests

Real-time tests displayed on the PC screen via **MIR Spiro** software
Spirometry: FVC, VC, MVV, PRE/POST bronchodilator comparison

Pediatric incentive

Real-time animation for improved patient collaboration during the test

Integrated temperature sensor

Automatic BTPS Conversion

Predicted values

Wide selection of predicted values including GLI, ERS and others in PC mode

EMR/EHR connectivity

Integration via **MIR Spiro** software with EMR/EHR (in HL7, GDT, FHIR, EXCHANGE PROTOCOL)



Compatible turbines

		Mouthpiece	Turbine disinfection	Turbine calibration	Packaging	Antiviral filter
FlowMIR® disposable turbine		Disposable included	Not required	Not required	Individually packaged: packs of 60 pieces	Optional
Reusable turbine		Required, not included	Required	Required	Pack of 1 unit	Recommended by ATS

How to use

Minispir works when connected
to **PC via integrated USB cable**

MIR Spiro software

- \\ Comprehensive software for spirometry and oximetry
- \\ Designed to be integrated with EMR/EHR
- \\ Complies with the latest ATS/ERS guidelines
- \\ Available for desktop and laptop use
- \\ MacOS and Windows

All MIR professional devices
work with **MIR Spiro** software,
the latest generation software
for spirometry and oximetry.



Platinum Card

To subscribe to a Platinum
subscription plan
it is necessary to **have**
the MIR Spiro Platinum Card.



Measured parameters

	From MIR Spiro software via connection to the device
Spirometry	FVC, FEV1, PEF, FEF75, FEF25-75, FET, FEV1/FVC, FEV6, FEV1/FEV6, FEF25, FEF50, FIVC, FEV1/VC, ELA, MVV(cal), Time to PEF, FEV0.5, FEV0.5/FVC, FEV0.75, FEV0.75/FVC, FEF75-85, Extr. Vol, VC, EVC, IVC, IC, VC, ERV FEV3, FIV1, FIV1/FIVC, PIF, FEV3/FVC, PIF, FEV2, FEV2/FVC, FIF25, FIF50, FIF75, R50, FEV1/PEF (EI), FEV1/FEV0.5 (RFEV), TV, VE, RR, tI

Datasheet

Size	49.7 x 142 x 26 mm
Weight	65 g
Turbines	· Reusable Turbine (code 910002) · Disposable turbine (code 910004)
Supply voltage	5V USB connection
Nominal electrical power	0.25W
Nominal input current	50mA max
Backup battery voltage	absent
Connectivity	USB 2.0
Display	absent
Mouthpiece	Ø 30 mm (1.18 inches)
IP protection level	IPX1
Electrical protection	Class II device
Electrical safety level	Type BF device
Terms of use	Device for continuous use
Storage conditions	Temp: MIN -40°C, MAX+70°C Humidity: MIN 10% RH; MAX 95%RH
Terms of use	Temp: MIN +10°C, MAX +40°C Humidity: MIN 10% RH, MAX 95%RH
PC Software	MIR Spiro
Memory capacity	PC software database

Spirometry	
Flow sensor	two-way digital turbine
Flow Range	± 16 L/s
Volume accuracy (ATS 2019)	± 2.5% or 50 mL
Flow accuracy	± 5% or 200 mL/s
Dynamic resistance	< 0.5 cm H2O/L/s
Temperature sensor	semiconductor(0-45°C)
Available tests	FVC, VC, IVC, MVV, PRE-POST
Measured parameters	FVC, FEV1, FEV1/FVC%, FEV3, FEV3/FVC%, FEV6, FEV1/FEV6%, PEF, TPEF, FEF25, FEF50, FEF75, FEF2575, FEF7585, FET, FEV05, FEV05%, FEV075, FEV075%, FEV2, FEV2%, ELA, BEV, FIVC, FIV1, PIF, FIV1/FIVC%, PIF, IRV, VC, IVC, EVC, IC, EI, RFEV, ERV, FIVC, FIV1/FIVC, FEV1/VC%, FIF25, FIF50,FIF75, R50, VT, VE, RR, tI, tE, ti/tTOT, VT/tI, MVV, MVV cal, MV

Certificates and registrations	
CE 0476	MDR 2017/745
FDA 510 (k)	K 122384
Health Canada	71191 (Class II)
EMDN liv.4	Z121501
CND Code	Z12150102
GMDN Code	46906 (spiral)
Ministry of Health	2494682/R (911006I0) 2494688/R (911006I1)
Applicable regulations	Electrical Safety IEC 60601-1 Electro Magnetic Compatibility EN 60601-1-2 ISO 26782: 2009 ISO 23747: 2015 ATS/ERS:2005, 2019(update) IEC 60601-1-6:2010 IEC 60601-1-9:2007+AMD1:2013 IEC 62304:2006 + A1:2015 ISO 10993-1:2018

Compliance with guidelines and standards

Spirometry: ATS/ERS 2005 + update to 2019;
ISO 23747: 2015; ISO 26782: 2009

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