

MIR spirotel datasheet

code 9107000 (spiro) – code 9107100 (spiro-BT) – code 9107010 (spiro-GSM)-code 9107110 (spiro-BT-GSM)
code 9107001 (spiro-oxy) – code 9107101 (spiro-BT-oxy) – code 9107011 (spiro-GSM-oxy)-code 9107111 (spiro-BT-GSM-oxy)



Technical specification

Width	74 mm
Length	88 mm
Thickness	38 mm
Weight	151 g (battery pack included)

Turbine



Reusable turbine (code 910006)

Accelerometer tri axial accelerometer
Power supply Rechargeable Lithium-Ion 3.7V, 1100 mAh

Current capacity 1100 mAh
Consumption ~20-30 mA (during test)

Backup battery voltage none
Batteries charger voltage=5 V DC,
current=minimum 500 mA,
Connector: micro USB type B
compliant with EN 60601-1

Autonomy 50 hours

Connectivity USB, Bluetooth and GSM
Display LCD monochrome, 160 × 80 pixel

Keyboard Touchscreen display
Mouthpieces Ø 30 mm (1.18 inch)

Type of electrical protection Internally powered

Safety level for shock hazard Type BF Apparatus

Protection against water penetration IP22

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

Transport conditions Temperature: MIN -20 °C,
MAX + 60 °C
Humidity: MIN 10% RH;
MAX 95%RH

Applied norms EN 60601-1:2005 + A1: 2012
EN 60601-1-2:2015
IEC 60601-1-11:2015
ATS/ERS Guidelines
ISO 26782: 2009, ISO 23747: 2015
ISO 80601-2-61: 2017
IEC 60601-1-8: 2006

Bluetooth function (on request)

Operating frequency	2402 – 2480 MHz
Number of antennas	1
Channel spacing	1 MHz
Antenna type	Integrated ceramic chip antenna
Antenna gain	0 dBi

GSM function (on request)

Band	Quad-Band 850/900/1800/1900 MHz
Internal antenna gain	2.42 dBi
Internet protocols	TCP/IP, SSMTP, FTP, HTTP, POP3
Secure connection protocol	SSL
Symmetric key encryption:	DES, 3DES, RC2, RC4
Asymmetric key encryption:	RSA, DSS.
Certified:	R&TTE, FCC, PTCRB

Spirometry

Flow sensor	bi-directional digital turbine
Flow range	±16L/s
Volume accuracy	±2.5% or 50mL
Flow accuracy	±5% or 170mL/s
Dynamic resistance	<0.5 cmH ₂ O/L/s
Temperature sensor	semiconductor (0-45°C)
Measured parameters	FVC, FEV1, PEF, FEF 2575
Memory capacity	Up to 10000 tests

Oximetry (on request)

Measurement method	Red and infrared absorption
SpO ₂ range	0-99%
SpO ₂ accuracy	± 2% between 70-99% SpO ₂
Average number of heart beats for the %SpO ₂ calculation	8 beats
Pulse Rate range	30-300 BPM
Pulse Rate resolution	1 BPM
Pulse Rate accuracy	± 2BPM or 2%
Average interval for the calculation of cardiac pulse	8 seconds
Signal quality indication	0 - 8 segments on display
Measured parameters	%SpO ₂ median, BPM median, time analysis, T<89%, steps, ODI, walking distance
Memory capacity	up to 300 hours oximetry

Certificates & Registrations

CE 0476	MED 9826
FDA 510 (k)	K130784
Health Canada	71191 (class II), 75535 (class III)
CND code	Z12150102
GMDN code	46906
Ministry of Health	1128598/R (9107000), 1128603/R (9107001), 1128605/R (9107010), 1128607/R (9107011), 1128610/R (9107100), 1128614/R (9107101), 1128616/R (9107110), 1128619/R (9107111)