



spirobank II[®]

Defines what a Pulmonary Mini-Lab can do

Unique in the world. All in one

- Spirometer with 6,000 test memory
- Oximeter with 1,000 hours of recording
- Stand alone or PC online operation
- Patient identification by name or ID code
- USB, RS232, Bluetooth[®] and wireless acoustic modem



Remote diagnosis via web also with Bluetooth[®] connection



PC software included



Quality Instruments



Telemedicine option



SpO2 option



FDA	ATS	ISO	ISO
Approved	Standard	9001-2000	13485

Complete test summary

Spirometry

Parameter	Unit	Pre	Post	Normal	Pre	Post	Normal
FVC	L	5.08	5.41	184.67	5.06	5.08	5.47
FEV1	L	4.27	4.40	153.09	5.06	5.12	4.85
FEV1/FVC	%	83.8	81.2	100.0	83.8	83.1	88.7
PEF	L/s	6.18	6.27	153.78	6.18	6.27	147.73
RF25	L/s	7.33	4.71	153.78	7.33	4.38	5.88
RF50	L/s	2.96	2.29	2.96	2.96	2.29	2.96
RF75	L/s	10.07	9.07	153.78	10.07	10.36	10.34
RF90	L/s	7.21	5.46	170.60	7.21	6.55	6.23
RF95	L/s	6	5.34	170.60	6	5.66	5.67
WF75	L/s	176	180	180	176	180	180
WF90	L/s	8	8	8	8	8	8

Oximetry 72440 134125 Duration: 06:17:44

Parameter	Unit	Mean	Min	Max	Index
SpO2 Mean	%	91.7	89.8	93.4	4.5
SpO2 Min	%	85	84.8	85	78
SpO2 Max	%	97	97.6	98	590
SD9 (<90%)	%	24.8%	140 (<40 BPM)	0%	Baseline Dyspnea (Borg scale)
SD9 (<85%)	%	10.3%	1120 (>120 BPM)	58.6%	End of Test Dyspnea (Borg scale)

Printout with spirometry report

Pulmonary Function Test Results

Visit date 24/07/2003

Interpretation
Normal Spirometry

Conclusion / Medical report

Parameters	BTPS	Pre	PRE	%Pred	POST	%Pred	%Chg	Notes
Forced Vital Capacity								
Best values from all loops								
FVC	L	5.43	5.68	100				
FEV1	L	4.40	5.12	114				
FEV1/FVC	%	80.2	90.1	108				
PEF	L/s	9.77	12.90	132				
Values from best loop								
FEF2575	L/s	4.71	7.33	156				
FEF25	L/s	9.07	12.92	133				
FEF50	L/s	5.56	7.21	130				
FEF75	L/s	2.34	4.00	171				
FVC	L	5.43	6.41	100				
RF90	L	4.49	5.10	114				
RF95/FVC	%	82.2	84.3	113				
ELA	Years	33	33					
Lung Volumes and breathing pattern								
EVC	L	5.43	6.11	113				
FVC	L	5.43						
FEV1/FVC	%	80.2	83.8	104				
ERV	L	1.77	2.06	116				
IC	L	3.65	4.05	111				
Maximum Voluntary Ventilation								
MVV	L/min	149.8	164.2	110				

All results are shown directly on the display



Sleep oximetry printout with desaturation analysis

Sleep Oximetry Visit date 2/21/2006

Oximetry Test Date/Time 2/22/2006 8:38:03 PM

SpO2 (Oxygen saturation) Distribution

SpO2 (%)	Time (%)
95-100	21
90-94	58
85-89	20
80-84	0
75-79	0
70-74	0
<70	0

Pulse Rate Distribution

Pulse Rate (bpm)	Time (%)
>140	0
130-139	0
120-129	0
110-119	0
100-109	0
90-99	0
80-89	0
70-79	0
60-69	30
50-59	1
40-49	1
30-39	0
<30	0

Desaturation Duration

Time (s)	Mean, Index, Min, Max
10-19	4
20-29	31
30-39	369
40-49	133
50-59	13
>60	11

Conclusion / Medical report

Tot. Desat. Events	563
ODI (1/h)	57.7
Mean Duration(s)	37.3
Longest Duration(s)	108
Desaturation Peak(%)	81

Parameters of sleep desaturation

Three phase printout of 6 Minute Walk Test: Baseline, Walk, Recovery

Walk Test (6MWT) 12/13/2005 1:41:25 PM

SpO2 and Pulse Rate Graph

SpO2 Details

Parameter	Baseline	End	90
% SpO2	97	97	97
Min	85	85	90
Max	98	98	98
Mean	91.8		

6MWT (Six-Minute Walk Test)

Parameter	Value
Distance (m)	450
Predicted	485 (93%)
Predicted min	346 (130%)
AUC/Distance	4.1
Dyspnea (Borg scale)	0
Baseline 2	End 2
Chg 0	
Fatigue (Borg scale)	0
Baseline 4	End 7
Chg 3	

Pulse Rate Details

Parameter	Baseline	End	131
BPM	76.2	End	131
Min	75	Max	131
Mean	116.8		
T 40 (<40 BPM)	0%		
T 120 (>120 BPM)	57.5%		
Bradycardia (<40 BPM)	0		
Tachycardia (>120 BPM)	3		

Conclusion / Medical report

Walk Test - DATA	
Baseline DYSPNEA	2.0
Final DYSPNEA	2.0
Baseline FATIGUE	4.0
Final FATIGUE	7.0
Distance (m)	540

"Extra-oximetry" data for 6 Minute Walk Test

spirobank® II

Defines what a Pulmonary Mini-Lab can do



The most powerful, the most simple

Spirometry features

FVC, VC, IVC, MVV, PRE-POST BD
Automatically records the best 3 trials
Internal temperature sensor for automatic BTPS
Advanced spirometry test interpretation
Lung age estimation

SpO2 Option

Sleep disorder detection with events recording
Six minute walk test with acoustic warning for rest, walk and recovery
Parameters directly shown on the display (min, max, mean SpO2 and Pulse Rate, Δ Index, T90, T89, T88, T5, ODI, NOD, Desaturation Area etc.)
Its innovative functions make it the most unique oximeter on the market



Two different flowmeters available

FlowMir disposable turbine for single patient use

- High accuracy
- Easy to replace
- Very low cost
- Designed for use with MIR spirometers
- FlowMir is factory calibrated
- Available in box of 100 pieces
- No maintenance – No filter – No problem
- Hygiene 100% guaranteed by single packaging



World's First
International Patent Pending

Reusable turbine for long term operation



- High accuracy
- Long term stability
- Easy to clean or sanitized

MIR digital reusable and disposable turbines are developed in full compliance with ATS standards and guarantee accuracy in all environmental conditions



Spirometry program

- Flow/Volume and Volume/time curves
- PRE-POST bronchodilator comparison
- FEV1 dose-response curve
- Exclusive pediatric incentive system
- Advanced spirometry test interpretation
- Several sets of predicted values
- Integration with Electronic Medical Record
- Data and graphs export also via e-mail

Oximetry program

- PC online with SpO2 and Pulse Rate trend
- Desaturation events analysis
- Possibility to modify the registered data (start/end walk test phase, artefacts, etc.)
- One of the most distinctive elements of the **spirobank®II** is the “specialized and detailed” printout in color, which is easy to read and facilitates the diagnostic interpretation

spirobank®II base unit

Technical specifications

Temperature sensor: semiconductor (0-45°C)
Flow sensor: bi-directional digital turbine
Volume range: 10 L
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 cmH2O/L/s
Display type: graphic LCD - FSTN
Display resolution: 128 × 64 pixel
Keyboard: membrane, 6 Keys
Connectivity: USB, Bluetooth®, RS232, wireless internal modem (for Telemedicine applications)
Power Supply: 4 × 1.5 V, AAA battery
Dimension: 2.4×5.7×1.2 inch (60×145×30 mm)
Weight: 6.4 Oz (180 gram) with batteries

Measured parameters

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

SpO2 Option

Technical specifications

SpO2 range: 0-99%
SpO2 accuracy: ± 2% between 70-99% SpO2
Pulse Rate range: 30-254 BPM
Pulse Rate accuracy: ± 2 BPM or 2%

Measured parameters

Basic: 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]
6 Minute Walk Test: TΔ2 [SpO2≥2%], TΔ4 [ΔSpO2≥4%], Recording time, Time [Rest, Walking, Recovery], Walked Distance, Predicted Distance [Min, Standard], Desaturation Area/Distance, Borg Dyspnea [Baseline, End, Change], Borg Fatigue [Baseline, End, Change]
Sleep Test: Desaturation Events, Desaturation Index (ODI), Desaturation [Value, Duration, Nadir], □ΣπO2 [Min Drop, Max Drop], Pulse Variations, Pulse Rate Index, NOD 89 [SpO2<89%; >5 min], NOD 4 [SpO2 Baseline-4%; >5 min], NOD 90 [SpO2<90%; Nadir <86%; >5 min]

Available options

- PC Software **winspiroPRO NET** (Network)
- Adult reusable SpO2 finger probe
- Adult disposable SpO2 finger probe
- Pediatric reusable SpO2 finger probe
- Infant disposable SpO2 probe
- Neonatal disposable SpO2 probe
- Ear clip SpO2 probe
- SpO2 finger probe extension cable

Standard price includes

- **spirobank®II** base unit
- USB cable
- Carrying case
- Plastic noseclip
- 4 AAA alkaline batteries
- **winspiroPRO** software CD



CARDIOV MEDS

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