

SpiroStar USB



World's smallest Windows® compatible spirometer with USB connection

System components

- Personal computer (minimum requirements) without incentive:
 - Pentium 433MHz, Windows 95/98/Me/NT4 with 64MB RAM, Windows 2000/XP with 256MB RAM, 800x600 display with 256 colours, CD-drive, floppy drive, keyboard, mouse and graphics printer
- Personal computer (minimum requirements) with incentive:
 - Pentium 1.3 GHz or higher, Windows NT4 with 128MB RAM or more, Windows 2000/XP with 512MB RAM or more, 800x600 display with true colours, CD-drive, floppy drive, keyboard, mouse and graphics printer
- More memory may be required to run additional applications simultaneously
- IE5.01 and 32-bit ODBC drivers (included in Spiro2000 installation kit)
- SpiroStar USB Spirometry system:
 - SpiroStar USB spirometer unit (M9460)
 - SpiroSafe disposable flow transducer (M9242)
 - Tubing (M9220)
 - Spiro2000 spirometer software (M9831)
 - Quick Instructions Guide and Installation Guide
 - User's Manual (electronic)

Technical specifications

SpiroStar USB spirometer unit

- Physical dimensions: 84 mm x 36 mm x 17 mm
- Weight: 20 g
- Frequency response: 0...250 Hz (-3 dB)
- Supply voltage: via USB port
- Temperature correction: software-based
- Temperature range (operating): +10...+40°C
- Temperature range (storage): -10...+50°C
- Relative humidity range: 5...85%
- Pressure range: 600...1060 hPa
- Safety standards: EN60601-1-1, EN60601-1-2, Class IIa medical device (MDD, 93/42/EEC), CE₀₅₃₇

SpiroSafe disposable flow transducer - the best solution to patient safety

- Screen-type interchangeable disposable pneumotach
- Material polyethylene, can be disposed with incineration without toxic emissions
- Flow range -14...+14 l/s
- Back pressure: less than 0.6 kPa/(l/s), meets ATS, ACCP & ECCS standards
- Accuracy: 3% without calibration, 2% with volume calibration
- Sterilisation not required, the entire Flow Transducer is disposable

Spiro2000 spirometer software for the professionals

Operating System:

- Windows 98/2000/XP

Remote use

- Database access via local area network (LAN)
- Final Report and signal data transfer via e-mail

Calibration

- Calibration with standard 3000 ml pulmonary calibration syringe, user defined volumes allowed
- Calibration results are recorded and stored in the calibration log file

Measurement

- Collection of whole signal data, collection rate: 500 Hz
- Max duration of one measurement: 60 s
- Measurement protocols: TV, VC, FVC, FEVC, FIVC, MVV
- Maximum number of measurements: 8 pre and 8 post measurements
- Meets ATS/ERS standards
- Determination of 0-time in FVC by back extrapolation
- Metric and U.S. units
- Calculated variables:
 - TV, FR, MV
 - VC
 - FVC, FEV0.5, FEV1, FEV6, FEV0.5%, FEV%, PEF, MEF75, MEF50, MEF25, MMEF(FEF25-75), METT, AEFV, FET and VEXT
 - FIVC, FIV0.5, FIV1, FIV6, FIV0.5%, FIV%, PIF, MIF75, MIF50, MIF25, MMIF(FIF25-75), MITT, AIFV, FIT and VIEXT
 - MVV, MVVFR and MVVT
- Encouraging spirometry incentive for the children

Results and Databases

- Criteria of best results: according to ATS and ERS recommendation
- Automatic interpretation of bronchodilatation test
- Several interactive graphs and tables. Detailed viewing by zoom, signal change by check boxes, trending
- Reference values: several pre-defined national sets. Reference values also in a histogram form. Reference addition and reference set edition by MS Access
- Final report: Page size A4/Letter, HTML based, user-defined, several pre-defined formats available
- Database: MS Access or any other ODBC and SQL capable database
- XML based import and export functions



PERSONAL INFORMATION

Last name : Smith (demo)
Given names: John F
Profession : Coach

Date of birth : 14.11.1974
Age and gender: 25 years old male
Personal ID : Demo3
Patient code :

Height : 178 cm
Weight : 68.0 kg
BMI : 21.5
Ethnic group:

SMOKING Yes

CLINICAL INFORMATION

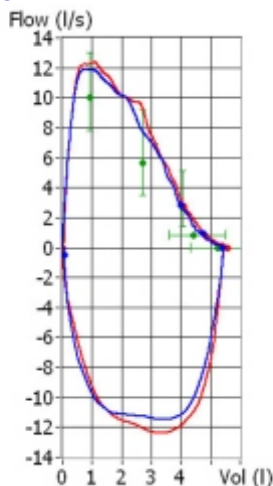
Illness :
Medication:
Problem :
Co-operation: Good
Comment :
Operator : NN

TEST RESULTS

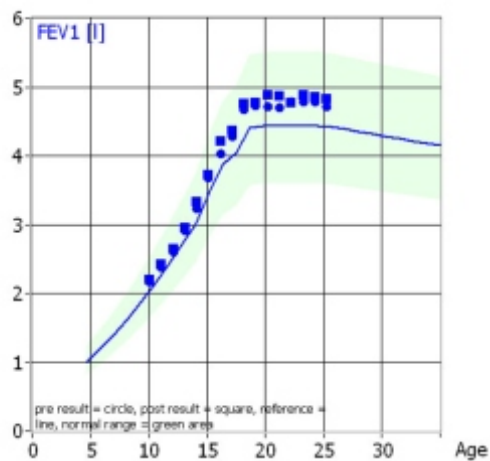
Variable	Abbr.	Unit	Ref value	----- MEASURED VALUES -----			Normal range (-----)											95 % range %ref												
				Pre test abs %ref	Post test abs %ref	Difference abs %ref	Pre (o) & Post (x) Results																							
				Ecsc_m			20	40	60	80	100	120	140	160	180															
Tidal volume	TV	l		0.76			.	.	.	.	|	.	.	.	.												-
Breathing frequency	FR	1/min		11.16			.	.	.	.	|	.	.	.	.												-
Minute ventilation	MV	l/min		8.49			.	.	.	.	|	.	.	.	.												-
Vital capacity	VC	l	5.50	5.20	95		.	.	.	---	o	-----	.	.	.												82-124			
Forced vital capacity	FVC	l	5.26	5.41103	5.57	106	0.15	3	.	.	.	-----	*	-----	.	.	.												82-123	
Forced exp.volume at 0.5sFEV0.5		l		3.96	4.07		0.10		.	.	.	.	|	.	.	.												-
Forced exp.volume at 1.0sFEV1		l	4.43	4.73107	4.84	109	0.11	2	.	.	.	-----	o	x	---	.	.	.												81-124
Forced exp.volume at 6.0sFEV6		l	5.26	5.41103	5.57	106	0.15	3	.	.	.	-----	*	-----	.	.	.												82-123	
FEV1 / VC	FEV1%(VC)	%	82.68	90.88110					.	.	.	-----	o	---	.	.	.												88-115	
FEV1 / FVC	FEV1%(FVC)	%	82.68	87.40106	86.95	105	-0.45	-1	.	.	.	-----	*	---	.	.	.												88-115	
Peak expiratory flow	PEF	l/s	10.00	11.75118	12.15	122	0.40	4	.	.	.	-----	*	---	.	.	.												78-130	
Peak expiratory flow	PEF	l/min	599.78	705.18118	729.03	122	23.84	4	.	.	.	-----	*	---	.	.	.												78-130	
Max exp. flow 50% VC	MEF50	l/s	5.62	7.76138	9.32	*166	1.55	28	.	.	.	-----	o	---	o	---	x												62-163	
Max exp. flow 25% VC	MEF25	l/s	2.65	2.59	98	2.98	112	0.38	14	.	.	-----	o	x	---	o	x	---												52-193
Max mean expiratory flow	MMEF	l/s	5.07	6.55129	7.14	141	0.59	12	.	.	.	.	|	.	o	x	.												-
Area of exp. FV-curve	AEFV	l ² /s		35.53	37.52		1.99		.	.	.	.	|	.	.	.	.												-
Forced expiratory time	FET	s		3.98	4.87		0.89		.	.	.	.	|	.	.	.	.												-
Forced insp. vital capac.	FIVC	l		5.38	5.43		0.05		.	.	.	.	|	.	.	.	.												-
Forced insp. vol. at 1.0s	FIV1	l		5.38	5.43		0.05		.	.	.	.	|	.	.	.	.												-
FIV0.5 / FIVC	FIV0.5%(FIVC)	%		96.24	95.81		-0.43		.	.	.	.	|	.	.	.	.												-
FIV1 / VC	FIV1%(VC)	%		103.39					.	.	.	.	|	.	.	.	.												-
FIV1 / FIVC	FIV1%(FIVC)	%		100.00	100.00		0.00		.	.	.	.	|	.	.	.	.												-
Peak inspiratory flow	PIF	l/min		686.21	739.98		53.77		.	.	.	.	|	.	.	.	.												-
Area of insp. FV-curve	AIFV	l ² /s		50.54	52.98		2.44		.	.	.	.	|	.	.	.	.												-

Reproducibility	Abbr.	Unit		abs %best	abs %best
Diff of 2 best	VC	l		0.01	0
	FVC	l		0.01	0
	FEV1	l		0.00	0
Max diff of all	PEF	l/s		0.25	2

BEST CURVES



TRENDING



INTERPRETATION

Ventilation function : Normal
Bronchodilatation test: No significant change
Manual interpretation: