CardioSoft Spirometry

A broader perspective on cardiac patient management

CardioSoft™ Spirometry and the Spiro-SP TrueFlow™
Sensor meets the key requirements for successful
Spirometry testing: accuracy, ease, and comfort.

Calibration-free & Quick Spirometry

TrueFlow technology, high-quality & optimized components
and Swiss precision-manufacturing deliver quick & accurate
results without calibration.

Quality Feedback & Interpretation

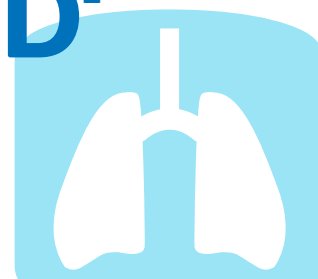Immediate test quality feedback in accordance with ATS/ERS criteria

Integrated reporting via CardioSoft System

The physician sees a summary table of the trials, comparison with
predicted sets, visual graphs and loops. Reports can be easily exported
as a PDF to EMRs, PACS and MUSE.™

CardioSoft can be expanded to perform Resting & Exercise ECG &
Ambulatory blood pressure analysis for an even broader perspective
on your patient.

REDUCED LUNG FUNCTION is related to **INCREASED RISK** of **CVD**[1]

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Computer specifications

Microprocessor	Minimum Pentium® 4 class processor with 2 GHz
RAM	Minimum 2 GB
Hard drive	Minimum 80 GB and 4 GB of free space if used as a standalone system
Software installation	DVD-ROM drive or USB
Pointer	Mouse
Display resolution	Minimum: 1280 × 768 Maximum: 3840 × 2160
Interfaces	Minimum: 2 USB ports (1.1, 2.0, or 3.0) for each device using this type of interface, CD-RW, SD card, network interface card (recommended), Serial RS232 for each device using this interface type
Operating system	Windows® 7 Professional (64 bit) with SP1 Window 8.1 Pro (64 bit) Windows 8.1 Enterprise (64 bit) Windows 10 Professional (64 bit) Windows 10 Enterprise (64 bit)
Printer	Equivalent to HP® P3015dn (Customer Supplied)
Additional software for export functionality	Microsoft Word and Excel (optional, Customer Supplied)
Networking LAN	Wired and Wireless: 802.11 G (optional) TCP/IP interface

Spirometry Specification

Test modes	FVC, FVL, SVC, MVV, Pre/Post
Parameters	**FVC:** FVC [L], FEV1 [L], FEV1/FVC [%], FEF25-75% [L/s], PEF [L/s], FET [s], BEV [L], BTPS ex, BTPS in, EOTV [L], FEF10% [L/s], FEF25% [L/s], FEF2575/6s [L/s], FEF40% [L/s], FEF50% [L/s], FEF60% [L/s], FEF75% [L/s], FEF75-85% [L/s], FEF80% [L/s], FET25-75% [s], FEV.25 [L], FEV.5 [L], FEV.75 [L], FEV.75/FVC [%], FEV1/FEV6 [%], FEV3 [L], FEV3/FVC [%], FEV6 [L], FVC6 [L], MEF20 [L/s], MEF25 [L/s], MEF40 [L/s], MEF50 [L/s], MEF60 [L/s], MEF75 [L/s], MEF90 [L/s], MMEF [L/s], PEF [L/min], PEFT [s], t0 [s]
	FVL: FVC [L], FEV1 [L], FEV1/FVC [%], FEF25-75% [L/s], PEF [L/s], FET [s], FIVC [L], PIF [L/s], BEV [L], BTPS ex, BTPS in, EOTV [L], FEF10% [L/s], FEF25% [L/s], FEF2575/6s [L/s], FEF40% [L/s], FEF50% [L/s], FEF60% [L/s], FEF75% [L/s], FEF75-85% [L/s], FEF80% [L/s], FET25-75% [s], FEV.25 [L], FEV.5 [L], FEV.75 [L], FEV.75/FVC [%], FEV1/FEV6 [%], FEV3 [L], FEV3/FVC [%], FEV6 [L], FIF25% [L/s], FIF25-75% [L/s], FIF50% [L/s], FIF75% [L/s], FIV.25 [L], FIV.5 [L], FIV1 [L], MEF20 [L/s], MEF25 [L/s], MEF40 [L/s], MEF50 [L/s], MEF60 [L/s], MEF75 [L/s], MEF90 [L/s], MIF25 [L/s], MIF50 [L/s], MIF75 [L/s], MMEF [L/s], MMIF [L/s], PEF [L/min], PEFT [s], PIF [L/min], t0 [s]
	SVC: SVC [L], VCex [L], VCin [L], IRV [L], IC [L], VT [L], RF [1/min], BTPS ex, BTPS in, ERV [L]
	MVV: MVV [L/min], MVV6 [L/min], MVV time [s], VT [L], f [1/min], BTPS ex, BTPS in
Measurement principle	Ultrasound transit-time measurement
Dimensions	160 × 120 × 70 mm (sensor only)
Weight	140 grams (incl. cable)

Spirometry Specifications (continued)

Measuring accuracy

Volume	±2% or 0.050 L
Flow	±2% or 0.020 L/s (except PEF)
PEF	±5% or 0.200 L/s
MVV	±5% or 5 L/min.

Measuring range

Resolution, volume	1 mL
Resolution, flow	4 mL/s
Range, volume	±12 L
Range, flow	±16 l/s
Resistance	0.3 cm H2O/L/s at 16 L/s
Respiratory tube	Disposable spirette
Adult predicted	Hankinson (NHANES III), 1999
	Knudson, 1976
	Knudson, 1983
	Crapo, 1981
	Morris, 1971
	ERS (ECCS / EGKS), 1993
	Forche (Austria), 1988
	Roca (Spain, Separ), 1982
	Berglund, Birath (Sweden), 1963
	Gulsvik (Norway), 1985
	Hedenström (Sweden), 1985/1986
	Gore, Crockett, 1995
	Finnish, 1982/1998
	JRS, 2001
	Pereira, 1992
	Brändli (Sapaldia, Swiss), 1996
	Pereira, 2006/2008
	Forche (Austria), 1994
	Gutierrez (Canada), 2004
	Mengesha (Ethiopia), 1985
	Chile, 2010/1997
	Langhammer (Norway), 2001
	Stanojevic (GLI), 2009
	Pérez-Padilla (PLATINO), 2006
	Pérez Padilla (Mexico), 2001
	Klement (Russia)
	Falaschetti, 2004
	Quanjer (GLI), 2012
	Garcia-Rio (Separ), 2013

Pediatric predicted	Dockery (Harvard), 1993
	Hsu, 1979
	Zapletal, 1977
	Hibbert, 1989
	Polgar, 1971
	Eigen, 2001
	Rosenthal, 1993
	Vilozni, 2005
	Nystad, 2002
	Pérez Padilla (Mexico),2003
	Zapletal, 2003
Hardware interface	USB 2.0 (compatible with USB 1.1, 2.0, 3.0 and 3.1 ports)
Operating voltage	5V DC
Mode of Operation	Continuous operation
IP Code	IP20
Classification	The Spiro-SP TrueFlow Sensor is a type BF applied part with double insulation.

Storage

Temperature	–20 to 50°C
Relative humidity	5% to 95%
Ambient pressure	500 to 1060 hPa

Operating conditions

Temperature	0 to 40°C
Relative humidity	5% to 95%
Ambient pressure	500 to 1060 hPa
Meets standards	2005 ATS/ERS Standardization of Spirometry, NIOSH/ OSHA, EN ISO 26782 , EN ISO 23747

1. D. D. Sin, L. Wu, and S. F. P. Man, "The relationship between reduced lung function and cardiovascular mortality: a population-based study and a systematic review of the literature," Chest, vol. 127, no. 6, pp. 1952–1959, 2005.

CardioSoft v7

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