



# CARDIOVIT CS-104 SPIRO

Calibration-free PC-based spirometry using accurate GANSHORN ultrasound technology.



# CARDIOVIT CS-104 SPIRO

Windows-based spirometry made simple.

Easily add spirometry to your Windows computer with:

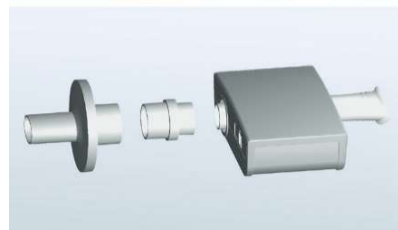
- ❖ CARDIOVIT CS-104 Spiro Software
- ❖ SpiroScout SP plus ultrasonic spirometer.



SpiroScout SP plus incorporates an ultrasonic flow sensor to measure airflow. Ultrasonic flow measurement is independent of gas composition, pressure and humidity, and it eliminates errors associated with these variables. The disposable ScoutTube does not perform any measurements and therefore does not require calibration. Low flow measurements could also be measured accurately using ultrasonic technology.

The user interface of CS-104 Spiro is designed with simplicity and ergonomics in mind. FVC incentive interface (an animated fish) is available to encourage paediatric patients to complete the FVC manoeuvre with maximal effort.

The interface for operators displays standard information needed for spirometry as well as aide to help the patients achieve ATS/ERS repeatability criteria for spirometry.



## SCOUTTUBE

- ❖ hygienic single-patient consumable for full contamination control
- ❖ shaped oval for optimal lip seal and teeth positioning
- ❖ conical to suit different mouth sizes

## PFT Filter

- ❖ provides accurate, leakage-free and reproducible results
- ❖ protection against cross-contamination and offers additional protection for operators and technicians
- ❖ disinfected adapter

# Technical Specification

## Requirements for PC Based Installations

<b>Operating System</b>	Windows
<b>Processor</b>	1 GHz, dual core minimum
<b>Working Memory (RAM)</b>	4 GB minimum
<b>Hard Disk Space</b>	100 GB free space recommended
<b>Screen Resolution</b>	Min 1280 x 1024, recommended 1920 x 1200
<b>External Printer</b>	Printout on normal paper with inkjet or laser printer
<b>Network</b>	Standard 100 Mbit/s Ethernet or standard WLAN configuration

## SpiroScout SP plus

<b>Measurement method</b>	Ultrasound
<b>Respiratory resistance</b>	2 Pa/l/s = approx. 0.02 cmH <sub>2</sub> O/l/s
<b>Sensor mouthpiece</b>	ScoutTube: Single patient use, disposable breathing insert ergonomically shaped mouthpiece and standard cone 22 mm
<b>Power supply</b>	Powered via USB
<b>Measurement ranges</b>	Flow: 0 to ± 18 l/s Volume: no limit
<b>Measurement accuracy</b>	Flow: ± 2% or 50 ml/s Volume: ± 2% or 50 ml
<b>Temperature drift</b>	Max: ± 2%
<b>Standards compliance</b>	ATS, OSHA, NIOSH



# CARDIOVIT CS-104

## Environmental Conditions

### Temperature

Operation: 10 to 40 °C

Transport: -10 to 50 °C

Storage: 5 to 50 °C

### Humidity

Operation: 15 to 95 % non-condensing

Transport/storage: 10 to 95% non-condensing

### Pressure

Operation: 700 to 1060 hPa

Transport/storage: 500 to 1060 hPa

## Standards

### Classification

Safety and performance standard: Conforms with IEC/EN 60601-1 and IEC/EN 60601-2-25

Protection class according 60601-1: II

**Applied part according 60601-1: CF**

**Classification according Directive 93/42/EEC: IIa**

**Notified body: CE 0123**

**Environmental protection class: IP20**

## CARDIOVIT CS-104 Spirometry

Spirometry software (without PC) and SpiroScout SP plus sensor

## Options Communication

### Communication

#### SCHILLER server required

- HIS/EMR/PACS order import for Worklist (5.111008)
- DICOM/HL7 ECG export to HIS/PACS (5.602101)
- HIS/EMR patient import for ADT (5.602102)
- HIS / EMR Results Export (5.602103)
- HIS/EMR/PACS order import for Worklist (5.602104)

### Data Export

**Export Formats:** SEMA3, PDF, GDT

## Spirometry

### Recording functions Spirometry

**Sensor:** SpiroScout SP plus (see over)

**Tests:** FVC (with incentive screen), SVC, MVV

**Standards:** Normal standards selected for predicted value calculation

**Review:** On screen review of PRE and POST measurements

**Interpretation:** Automatic interpretation of FVC

## Spirometry Sensor

### Sensor

**Name:** SpiroScout SP plus

**Dimensions:** 14cm x 5cm x 9cm

**Weight:** 185g

### Electrical data

**Power:** Powered via USB 2.0, 4.5 to 5.25VDC, 500 mA

**Power consumption:** Standby: 275 mA, 5VDC (1.4 W), Measurement: 500 mA, 5VDC (2.5W)

### Temperature

Operation: 15 to 35 °C

Transport: -20 to 50 °C

Storage: 5 to 50 °C

### Humidity

Operation: 30 to 80 % non-condensing

Transport/storage: 10 to 95 % non-condensing

### Pressure

Operation: 700 to 1060 hPa

Transport/storage: 500 to 1060hPa

### General

**Measurement Method:** Ultrasound

**Patient protection and hygiene:** ScoutTube: single patient use, disposable breathing insert ergonomically shaped mouthpiece and standard cone 22 mm

**Respiratory resistance:** 0.002 kPa/l/s = approx. 0.02 cmH<sub>2</sub> O/l/s

**Dead space, complete:** 18cm<sup>3</sup>

### Measurement Ranges:

- Flow: 0 to 16 l/s

- Volume: 0 to 15 litres

### Measurement Accuracy:

- Flow: ± 5% or 200 ml

- Volume: ± 3% or 50 ml





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Device availability in your market is subject to regulatory approval.

