



Practice changing non-invasive  
pulmonary and cardiovascular  
devices

*The measure of life.*

# For Every Breath You Take

SpiroSonic devices provide practice-leading ultrasonic spirometry solutions for clinicians and patients.

**300 million** people suffer from asthma and COPD worldwide. Asthma is the most common chronic disease in children.

## Asthma

Asthma is a chronic disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency. Asthma occurs in ~10-15% of all children and adults and is underdiagnosed and under-treated. This may result in restriction of an individual's activities for a lifetime. Improved testing improves diagnosis and management, and spirometry is the preferred testing and monitoring technology.

## Occupational Lung Disease

Occupational lung diseases include conditions associated with workplace exposures to microscopic airborne dusts and vapors, which act as irritants, carcinogens, or immunological agents in the lungs and can cause lung cancer, COPD, silicosis, asbestosis, and pneumoconiosis. Clinically this leads to impaired lung function and chronic shortness of breath and restricted activity.

Spirometry can simply and accurately assess lung function by measuring how much (volume) and at what speed (flow) air can be inhaled and exhaled. Automated prediction formulas can be applied to allow diagnosis of pulmonary disease from spirometry. SpiroSonic ultrasonic spirometers provide a highly accurate simple digital diagnosis and monitoring solution for all sufferers with lung disease.

## COPD

Chronic obstructive pulmonary disease (COPD) is a serious, progressive and disabling condition that limits airflow in the lungs. COPD occurs in ~10% of all adults worldwide, and WHO predicts it will become the third leading cause of death by 2030.

In 2000, WHO estimated that worldwide risk factors in the workplace were responsible for 13 percent of COPD, 11 percent of asthma, and 9 percent of lung cancer.

**SpiroSonic spirometers provide diagnostic decision support and automatic interpretation.**



SpiroSonic devices feature user-friendly, research quality spirometry at affordable costs. Based on multi-path digital ultrasonic flow monitoring, our spirometers are the result of years of research, technological development and innovation.

- ✓ **Accurate** – multi-path digital ultrasonic technology for improved outcomes
- ✓ **Simple to use** – digital voice guided operation
- ✓ **Automatic calibration**
- ✓ **Easy to disinfect** – no moving parts
- ✓ **Low flow resistance** – suitable for children, severe asthma and COPD
- ✓ **Diagnostic decision support** system for clinicians
- ✓ Interfaces with proprietary **SpiroReporter** software (PC)
- ✓ Simple **connectivity** to EMRs and APPs (mobile and tablet)
- ✓ Unique **solutions** for clinicians and researchers, and personal care
- ✓ Specialised for **assessment** of COPD, asthma, occupational lung disease and monitoring of pulmonary therapeutic compliance, and sleep disordered breathing

**Advanced Spirometry, Advanced Care.**

# SpiroSonic FLO

PC solution partnered with SpiroReporter for software guided examination



**SpiroSonic FLO** is a high fidelity digital multi-path ultrasonic spirometer for pulmonary function diagnostic and monitoring designed for screening COPD and asthma.

- ✓ Built-in automatic internal calibration
- ✓ Highly cost efficient design, robust, durable mechanics
- ✓ No moving parts, durable factory calibration
- ✓ Zero cross-contamination (easy to disinfect)

## FEATURES

- ✓ Standard Interfaces, easy integration to ECG, Home monitoring, Telemedical set-top-boxes
- ✓ Complete integration package with driver, communication support DLL and example source code available as an option
- ✓ Automatic internal calibration, (external validation with calibration pump available as an option)
- ✓ Easy and efficient integration to HIS (Hospital Information Systems)
- ✓ Software upgrade option
- ✓ Plug & Play USB PC connection detection
- ✓ Easy upgrade, standard interfaces
- ✓ Pharmaceutical testing subsystem
- ✓ The inner surface of the flow tube is continuous, it can be disinfected with cold disinfecting liquid



## SpiroReporter Pulmonary Diagnostics PC software

- ✓ All standard medical interfaces (HL7, GDT, BDT, XML)
- ✓ Automatic interpretation module
- ✓ Diagnostic decision support system for general practitioners and physicians
- ✓ Complete stress testing procedures

## SPECIFICATION

Volume Accuracy	± 2.5% or 50 mL whichever is greater
Flow Accuracy	± 2.5% or 50 mL/s whichever is greater
Resolution	3 mL/sec
Maximum Volume	± 20 L
Flow Range	± 14 L/sec
Sample Rate	100 Hz
Flow Tube Dimensions	Ø30 × 165 mm
Device Dimensions	28 × 61 × 94 mm
Device Weight	122 g
Communication	Connection to PC via USB (Type A)
Power Supply	USB 5V (USB socket of PC)
Standard Pulmonary Function Parameters	AEX, ELA, EOTV05, EOTV1, ERV, EV, EV%FVC, FEF25, FEF50, FEF50/FIF50, FEF50%FIF50, FEF75, FET, FEV05, FEV05%FVC, FEV075, FEV075/FVC, FEV1, FEV1%FEV6, FEV1%FVC, FEV1%FVC, FEV1%VC, FEV3, FEV3%FVC, FEV6, FEV1/FVC, FIF25, FIF50, FIF75, FIT, FIV1, FIV1%FVC, FIVC, FVC, IC, IRV, IVC, MMEF2550, MMEF2575, MMEF5075, MVV, PEF, PEFT, PIF, RR, TE, TE/TI, TI, tR, TV, TV/TI, VC, VE, VPEF, ZeroTime

# SpiroSonic AIR

Next-generation digital ultrasonic spirometer with Bluetooth 4.0 and wireless charging



**SpiroSonic AIR** is a wireless, portable pulmonary function diagnostics device with Bluetooth Low Energy communication interface and built-in battery. SpiroSonic AIR is suitable for screening COPD and asthma.

- ✓ Bluetooth Low Energy
- ✓ Wireless charger (Qi)
- ✓ Built-in automatic internal calibration
- ✓ Diagnostic decision support system
- ✓ Easy to clean, easy to disinfect

### Features

- ✓ Automatic internal calibration, (external validation with calibration pump available as an option)
- ✓ Software upgrade option
- ✓ Easy upgrade, standard interfaces
- ✓ Pharmaceutical testing subsystem
- ✓ The inner surface of the flow tube is continuous, it can be disinfected with cold disinfecting liquid
- ✓ Android application



### SpiroSonic App Android Spirometry

- ✓ Intuitive interface
- ✓ Automatic interpretation module
- ✓ Diagnostic decision support system for general practitioners and physicians
- ✓ Database synchronization with PC

### SPECIFICATION

Volume Accuracy	± 2.5% or 50 mL whichever is greater
Flow Accuracy	± 2.5% or 50 mL/s whichever is greater
Resolution	3 mL/sec
Maximum Volume	± 20 L
Flow Range	± 14 L/sec
Sample Rate	100 Hz
Flow Tube Dimensions	Ø30 × 125 mm
Device dimensions	45 × 73 × 95 mm
Device Weight	142 g
Communication	Bluetooth 4.0 Low Energy
Power Supply	Internal 3.7 V Li-Ion battery (rechargeable via standard Qi wireless chargers - included)
Standard Pulmonary Function Parameters (Evaluated by SpiroSonic Android app)	ELA, EOTV05, EOTV1, EV, FEF25, FEF50, FEF75, FET, FEV05, FEV075, FEV075%FVC, FEV1, FEV1%FEV6, FEV1%FVC, FEV1%FVC, FEV3, FEV3%FVC, FEV6, FIF25, FIF50, FIF75, FIV1, FIV1%FVC, FIVC, FVC, MMEF2550, MMEF2575, PEF, PEFT, PIF, ZeroTime
Standard Pulmonary Function Parameters (Evaluated by SpiroReporter PC software)	AEX, ELA, EOTV05, EOTV1, ERV, EV, EV%FVC, FEF25, FEF50, FEF50/FIF50, FEF50%FIF50, FEF75, FET, FEV05, FEV05%FVC, FEV075, FEV075/FVC, FEV1, FEV1%FEV6, FEV1%FVC, FEV1%FVC, FEV3, FEV3%FVC, FEV6, FEV1/FVC, FIF25, FIF50, FIF75, FIT, FIV1, FIV1%FVC, FIVC, FVC, IC, IRV, IVC, MMEF2550, MMEF2575, MMEF5075, MVV, PEF, PEFT, PIF, RR, TE, TE/TI, TI, tR, TV, TV/TI, VC, VE, VPEF, ZeroTime

# SpiroSonic SMART

Standalone, touchscreen device  
with voice guided tutorial.  
Patient database can sync  
with SpiroReporter.



**SpiroSonic SMART** is a stand-alone solution for pulmonologists, general practitioners and personal use. SpiroSonic SMART brings advanced ultrasonic digital spirometry in a portable, touch-screen solution for use in the management of pulmonary disease.

- ✓ Friendly and easy to use user interface with large touchscreen display.
- ✓ Huge patient database to store several hundreds of patients and all their measurements.
- ✓ Audible human voice interpretation and measurement control.
- ✓ Measurement tutorial presentation system for increased patient compliance.
- ✓ ATS/ERS and NLHEP interpretation systems for automated pulmonary diagnostics. The device automatically processes FVC trials and provides suggestions on how to improve maneuver quality.

## Features

- ✓ No moving parts
- ✓ Battery operation
- ✓ Touch screen, bright color high resolution LCD display
- ✓ External printer connectivity
- ✓ Automatic internal calibration, (external validation with calibration pump available as an option)
- ✓ Firmware upgrade option via Internet
- ✓ Easy upgrade, standard interfaces, e.g. O<sub>2</sub> or CO<sub>2</sub> analog boards attachable
- ✓ The inner surface of the flow tube is continuous, it can be disinfected with cold disinfecting liquid

## Voice guided tutorial is available in the following languages:

(Please specify on order)

- ✓ U.S. English (ENG)
- ✓ French (FRE)
- ✓ German (GER)
- ✓ Italian (ITA)
- ✓ Spanish (SPA)
- ✓ Chinese (CHI)
- ✓ Austrian German (OST)
- ✓ Hungarian (HUN)
- ✓ Croatian (HRV)
- ✓ Korean (KOR)
- ✓ Australian English (AUS)
- ✓ Traditional Chinese (CHT)

\*= optional

The above information is subject to change without prior notice.

## SPECIFICATION

Volume Accuracy	± 2.5% or 50 mL whichever is greater
Flow Accuracy	± 2.5% or 50 mL/s whichever is greater
Resolution	3 mL/sec
Maximum Volume	± 20 L
Flow Range	± 14 L/sec
Sample Rate	100 Hz
Flow Tube Dimensions	Ø30 × 165 mm
Device Dimensions	37 × 80 × 92 mm
Device Weight	184 g
Display	QVGA 262k color touchscreen
Memory	4000+ measurements
Communication	Connection to PC via USB (mini Type B) Connection to printer via USB (Type A) or Bluetooth
Power Supply	Internal 3,7 V Li-Ion battery (rechargeable via 5V 500 mA mini USB charger)
Standard Pulmonary Function Parameters	ELA, ERV, ET, EV, FEF25, FEF2550, FEF2575, FEF50, FEF5075, FEF75, FET, FEV1, FEV1/FVC, FEV3, FEV6, FIT, FIV1, FIV1/FIVC, FIVC, FVC, IC, IRV, IVC, MVV, PEF, PEFT, PIF, RR, TE, TE/TI, TI, TV, TV/TI, VC, VE

# Accessories



Part No. S3000

## SpiroReporter Software

All-inclusive spirometry software solution that provides measuring, archiving, analysis, trend analysis, reporting, exporting and much more

- ✓ Multiple predictive algorithms
- ✓ Pediatric incentive screen
- ✓ Automatic interpretation module
- ✓ Pharmaceutical testing subsystem
- ✓ Optional Pulse Oximetry (SpO<sub>2</sub>)
- ✓ All standard medical interfaces (HL7, GDT, BDT, XML)
- ✓ Complete stress testing procedures
- ✓ Complete integration package with driver communication support DLL and example source code (optional)



Part No. S4102

## USB Weather Station

Environmental condition sensor

- ✓ Automatically sets environmental conditions in compatible spirometry software and devices
- ✓ Plug & Play

### Measurement range

Temperature	0-50 °C
Relative humidity	0-100%
Air pressure	750-1200 hPa

### Accuracy

Temperature	±1%
Relative humidity	±3%
Air pressure	±1%

### Communication

USB

- TEMPERATURE
- AIR PRESSURE
- RELATIVE HUMIDITY



Part No. S2000/2001

## Thermal Printer

Wireless Thermoprinter for SpiroSonic SMART

- ✓ Direct printing from SpiroSonic SMART
- ✓ Battery operated
- ✓ Portable size, no ink needed
- ✓ Available in USB and Bluetooth versions

The above information is subject to change without prior notice.



Part No. S2003

## Calibration Syringe

3L calibration syringe

- ✓ Highly precise
- ✓ Complies with ATS recommendations and European Medical device directives

Accuracy	3 l ±15 ml
Outlet	28 mm, made of silicone rubber
Syringe body	Powder Coated Aluminum
Dimensions	530 mm x 120 mm
Weight	2 kg



Part No. S4201

## Viral Bacterial Filter (Round mouthpiece)

Single-use bacterial and viral filter (50 pcs.)

- ✓ Bacterial and viral filter even submicron size
- ✓ 99.99% cross-contamination efficiency
- ✓ Tested and efficient at high flow rates



Part No. S4202

## Viral Bacterial Filter (Oval mouthpiece)

Single-use bacterial and viral filter (50 pcs.)

- ✓ Bacterial and viral filter even submicron size
- ✓ 99.99% cross-contamination efficiency
- ✓ Tested and efficient at high flow rates



Part No. S4205

## Plastic mouthpiece

Multi-use plastic mouthpiece (100 pcs.)

- ✓ Anatomically shaped mouthpiece
  - ✓ Easy to use with Bacterial and Viral Filters\*
- \*Only compatible with the Round Viral Bacterial Filter

# The Future of Hemodynamics

USCOM 1A uses **advanced Doppler hemodynamics** to monitor cardiac blood flow. **Stroke Volume (SV)** monitoring provides for accurate monitoring of **fluid, inotropes, and vasoactives**, and changes how we diagnose and manage **sepsis, heart failure and hypertension**.

## Fluid

Fluid remains one of the most common and poorly performed critical care interventions while appropriate guidance results in life saving results.

## Sepsis

Sepsis is a critical medical emergency characterized by circulation dysfunction, which ultimately results in circulatory failure and death. Accurate and immediate assessment of cardiovascular function results in life saving interventions with fluid, inotropes and vasoactives.

## Heart failure

Heart failure is the leading cause of death worldwide and early detection allows optimal management using administration of precision cardiovascular therapies.

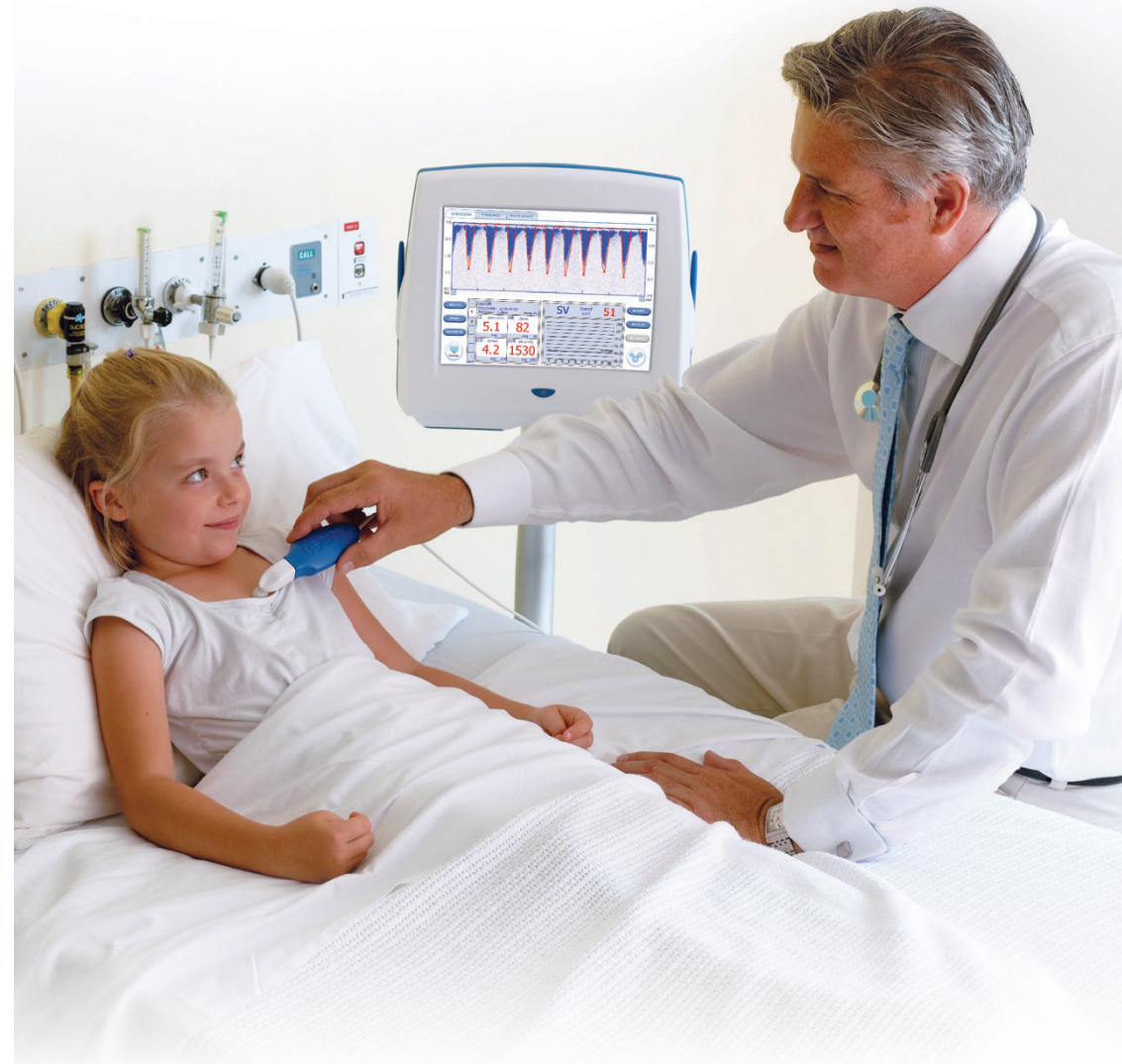
## Hypertension

Hypertension, a circulatory disease, is the no 1 cause of human morbidity and mortality, while early detection and management of underlying hemodynamic derangements can guide precision therapy and result in improved outcomes.

USCOM 1A is improving management and saving lives in the pediatric, neonatal, critical care, emergency, perioperative, maternal and perinatal populations.

USCOM 1A accurately measures blood flow, Stroke Volume and Cardiac Output across the aortic or pulmonary valve. Regardless of whether the patient is in sinus rhythm, atrial fibrillation, on vasopressors, on and off ventilation or experiencing active autonomic regulatory changes such as in sepsis, USCOM 1A is reliable. This sets the USCOM 1A apart from blood pressure monitoring devices.

**USCOM 1A - the safest and most accurate solution.**



**The USCOM 1A improves patient care by providing for accurate diagnosis and guidance of appropriate therapy**

# USCOM 1A

## Advanced non-invasive hemodynamic monitor

The **USCOM 1A** accurately, sensitively and directly measures SV or 'flow at the valve'. The device is safe and non-invasive, with innovative features that simplify operation.

The USCOM 1A has a short learning curve with excellent inter and intra-operator reproducibility.

For Neonates, Children and Adults.

- ✓ Touch screen operation
- ✓ Durable ergonomic transducer
- ✓ Exportable patient database
- ✓ Rechargeable battery
- ✓ Portable

### Saving lives and reducing cost

Accurate measurement of CO and SVR is essential to the effective treatment of hypertension, heart failure and pre-eclampsia. The USCOM 1A provides rapid, accurate and non-invasive measures of these values and is changing the way we treat hypertension.

The USCOM 1A Doppler ultrasound monitor is saving lives worldwide by improving our understanding of the circulation. While patients benefit from improved clinical care, hospital budgets benefit from the absence of costly disposables and shorter lengths of stay.

### Features

- ✓ CW Doppler Ultrasound
- ✓ Real Time Stroke Volume
- ✓ FlowTracer Automated Tracking
- ✓ Multiple Beat Averaging
- ✓ USCOM Flow Area Algorithm
- ✓ Smith-Madigan Inotropy Index
- ✓ MAP, Hb and SpO2 Input
- ✓ Advanced Parametric Trend Graphs
- ✓ Configurable Reports
- ✓ Disposable Free



### SPECIFICATION

Display	12.1" TFT LCD with LED backlight
Interface	AccuTouch - 5 wire resistive touchscreen
CPU	x86 compatible Low Power Fanless
Data Storage	More than 500,00 exams Solid State Disk
Ultrasonics	2.2MHz Transducer < 100mW/cm <sup>2</sup> output Digital signal processing with FFT Custom IIR filters Audio output
Transducers	Divergent beam profile Reliable long term targeting Ergonomic grip and handle Reusable
Communications	Ethernet - Network printing USB - Local printing USB - Flash drive export
Dimensions	310 x 350 x 180 mm
Weight	5.4 kg
Battery	8700 mAh Li-Ion Battery
Power Supply	Universal voltage with medical isolation



# Revolutionizing hypertension

BP+ is the most advanced central BP monitor for diagnosis and treatment of hypertension and vascular health.

**Cardiovascular disease** accounts for approximately 17 million deaths a year globally, or nearly 33% of all deaths. Hypertension accounts for 9.4 million of these deaths (or 55%). Control of BP in hypertension is achieved in less than 25% of patients using conventional BP monitors.

**Central BP** is different to brachial BP and responds differently to disease and therapy. High fidelity pulse pressure waves provide an improved understanding of hypertension, vascular disease, and appropriate cardiovascular therapy. BP+ provides a new window on cardiovascular function.

Uscom BP+ measures central aorta and upper-arm blood pressure and waveforms; information only previously available using invasive cardiac catheterization. Supra-systolic measurements record accurate and repeatable measurements using a familiar upper arm cuff.

The **BP+ Reporter** software can be coupled with the BP+ monitor to provide archiving of wave forms and data, analysis, trend monitoring and reporting on a customised format.

## Suprasystolic technology

The BP+ occludes the brachial artery allowing pressure measurements in the ascending aorta at the heart. While some devices use simple algorithms to convert arm pressure to pressure at the heart, only BP+ uses patent protected methodology to measure pressure directly at the heart. With the BP+, diagnosis and management of hypertension and cardiovascular risk can be guided non-invasively by data equivalent to that provided by a cardiac catheter.

## Pulse wave analysis

The Uscom BP+ generates unique central pulse pressure waveforms that can be used to calculate novel indices of vascular health. These new indices are the foundations of an evolving science likely to lead improved understanding and management of cardiovascular disease in hypertension, heart failure, critical care, general practice and home care.

The Uscom BP+ provides a simple and easy method to noninvasively measure central BP accurately.



Better measures.  
Better management. Better outcome.

# Uscom BP+

## Supra-systolic Central Blood Pressure (cBP) Monitor

The Uscom BP+ is a Supra-systolic oscillometric central blood pressure (cBP) monitoring device which measures blood pressure and blood pressure waveforms at the heart, as well as in the arm; information only previously available using invasive cardiac catheterization.

- ✓ Rapid and reliable central and brachial BP
- ✓ Precision waveforms, precision therapy
- ✓ Simple operation with familiar brachial cuff



### Non-invasive central BP

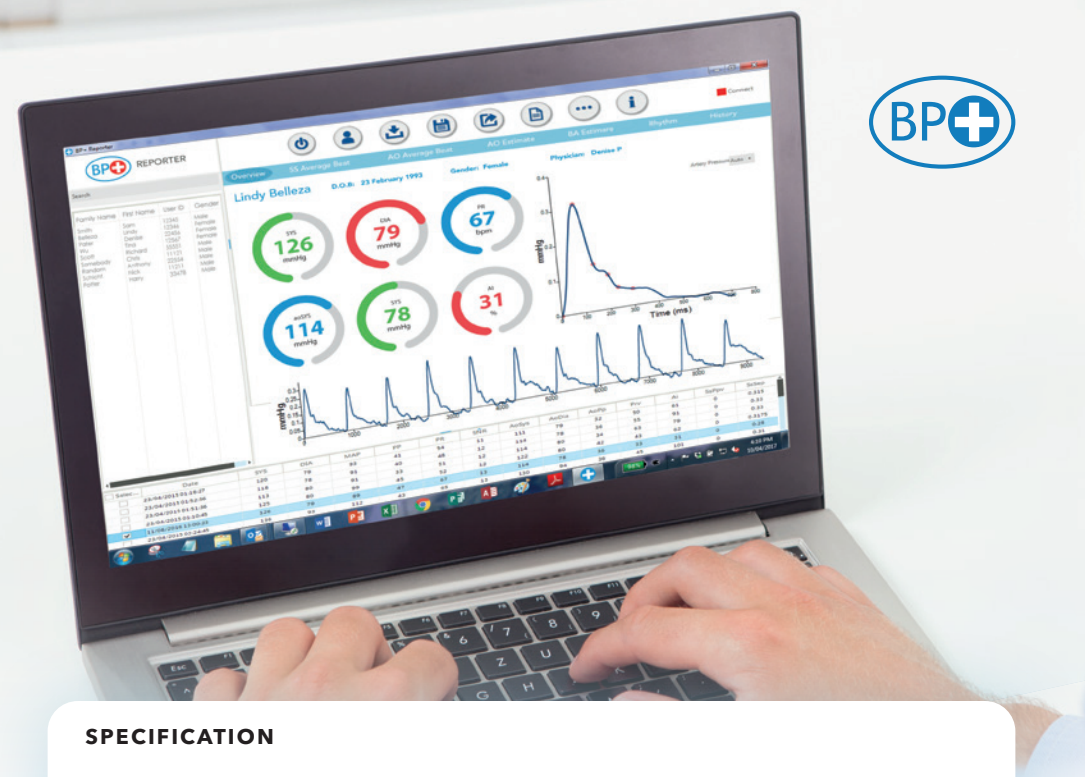
The BP+ and BP+ Reporter is the ideal cardiovascular research combination for the clinic or research laboratory. The Uscom BP+ replaces conventional and more widespread sub-systolic BP monitors, and is the emerging standard of care in hypertension, heart failure and vascular health. The Uscom BP+ provides a highly accurate and repeatable measurement of central and brachial blood pressure and pulse pressure waveforms for analysis (PWA) using a familiar upper arm cuff. The BP+ is simple to use and requires no complex training and has applications in hypertension, heart failure, intensive care and general practice.

Compared to peripheral blood pressure, central BP more accurately represents the BP that affects the internal organs. Central BP also responds differently to treatment than conventional brachial BP.



### BP+ Reporter Revolutionary Digital BP Software

- ✓ Unique proprietary digital archiving, analysis, trend monitoring, report generation and printing including new research parameters of cardiovascular performance
- ✓ Personalized reporting formats
- ✓ Cardiology rhythm strips



### SPECIFICATION

Brachial Cuff Measurements	SYS, DIA, MAP, PR, PP
Central Measurements	cSYS, cDIA, cMAP, cPP
PWA Measurements	sAI, sPR, pPX, cPX, sPRV, sPPV, sRWTTf, sRWTTp, sSEP, sdP/dt, cFF, cMPP, PPA
Systolic Range	40 to 280 mmHg
Diastolic Range	20 to 200 mmHg
Mean Range	25 to 245 mmHg
Measurement Accuracy	±5 mmHg, Standard Deviation 8 mmHg
Cuff Pressure Range	0 to 300 mmHg
Pulse Rate Range	30 to 240 bpm
Pulse Rate Accuracy	±5%
Dimensions	156 × 157 × 119 mm
Weight	730 g
Measurement Time	Typical measurement time within 45 seconds
Warranty	24 month warranty on the device 6 month warranty on cuffs





**Devices the experts use.**



**Uscom**



[uscom.com.au](http://uscom.com.au)  
[spirosonic.com](http://spirosonic.com)