

SPIROMETRY



BTL-08 SPIRO & BTL-08 SPIRO PRO

The BTL-08 Spiro & BTL-08 Spiro Pro are modern compact spirometers for performing noninvasive pulmonary function tests and managing patient records comfortably and quickly. The minimum operational costs of the units are ensured by reusable sensor that can be easily disinfected. The measurements are carried out with maximum accuracy in the wide range of air flow and minimum air flow resistance. The units feature in-built sensors for automatic BTPS correction of examination results. The results can be previewed on the large colour display prior to printing.

Main features & benefits:

- ◇ Portable desktop spirometer
- ◇ Integrated printer with 112mm paper width
- ◇ Colour touch screen (320x240dots) for simple and effective operation
- ◇ Real-time display of flow-volume and volume-time graphs
- ◇ Up to three curves in flow-volume graph
- ◇ Automatic best test selection with manual correction
- ◇ Bronchoprovocative testing
- ◇ Paediatric encouragement software
- ◇ Automatic interpretation (Enright, BTS, ATS)
- ◇ Automatic BTPS correction with automatic measuring of relative humidity, ambient temperature and barometric pressure
- ◇ Configurable output protocol
- ◇ Up to 250 patient records can be stored in the unit memory
- ◇ USB or RS-232 connection
- ◇ Disinfectable plastic mouthpieces or single use paper mouthpieces
- ◇ Built-in accumulator
- ◇ Complies with ATS/ERS 2005 standards , EN 13826 standard and safety standards EN 60601-1
- ◇ The spirometry sensor can be used with selected BTL-08 ECGs (BTL-08 LC Plus, BTL-08 LC, BTL-08 LT Plus, BTL-08 LT, and BTL-08 MT Plus)



colour touch screen 5.7"



alphanumeric keyboard



BTPS correction



automatic interpretation



re-usable sensor



user-defined profiles



patient database



HP printer compatible



multilingual unit



portability



rechargeable battery



cart



ACCESSORIES FOR BTL-08 SPIRO

Standard accessories for BTL-08 Spiro Pro system:

- ◇ Desktop spirometry unit
- ◇ Flowmeter with communication cable
- ◇ Set of reusable sensors with plastic mouthpieces (4pcs)
- ◇ Nose clip
- ◇ Thermal paper
- ◇ Table holder

Standard accessories for BTL-08 Spiro upgrade for ECGs:

- ◇ Flowmeter with communication cable
- ◇ Set of reusable sensors with plastic mouthpieces (4pcs)
- ◇ Nose clip
- ◇ Carry case

Optional accessories:

- ◇ Calibration syringe 3 litres / Ord. No. C08SP.014v100
- ◇ Antibacterial filter / Ord. No. C08SP.013
- ◇ Reusable sensor with plastic mouthpiece / Ord. No. C08SP.015v100
- ◇ Plastic mouthpiece / Ord. No. C08SP.011v100
- ◇ Paper disposable mouthpiece, 100pcs / Ord. No. C08SP.012
- ◇ Nose clip / Ord. No. C08SP.019
- ◇ Disinfection 2 litres / Ord. No. C08SP.018
- ◇ Thermal paper – 112mm, roll 25mm / Ord. No. C008.105v120
- ◇ Thermal paper – 210mm / refer to page 26
- ◇ Carry case / Ord. No. C08SP.021v100
- ◇ Table holder / Ord. No. C08SP.020v101
- ◇ Cart / Ord. No. P5002.125v100 (for BTL-08 Spiro Pro System)
Ord. No. P5002.128v100 (for BTL-08 Spiro upgrade for L line ECGs)
Ord. No. P5002.123v100 (for BTL-08 Spiro upgrade for MT Plus ECG)



Carry case for BTL-08 Spiro



Cart for BTL-08 Spiro

SPIROMETRY SPECIFICATIONS

	BTL-08 Spiro Pro	BTL-08 Spiro
Ordering No.	C08SP.002v100 (spirometry system) C08SP.003v100 (upgrade for ECGs)	C08SP.004v100 (upgrade for ECGs)
External unit		
Display	colour LCD touch screen	colour LCD touch screen
Dimensions of display (mm)	120 × 89	120 × 89
Screen resolution (dots)	320 × 240 RGB	320 × 240 RGB
Keyboard	combined alphanumeric and functional, touch screen buttons	combined alphanumeric and functional, touch screen buttons
Interface	RS232, USB	RS232, USB
Dimensions (mm)	330 × 270 × 74	330 × 270 × 74
Weight approx. (kg)	3.2	3.2
Operating conditions		
Ambient temperature	+ 10°C to + 40°C	+ 10°C to + 40°C
Recommended ambient temperature	+ 17°C to + 28°C (to avoid any provocative bronchial reaction)	+ 17°C to + 28°C (to avoid any provocative bronchial reaction)
Relative humidity	25 % to 95 %	25 % to 95 %
Barometric pressure	700 hPa to 1100 hPa	700 hPa to 1100 hPa
Printer		
Paper width (mm)	112 / A4 trough USB	112 / A4 trough USB
Paper type	roll / A4 – office paper	roll / A4 – office paper
Printer type	thermal / external laser or ink. printer	thermal / external laser or ink. printer
Printer resolution (dpi)	200 / 500 in Y / X axis	200 / 500 in Y / X axis
Measurement parameters		
BTPS correction	automatic	automatic
Inspire / Expire	yes / yes	yes / yes
Forced spirometry	FVC, Best FVC, FEV0.75, FEV1, Best FEV1, FEV3, FEV6, PEF, FEV0.75/FVC, FEV1/FVC, FEV3/FVC, FEV6/FVC, FEV0.75/SVC, FEV1/SVC, FEV3/SVC, FEV6/SVC, PIF, FIVC, FIV1, MEF75, MEF50, MEF25, FEF75, FEF50, FEF25, MMEF, FET25, FET50, MIF75, MIF50, MIF25, PEFT, FIF50, FEF50/FIF50, FEF50/SVC, FEV0.75/ FEV6, FEV1/ FEV6, FIV1/FIVC, VEXT, Lung age	FVC, Best FVC, FEV1, Best FEV1, FEV6 PEF, FEV1/FVC, FEV6/FVC, FIVC, FIV1, PIF, MEF75, MEF50, MEF25, Lung age
PRE/POST broncho-challenge test	yes	-
Relaxed spirometry	SVC, ERV, IRV, TV, IC, IVC	-
Maximum voluntary ventilation	MVV, MVVf, MRf	-
Predictive values	ECCS/ERS 1993, ECCS 1983, NHANES III, Knudson 1983, Knudson 1976, Roca 1986, CRAPO 1981, ITS, Perreira – Brazil, LAM, Gore – Australia, Zapletal 1977	
Stored records	250	50
User-defined profiles	unlimited	-
Interpretation	Enright, ATS, BTS	Enright, ATS, BTS
Child incentive	yes	yes
Technical specifications		
Flow range (litres/s)	16 l/s (inspire / expire)	16 l/s (inspire / expire)
accuracy (50 ml/s to 16 l/s)	± 5 % or 50 ml/s (whichever is greater)	± 5 % or 50 ml/s (whichever is greater)
Volume range (litres)	0.025 to 8 litres	0.025 to 8 litres
accuracy (0.025 to 8 l)	± 3 % or 50 ml (whichever is greater)	± 3 % or 50 ml (whichever is greater)
Flow resistance	< 79 Pa / l/s	< 79 Pa / l/s
BTPS correction:		
Temperature sensor	+ 10°C to + 40°C	+ 10°C to + 40°C
accuracy	± 3 % for 25°C	± 3 % for 25°C
Barometric pressure sensor	700 – 1200 hPa	700 – 1200 hPa
accuracy	± 2 %	± 2 %
Relative humidity sensor	0 to 100 % RH	0 to 100 % RH
accuracy	± 4 % for 25°C, 30 – 80 % RH	± 4 % for 25°C, 30 – 80 % RH
Mains supply	115 V / 230 V, 50 – 60 Hz, 40 VA	115 V / 230 V, 50 – 60 Hz, 40 VA
Accumulator capacity	3 – 4 hours	3 – 4 hours
Charging time	10 hours (if completely discharged)	10 hours (if completely discharged)
ADC resolution	12 bits	12 bits
Sampling frequency	1000 Hz	1000 Hz
Classification		
Safety standards	IEC 601-1, IEC 601-1-2, IEC 601-1-4, ISO 14971	
Spirometry standards	EN 13826, ATS / ERS Standards 2005	
Electrical protection class	II according to IEC 536	
Applied part	BF according to IEC 601-1	