

CuffLink

Non-Invasive Blood Pressure Simulator

Technical Data



The CuffLink Non-Invasive Blood Pressure (NIBP) Analyzer offers a quick, reliable, and consistent way to evaluate the operation and performance of oscillometric NIBP signals.

With user-programmable selections, the CuffLink will simulate the full range or normal, hypertensive, and hypotensive dynamic NIBP waveforms representing typical adult, infant, and neonatal patients. The analyzer can also generate normal, bradycardia, and tachycardia rhythm selections with a wide range of weak, normal, and strong peripheral pulses. A variety of parameters allow creation and storage of five custom autosequences within the unit. In addition to the programmable blood-pressure target values, these autosequences can include static pressure, leak, and over-pressure relief valve “pop-off” tests.

CuffLink features an internal compressor, automating the static pressure measurements, leak testing, and relief-valve testing. Setting and adjusting cuff pressure levels is easy and provides consistent cuff-inflation levels for the tests.

Key Features

- Dynamic oscillometric non-invasive blood-pressure simulation
- Automated static-pressure measurements, leakage testing, and relief-valve testing
- Five automated NIBP testing autosequences
- Five arrhythmia selections
- Adult and neonatal NIBP selections
- Adjustable heart rate values
- Direct interface with medTester 5000C

Technical specifications

Power

120/250 V ac, 50 W average, 100 W peak, 50/60 Hz

Analog outputs

Cuff pressure

0 mmHg to 499.95 mmHg FS \pm 1 % of reading, 10 mV/mmHg

Pulse pressure

0 mmHg to 5 mmHg FS \pm 1 of reading, 1 V/mmHg

Digital manometer

Pressure

499.75 mmHg (maximum)

Measurement parameters

Instantaneous and peak

Displayed graphics

Dynamic real-time NIBP cuff-pressure waveform programmed peripheral pulse and envelope waveforms

Display

Alphanumeric graphic display (LCD)

Alphanumeric mode

8 lines x 40 characters

Graphics mode

64 vertical x 240 horizontal dot matrix, backlight with viewing angle adjustment

Digital interfaces

RS-232/Serial

Bidirectional; downloads cuff measurement data and controls test features with a compatible computer or via the medTester 5000C with the medCheck option.

Parallel printer

Centronics compatible

Pulse sync

0 V dc to 5 V dc (TTL)

Cuff mandrel

Interlocking plastic blocks

Four cuff circumferences, including:

- 39.5 cm (large adult)
- 33 cm (adult)
- 26.6 cm (small adult)
- 20 cm (child)

Truncated plastic cylinders

Three neonatal cuff circumferences, including:

- 14 cm
- 10 cm
- 7.6 cm

Pop-off valve testing

Automatic test for operation of the monitor's relief valve

Measurement parameters

instantaneous and peak pressure

Maximum pressure

499.75 mmHg

System leak testing

Start pressure

499.75 mmHg max

Elapsed time

60 s (fixed)

Leak-rate range

0.25 mmHg/min to 499.75 mmHg/min

Pump

2 liters/minute minimum (free flow)

Accuracy

Systolic/diastolic mean arterial pressure (MAP)

\pm 1 % of target value

Cuff pressure

\pm 1 % of reading \pm 1 mmHg

Input overpressure limit

\pm 1500 mmHg

Autosequences

- Up to five user-programmable sequences to test NIBP monitors with a specific series of CuffLink performance tests, including static pressure test, leak test, and pop-off test
- Up to eight adult-neonatal-arrhythmia dynamic NIBP selections, each of which can be cycled up to 99 times during the sequence
- Printable test report

Displayed real-time parameters

Instantaneous cuff pressure

0 mmHg to 300 mmHg

Peak cuff pressure

500 mmHg peak

Inflate/deflate time

0.1 s to 999.9 s

Inflate/deflate rate

0.1 mmHg/s to 999.9 mmHg/s

Total measurement time

0 s to 999.9 s max

Selected heart rate

30 BPM, 40 BPM, 60 BPM, 80 BPM, 120 BPM, 160 BPM, 200 BPM, and 240 BPM

Selected systolic/diastolic target values

Mean Arterial Pressure (MAP) target value

Dynamic non-invasive blood pressure

Simulation of a range of normal, hypertensive and hypotensive dynamic noninvasive blood pressures for typical adult, infant, and neonatal patients. Generation of normal, bradycardia, and tachycardia rhythm selections with a wide range of user-programmable peripheral pulse amplitudes (weak, normal and strong)

Compatible with oscillometric NIBP devices

Preprogrammed target value selections

Adult systolic/diastolic (MAP) (mmHg):

- 60/30 (40)
- 80/50 (62)
- 400/65 (75)
- 120/80 (90)
- 150/100 (115)
- 200/150 (165)
- 255/195 (215)

Neonatal/pediatric systolic/diastolic

Above selections, excluding 255/195 and 200/150

Repeatability

\pm 1 % of selected target value

Adult arrhythmia selections

- Baseline NIBP target value (120/80) (NSR)
- Atrial fibrillation (A-Fib)
- Premature atrial contraction (PAC)
- Premature ventricular contraction (PVC)
- Missed beat (MB)
- Aberrant sinus conduction (AS)

Preprogrammed peripheral pulse waveforms

- Pulse amplitude at MAP: 2 mmHg (typical adult value)
- Pulse volume range: 0 ml to 5.1 ml
- Pulse rise time: 80 ms (min)
- Heart rates (adult and neonate): 30 BPM, 40 BPM, 60 BPM, 80 BPM, 120 BPM, 160 BPM, 200 BPM, and 240 BPM
- Heart-rate accuracy: ± 1 % of selected rate

Preprogrammable target value shifts

Horizontal axis: Preprogrammed target value selections shifted in 1.0 mmHg steps over a maximum range of ± 300 mmHg to increase or decrease dynamic pressure values

Vertical axis: Relative amplitude shifted in 1 % increments over a maximum range from 0 % to 200 % to simulate weak, normal, and strong peripheral pulses

Dimensions (LxWxH)

38.1 cm x 31.75 cm x 12.7 cm
(15 in x 12.5 in x 5 in)

Weight

6.82 kg (15 lb)

Ordering information

- 2246985** CuffLink Non-Invasive Blood Pressure Analyzer - US 120 V
- 2399820** CuffLink Non-Invasive Blood Pressure Analyzer - AUS 250 V
- 2399835** CuffLink Non-Invasive Blood Pressure Analyzer - DEN 250 V
- 2399873** CuffLink Non-Invasive Blood Pressure Analyzer - IND 250 V
- 2399858** CuffLink Non-Invasive Blood Pressure Analyzer - ISR 250 V
- 2399864** CuffLink Non-Invasive Blood Pressure Analyzer - ITAL 250 V
- 2399847** CuffLink Non-Invasive Blood Pressure Analyzer - SHK 250 V
- 2399886** CuffLink Non-Invasive Blood Pressure Analyzer - SWZ 250 V
- 2399899** CuffLink Non-Invasive Blood Pressure Analyzer - UK 250 V

Standard accessories

- 2242915** Operating Manual
- 2392381** Three Spacer Blocks
- 2392370** Two End Blocks
- 2392328** External Cuff Mandrel Neonatal
- 2245300** CuffLink Adapter Kit
- 2392832** Accessory Pouch

Optional accessories

- 2392381** Adult Cuff Mandrel Spacer Blocks (3 required)
- 2392370** Adult Cuff Mandrel End Blocks (2 required)
- 2392328** Neonatal/External Cuff Mandrel (truncated plastic cylinder diameters: 7.6 cm, 10 cm and 14 cm)
- 2392642** Cuff/Hose Adapter (Clippard): Critikon Dinamap, MDE, Invivo Research for Adult Cuffs

Optional accessories (continued)

- 2392656** Cuff/Hose Adapter (Colder): Protocol Systems
- 2392663** Cuff/Hose Adapter (OBAC): HP/Agilent/Philips, Alaris 4400
- 2392674** Cuff/Hose Adapter (Luer non-locking male): Critikon, Dinamap, MDE, Invivo Research, SpaceLabs Medical for Neonatal Cuffs)
- 2392688** Cuff/Hose Adapter (Luer-locking male)
- 2392695** Cuff/Hose Adapter (0.25 in barb)
- 2392707** Cuff/Hose Adapter (0.170 in barb)
- 2392718** Cuff/Hose Adapter (0.25 in barb): IVAC/Alaris 4200
- 2245300** CuffLink Adapter Kit (Complete set of eight cuff/hose adapters)
- 2392304** Quick Disconnect Panel Mount Connector (Replacement connector for NIBP interface)
- 2198760** Detachable Cord Set, 250 V/10 A - Australia
- 2200218** Detachable Cord Set, 250 V/10 A - Denmark
- 2200241** Detachable Cord Set, 250 V/10 A - Israel
- 2198785** Detachable Cord Set, 250 V/10 A - Italy
- 2200229** Detachable Cord Set, 250 V/10 A - Old British/India/South Africa
- 2248587** Multi-Purpose Hard-Sided Watertight Carrying Case (contains "pick and pluck" foam). WxDxH: 35.5 cm x 48.3 cm x 19.7 cm (14 in x 19 in x 7.75 in)

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