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 ± 1 % of reading, 10 mV/mmHg

Pulse pressure
0 mmHg to 5 mmHg FS ± 1 of reading, 1 V/mmHg

Digital manometer
Pressure
499.75 mmHg (maximum)

Measurement parameters
Instantaneous and peak pressure

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)
± 1 % of target value

Cuff pressure
± 1 % of reading ± 1 mmHg

Input overpressure limit
± 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
± 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

Optional accessories
2392656 Cuff/Hose Adapter (Colder): Protocol Systems
2392174 Cuff/Hose Adapter (OBAC): HP/Agilent/Philips, Alaris 4400
2392663 Cuff/Hose Adapter (Luer non-locking male): Critikon, Dinamap, MDE, Invivo Research, SpaceLabs Medical for Neonatal Cuffs
2392664 Cuff/Hose Adapter (Luerlocking male)
2392674 Cuff/Hose Adapter (Luer non-locking male): Critikon, Dinamap, MDE, Invivo Research, SpaceLabs Medical for Neonatal Cuffs
2392688 Cuff/Hose Adapter
2392695 Cuff/Hose Adapter (0.25 in barb)
2392707 Cuff/Hose Adapter (0.170 in barb)
2392718 Cuff/Hose Adapter (0.25 in barb)
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 - Israel
2200241 Detachable Cord Set, 250 V/10 A - Italy
2198785 Detachable Cord Set, 250 V/10 A - Denmark
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)

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)