

# BP-SiM Handheld NIBP Simulator



Technical Data Sheet 2009

Tried. Tested. Trusted.



**RIGEL**  
MEDICAL

**BP-SiM**

Heart Rate 80 bpm  
Systolic 120 mmHg  
Diastolic 80 mmHg  
MAP 93  
Pulse volume Medium

Default 0

NIBP

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# Introducing a new hand-held non invasive blood pressure simulator for the fast and accurate testing of all NIBP monitors.

The new Rigel BP-Sim incorporates a range of custom settings that include a variety of paediatric and adult NIBP pressures, pulse volume adjustments, heart rate and manufacturer-specific envelopes, referred to as O-curves.

The Rigel BP-Sim is the first hand-held NIBP simulator combining full performance features with a large capacity internal memory for the data capture, storage and subsequent downloading of test results for record keeping purposes.

In addition, Bluetooth-enabled technology allows the wireless connectivity of the tester with PCs and other accessory equipment for fast and convenient downloading of performance data and the uploading of manufacturers' O-curves and manufacturer specific test programs.

Other special features of the Rigel BP-Sim include an in-built pump to generate user specific pressure settings for comprehensive system leak tests and over-pressure tests. An integral digital manometer also enables highly accurate static pressure measurements to be taken using a wide range of selectable pressure units.

The new Rigel BP-Sim forms part of a comprehensive range of high performance specialist biomedical test equipment

supplied by Rigel Medical, part of the Seaward Group.

## Custom Test Settings

The unique setup in the Rigel BP-Sim not only allows you to configure your own test sequences or modify existing ones to suit your specific needs, the Rigel BP-Sim also includes a unique feature which enables the configuration of your own visual or acceptance test routines prior to an electrical safety test. These could be simple instructions to the user or observations required for your own maintenance procedures such as checking for certain labels, software versions and upgrades etc.

These features make the Rigel BP-Sim a truly versatile service tool that ensures all test data is captured and processed in one single test record thus maximising the traceability and allowing full flexibility in the field.

## Test 'n' Tag Compatible

The Rigel Test 'n' Tag system allows

## Key features

- Portable and Lightweight**  
 Ideal for field service technicians and insitu testing of NIBP performance
- Battery Operated**  
 For convenient and fast testing without mains power
- Manufacturer O-curves**  
 To ensure accurate simulations across a wide range of different brands and models
- Internal Pump**  
 Easy testing of pneumatic leaks and over-pressure valves
- Prepared for PPM Protocols**  
 Configured for automatic performance testing of a variety of parameters
- Full Keyboard**  
 Easy data capturing and asset management
- Intuitive User Interface**  
 Fast and easy navigation using graphics display
- Graphics Display**  
 Allowing real-time display of pressure curves and simulation data
- Bluetooth Communication**  
 PC download and future field upgrades
- Web Updates**  
 Enjoy easy updates through our website to benefit from the latest features

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customised Thermal PASS / FAIL Labels to be printed. The benefits of using the Test 'n' Tag printer are:

- Tough and durable labels
- Resistant to most solvents used in the medical sector
- Opportunity to advertise your logo and company details or emergency telephone number with every item you Test 'n' Tag.
- Automatic barcode generation enables easy use of the barcode scanner and speeds up test time.

The unique test 'n' tag label displays test status and retest due date, barcode and asset ID number, and person conducting the test.

#### Med-eBase PC Software

The BP-Sim is compatible with Med-eBase, a new and comprehensive download software package capable of producing asset management records and work schedules.

Use the software to configure a number of BP-Sim at the same time to ensure that all engineers work to the same test routines. Create customer test routines including test protocols for testing patient monitors (NIBP, SpO2, ECG etc.), defibrillators etc. Test protocols can be easily uploaded to the

BP-Sim using the Bluetooth connection.

Use your BP-Sim during functional testing to collect not only the electrical safety test record but also the performance of the Medical Device. The complete PPM in one single record.

Furthermore, the software allows you to produce certificates and print or email them to make sure test records are kept for future reference.

#### Key Features

1. Windows Explorer type user interface - layout
2. Download from BP-Sim to PC via BT
3. Upload from PC to BP-Sim via BT
4. Create Test Routines and configure multiple testers
5. Output of database to Excel / Access.
6. Database function
7. Test schedule function
8. Printing of Test Certificate
9. Store Test certificate as HTML for easy email application

#### Rigel BP-Sim Design Philosophy

The BP-Sim has been designed to address the increasing demand for smaller more comprehensive test equipment within the healthcare industry.

The challenge was to combine the benefits of the size and weight of a smaller hand-held NIBP Simulator with the test versatility and

### Applications

- Verify the correct performance of NIBP monitors
- Comprehensive system leak tests
- Testing of the over-pressure safety valves
- Accurate static pressure measurement

### What comes in the box?

- Carrying Case
- 5-pc tubing adaptor
- Power Supply
- Instruction Manual
- Bluetooth USB Adaptor
- Calibration Certificate
- Application Software

### Other products in the range

- Rigel SP-Sim SpO2 Simulator
- Rigel 333 ECG Simulator

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convenience of a larger bench-mounted simulator. Today's industry demands test equipment that can save time and cost, thus offering greater flexibility. These factors have all been taken into account during the development of the BP-Sim. The test capabilities and functionality exceed that of most common NIBP Simulator yet the instrument is only a fraction of the size and weight.

No other NIBP simulator on the market offers a hand-held enclosure with the test capabilities equal to most bench marked version interface, large internal memory,

Bluetooth communication, asset management facilities, user configurable performance tests and more.

We believe that the new BP-Sim is set to become the new standard in NIBP performance Testing.

# Biomed testing on the move.



## Tests in detail



### Integrated Keyboard

The integrated keyboard provides an easy solution to the increasing requirements for asset management. Capture the performance of the NIBP monitor on the BP-Sim and store in the onboard memory, including information regarding make, model, serial number, site & location. Using the Bluetooth interface, the data can be easily downloaded to a PC application.



### Displaying the dynamic simulation parameters

Thanks to its large 1/4 VGA display, the BP-Sim is able to display all the simulated parameters into a single and easy to read screen. The real time battery charge indicator ensures clear indication of the remaining battery life.



### Displaying the Leak test

The Leak test screen enables the user to easily set the required pressure level and time duration of the leakage test. Not only will this test the system's air-tightness, the leak test can also be used to generate required pressures for static calibration tests on your NIBP monitor.



### Displaying the Over-pressure valve test

The internal pump within the BP-Sim can be used to record the set point of the over pressure protection valve in your NIBP monitor. The graphic representation of the pressure curve as well as the set point read out provide a clear result of the correct operation.



### Displaying the Digital Manometer

The BP-Sim can be used as a digital manometer, providing a selection of pressure units for optimum read out. The available pressure units are: mmHg, inHg, kg/cm2, cmH2O, mBar, PSI, inH2O and kPa.

## Rigel's Med-eKit can include the following:



### 288 Electrical Safety Analyser

- Light, hand-held, battery operation
- Conform IEC 62353 / 60601 / VDE 0751 / NFPA-99 / AS-NZS 3551
- Memory for up to 10,000 devices
- Bluetooth communication
- Full, semi automatic & manual tests



### BP-Sim NIBP Simulator

- Light, hand-held, battery operation
- Adult & Paediatric NIBP Simulations
- Manufacturer specific O-curves
- Overpressure and leak test
- Memory for up to 10,000 devices



### SP-Sim SpO2 Simulator

- Light, hand-held, battery operation
- Tests probe and monitor all at once
- User configurable simulations
- Manufacturer R-curves
- Memory for up to 10,000 devices

### As well as:

- Patient Simulator
- Flow Analyser
- Defib Analyser
- Printer
- Barcode Scanner
- Asset Management Software
- Non-Rigel Test Equipment

## SPECIFICATIONS

### Technical Specifications

Waveform	Oscillometric
Envelopes (O-curves)	TBC, updates available through <a href="http://www.rigelmedical.com">www.rigelmedical.com</a>
Simulation via	T connection into Cuff and monitor
Pulse Volume	High, Medium, Low, paediatric
Heart rate	1 - 300 bpm
Integrated Pump	0 to 350 mmHg user configurable
Leak test	user configurable between 0-350mmHg
Chronometer	configurable upto 999 secs
Overpressure	automatic (max 410 mmHg)
Digital Manometer	0 - 410 mmHg
Accuracy	+/- 0.5% FS
Pressure Units	mmHg, inHg, kg/cm2, cmH2O, mBar, PSI, inH2O and kPa

### General

Operation	Battery cell, insitu charge
Battery charger	110-230VAC, 50/60 Hz
Battery life	standby appr. 8 hours or 100 NIBP simulations
Memory Capacity	Appr. 10,000 records
Communication	Via Blue Tooth
Display	Monochrome, ¼ VGA full graphics
Keypad	Alpha-numeric
Weight	<1 kg
Size (L x W x D)	270 x 110 x 75 mm / 10.5 x 4 x 3"
Operating conditions	10-30'C, 0-90% RH - NC
Storage environmen	-15' - +60'C
Environmental Protection	IP 40

**Part number:** 370A910

## Also available

### From Rigel Medical

- Rigel 266 Plus Manual Safety Analyser
- Rigel 277 Plus Automatic Safety Analyser
- Rigel 288 Hand - held Safety Analyser
- Rigel SP-Sim SpO2 Simulator
- Rigel 333 Patient Simulator
- Rigel 344 Defibrillator Tester
- Rigel 355 Ventilator Tester
- Rigel 377 Electrosurgical Analyser
- Rigel 601 Checkbox
- Med-eBase – Software Application

### From the Seaward Group

- Portable Appliance Testers
- IEC Lead Tester
- Insulation Resistance Testers
- RCD Testers
- Earth Loop Impedance Testers
- Installation Testers
- Multimeters
- Current Clamps
- Hipot Testers
- Earthbond Testers
- Micro Ohmmeters