Rigel UNI-SiM Lite

The most cost-effective patient simulator on the market

The UNI-SiM Lite is a handheld and battery-operated vital signs simulator, designed to be a cost effective and portable solution for carrying out spot checks and full PM’s on vital signs monitors, wherever the job takes you.

With synchronized vital signs parameters, fast boot up and single button simulation to repeat the last simulation value in seconds, the UNI-SIM Lite is a quick and easy-to-use simulator for basic spot checks.

User configurable heart rate, SpO2 values, systolic and diastolic NiBP pressures make the UNI-SiM Lite a truly versatile tool capable of meeting even the most demanding test protocols.

Compatibility with the Rigel PULS-R universal SpO2 simulation finger enables accurate and repeatable SpO2 values. Unique probe positioning LEDs help to ensure the correct positioning of SpO2 probes, improving accuracy and repeatability.

Key Features
- Compact and cost-effective
- Simultaneous vital signs simulation
- Fast start up and single button simulation
- User definable systolic and diastolic NiBP simulations
- Universal SpO2 simulation
- Compatible with PULS-R SpO2 simulation finger

Patient Simulator Functions
- NiBP (systolic and diastolic)
- ECG
- Respiration
- SpO2
- IBP
- Temperature

Accessories
A wide range of accessories is available for the UNI-SiM Lite. To find out more, visit www.seaward-groupusa.com/sim-accessories

Download your FREE introduction to measuring and simulating Vital Signs
www.seaward-groupusa.com/guides
**Compact and cost-effective**

A highly cost-effective and compact solution for testing 6 of the most common vital signs using a single battery-powered simulator.

**Simultaneous vital signs simulation**

To provide a realistic simulation of the human vital signs, all parts of the UNI-SIM Lite simulator are synchronized and originate from a single heart rate control, including NiBP, SpO2 and ECG.

**Fast start up and single button simulation**

Automatic power-up of the most recent settings provides simulation of all 6 vital signs with the press of a single button, saving valuable time when setting up the simulator.
User definable systolic and diastolic NiBP simulations
User configurable and physiologically correct systolic and diastolic pressures provide a truly universal and accurate NiBP simulator.

Universal SpO2 simulation
Reduce the need for separate accessories with the universal PULS-R SpO2 simulation finger, compatible with all of the common SpO2 technologies.

This compact SpO2 simulation enables accurate SpO2 simulations in 1% resolution from as low as 30%* using the pre-programmed manufacturer specific R-curves. *subject to monitor capability

Easy and accurate probe placement with PULS-R
Unique probe placement LED’s ensure accurate and correct simulation for each type of SpO2 probe.

The Rigel PULS-R has status LEDs which light up to indicate whether a probe connection has been achieved

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[external links]

www.seaward-groupusa.com/UniSim-Lite
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Technical Specifications - UNI-SiM Lite

Non-Invasive Blood Pressure Simulation
- Waveform: Oscilometric
- Pulse Volume: High, Medium, Low, Paediatric
- Heart Rate: 20 - 300BPM
- Integrated Pump: 0 to 350mmHg user configurable
- Leak Test: User configurable between 0-350mmHg
- Chronometer: Configurable up to 999 secs
- Digital Manometer: 0 - 410mmHg
- Pressure Accuracy: +/- 0.5% FS
- Pressure Units: mmHg, inHg, kg/cm², cmH₂O, mBar, PSI, inH₂O and kPa

Oxygen Saturation Simulation (with PULS-R)
- Range: 30 to 100%
- Repeatability: ± 5%** of reading between 30-59% SpO₂
  ± 3% of reading between 60-99% SpO₂
  ± 3% of reading between 90-100% SpO₂

Heart Rate: 30-300BPM***
Accuracy: ± 1 BPM
Compatibility: Beijing Choice, Criticare, GE Tuffsat, Masimo, Mindray, Nellcor, Nellcor Oximax, Nihon Kohden, Nonin, Novametrix, Philips / HP

Myocardial Infarction
- Type: Ischemia, Injury, Infarction, Inferior Infarction
- Heart Rate: 20 – 300BPM

Tall T
- Heart Rate: 80BPM
- T Wave Amplitude: 0 – 1.2mV (steps of 0.1mV)

Arrhythmia Waveforms (Atrial)
- Simulation: Full 12 lead simulation
- Amplitudes: 0.5 / 1 / 1.5 / 2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5mV
- Heart Rate: 20 – 300BPM

Atrial Conduction
- Sinus Arrhythmia (SA), Missing Beat, Atrial Flutter (AFLT), Atrial Fibrillation (AFB), Paroxysmal Atrial Tachycardia (PAT), Junctional Premature Contraction

Atrial
- First Degree AV Block, Second Degree AV Block - Mobitz I, Second Degree AV Block - Mobitz II, Third Degree AV Block, Right Bundle Branch Block (RBB), Left Bundle Branch Block (LBB), Left Anterior Hemiblock

Ventricular
- Premature Ventricular Contraction - Intermittent Premature Ventricular Contraction – Continuous, Bigeminy, Trigeminy, Ventricular Flutter (VFT), Ventricular Fibrillation Fine (VFBB), Ventricular Fibrillation Coarse (VFBC), Monomorphic Ventricular Tachycardia (MVT), Polymorphic Ventricular Tachycardia (PVT), Right Focal (PVC)

Performance Waveforms
- Shape: Sine, Square, Triangle and Pulse
- Rates: 0.1 to 0.9Hz (in steps of 0.1)
  1 to 100Hz (in steps of 1)
- Amplitudes: 0.5 / 1 / 1.5 / 2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5mV
- Pulse: 1mV, 4 sec delay (20ms pulse duration)

Pacer Waveforms
- Available: Synchronous Atrial, Asynchronous Atrial, Paver only, Ventricular Pacer, Atrial & Ventricular Acer
- QRS: 1mV
- Pacer Pulse: 0.1 – 2mV
- Amplitude: Positive, Negative
- Pacer Pulse width: 0.1 – 2ms

R Wave Detection
- Heart Rate: 70BPM
- R Wave Width: 10 – 120ms (steps of 10ms)
Technical Specifications - UNI-SiM Lite (Continued)

Temperature Simulation
Simulation YSI 400 / 700 Static
Range Preset at 25, 33, 37 and 41°C
Accuracy ±0.1°C
Default Setting YSI 400 37°C

Respiration Simulation
Rates 5, 10, 15, 30, 60, 120, 180 Breaths per Minute
Base Resistances 250, 500, 750, 1000Ω
Accuracy ±5%
Resistance 0.1, 0.5, 1.0, 1.5Ω
Variations ±10%
Default Settings 15 BPM / 250Ω / 0.1Ω
Apnoea Simulation 0 – 60 seconds duration 0 – 300 seconds interval

Invasive Blood Pressure Simulation
Channels 2 channels,
Static 0 to 300mmHg (0 - 5.8PSI)
Dynamic 0-300mmHg for Systolic & Diastolic
Accuracy ± 1mmHg
Excitation Voltage 2V to 16V
Impedance 350Ω Nominal
Simulated 5µV/V/mmHg

General Specifications - UNI-SiM Lite
Operation Battery cell, in-situ charge
Battery Charger 100-240VAC, 50/60Hz
Supply 12VDC centre positive
Battery Life 8 hours standby or a maximum of 200
NIBP simulations
Communication via Bluetooth
Display Monochrome, 1/4 VGA full graphics
Keypad Alpha-numeric
Weight <3.5lbs
Size (L x W x D) 10.5 x 4 x 3"
Operating 50°F-104°F, 0-90% RH - NC
Conditions Storage 5°F - +140°F
Environment IP 40
Protection

Service & Warranty
UNI-SiM Lite comes with a free upgraded 24 month warranty
(subject to terms and conditions, available at
www.rigelmedical.com/register-product)

Standard Accessories (supplied with UNI-SiM Lite)
- Carry case
- ECG snap-on adaptors
- NIBP tubing kit
- Quick start guide
- ECG adaptor module
- US 120VAC Power supply

Optional Accessories
- IBP connect cables
- Temperature connect cables
- NIBP accessories
- ECG cables and leads

To find out more, visit www.seaward-groupusa.com/sim-accessories

Specifications - PULS-R
Supported Default R Curves:
- Beijing Choice: Criticare
- GE Tuftsat: Masimo
- Mindray: Nellcor
- Nellcor Oximax: Nihon Kohden
- Nonin: Novametrix
- Philips / HP

Part Numbers
- UNI-SiM Lite 370A934
- PULS-R 399A910

Technical specification subject to change without notice.
Rev 1, 2015

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