



CMC
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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.

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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.

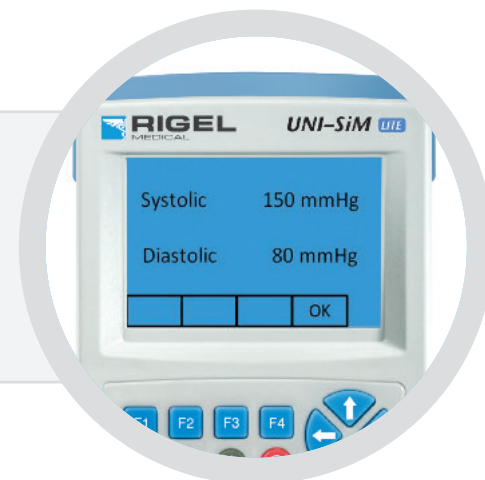
► Fast start up and single button simulation

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

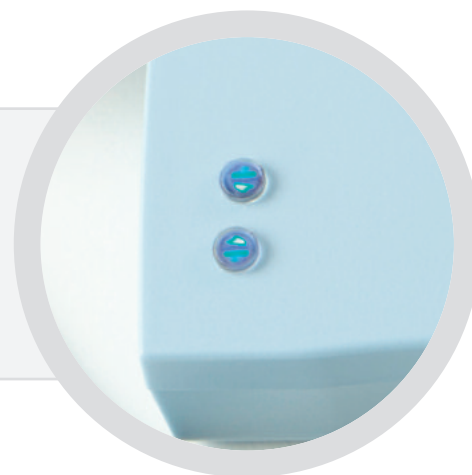
Reduce the need for separate accessories with the universal PULS-R SpO2 simulation finger, compatible with all of the common SpO2 technologies.

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



Technical Specifications - UNI-SiM Lite

Non-Invasive Blood Pressure Simulation

Waveform	Oscillometric
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 (SP02 Adapter boxes)

Simulation	Optronic (Electronic & Optical) Infarction
Simulation via	probe & full chain
Range	50 to 100%
Accuracy	± 0.5% of reading between 80-100% SPO2 ± 1% of reading between 50-79% SPO2
Heart rate	20-300 bpm
Accuracy	± 1 bpm
Compatible technology	GE - Datex, Nellcor, N.Oximax, Masimo, Datascope, Mindray, Nonin, Philips (HP)
Perfusion Index	0-20% (5% default)
Chronometer	test option to test response time SPO2 monitor.

Oxygen Saturation Simulation (PULS-R)

Range	30 to 100%
Repeatability	± 5%** of reading between 30-59% SPO2 ± 3% of reading between 60-89% SPO2 ± 1% of reading between 90-100% SPO2

Accuracy of simulation when used with the corresponding R-curves

*Based on using the same probe and monitor setup

**Note that some monitor types might not be able to display low range sats

Heart rate	30-300 bpm***
Accuracy	± 1 bpm
Compatibility	Beijing Choice, Criticare, GE Tufts, Masimo, Mindray, Nellcor, Nellcor Oximax, Nihon Kohden, Nonin, Novamatrix, Philips / HP

***Subject to monitor capability

ECG Arrhythmia Simulator

Simulation	5 lead simulation including high level output on Normal Sinus Rhythm (NSR), ST Elevation, ST Depression, Myocardial Infarction, Tall T
Heart Rate	20 - 300BPM
Accuracy	±1BPM
Amplitudes	Lead II : 0.5 - 5 mV (in steps of 0.5 mV). Other leads are proportional to Lead II by the following percentages: Lead I : 60 % Lead II : 100 % Lead III : 40 % V1 : 63 % [Reference LA] V2 : 71 % [Reference LA] V3 : 68 % [Reference LA] V4 : 80 % [Reference LA] V5 : 55 % [Reference LA] V6 : 49 % [Reference LA]

Accuracy	±2%
Connection	high-level ECG
	3.5 mm jack plug

ST Elevation / Depression

Heart rate	20 - 300 BPM
Elevation %	7%, 13%, 20%
Elevation slope	positive, negative, flat

Myocardial Infarction

Type	Ischemia, Injury, Infarction, Inferior Infarction
Heart rate	20 - 300 BPM

Tall T

Heart Rate	80 bpm
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 / 5 mV.
Heart rate (where applicable)	20 - 300 BPM

Atrial

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

Atrial Conduction

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 (VFLT), 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 / 5 mV.
Pulse	1mV, 4 sec delay (20ms pulse duration)

Pacer Waveforms

Available	synchronous atrial, asynchronous atrial, pacer only, ventricular pacer, atrial & ventricular pacer
QRS	1mV
Pacer Pulse Amplitude	0.1 - 2 mV
Pacer pulse Polarity	positive, negative
Pacer pulse width	0.1 - 2ms

R Wave Detection

Heart Rate	70 bpm
R wave width	10 - 120 ms (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	
Variations	0.1, 0.5, 1.0, 1.5 ohms
Accuracy	±10%
Default Settings	15bpm / 250Ω / 0.1Ω
Apnoea Simulation	0 – 60 seconds duration 0 – 300 seconds interval

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, ¼VGA full graphics
Keypad	Alpha-numeric
Weight	<3.5lbs
Size (L x W x D)	10.5 x 4 x 3"
Operating Conditions	50°F-86°F, 0-90% RH - NC
Storage	5°F - +140°F
Environment	
Environmental Protection	IP 40

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 Tufts	Masimo
Mindray	Nellcor
Nellcor Oximax	Nihon Kohden
Nonin	Novamatrix
Philips / HP	

Heart Rate Setting	30-300BPM (subject to monitor compatibility)
Operating Temperature	0-104°F
Dimensions	3.08" x 2.68" x 1.14"
Finger Shape	1.58" x 0.71"

Part Numbers

UNI-SiM Lite	370A934
PULS-R	399A910

Technical specification subject to change without notice.

Rev 1.1