

The Gold Standard in Handheld Oximetry Testing

Only Manufacturer Certified Simulator with Accurate SpO2 R-Curves!!

Certified by Masimo for testing Masimo® & Masimo® Rainbow Pulse Oximetry Technologies



SpO2 Optical Finger Option

- **The Most Accurate Pulse Oximetry Tester**
We've redesigned our Gold Standard SmartSat Pulse Oximetry Analyzer into our new SmartSat Handheld Pulse Oximetry Analyzer. Our second generation SmartSat Handheld performs optical, electrical and probe testing and is the most comprehensive SpO2 Analyzer and Probe Tester available. Using our patented simulation technology, SmartSat Handheld delivers the most accurate and widest simulation range for pulse oximeters. No other SpO2 simulator can match SmartSat's performance.
- **Manufacturer-Certified SpO2 Simulation**
SmartSat Handheld was developed with, and certified by, the world's leading pulse oximetry manufacturers. Its used by manufacturers for simulation and testing in engineering, production, marketing and sales and service and support of medical devices that utilize pulse oximetry.

- **Accurately tests Masimo's® Rainbow Technology & Other New Pulse Oximetry Technologies**
SmartSat Handheld tests Masimo Rainbow's pulse oximetry and is also designed to simulate and test the new generations of pulse oximeters and pulse oximeter probes. It is fully upgradeable, which makes it a wise investment.
- **Built-In Probe Analyzer**
SmartSat Handheld also includes a second generation built in probe analyzer. Quickly test probes for opens, shorts, even intermittent ones. Our improved probe analyzer fully tests and diagnoses the probe wires, connector, shielding and optics.
- **Efficient and Easy To Use**
Test a pulse oximeter and probe quickly and efficiently. Other simulators require you to scroll through many menus, with SmartSat Handheld, you can adjust the oximeter R-Curve, Saturation Rate, Heart Rate and Pulse Modulation on one easy to read screen. Simply highlight and change the desired setting.

Clinical Dynamics

clinicaldynamics.com

Clinical Dynamics Corporation
10 Capital Drive • Wallingford, CT 06492 USA
800.247.6427 Toll Free • +1.203.269.0090 International • Fax: +1.203.269.3402
ClinicalDynamics.com • sales@ClinicalDynamics.com

SmartSat™ Handheld Pulse Oximetry Analyzer

Technical Specifications



SpO2 Simulator

Oxygen Saturation (SpO2)

Range: 0-100 SpO2%
Resolution: 1 SpO2%
Accuracy: ± 0.5 SpO2%, 70-100 SpO2%
 ± 1 SpO2%, 50-69 SpO2%

Pulse Rate

Pulse Rate Range: 15 - 330 bpm
Pulse Rate Accuracy:
15 - 300 bpm: ± 0.5 bpm
301 - 330 bpm: ± 1 bpm

R-Curves (Red/IR Ratio)

R-Curves specify the relationship between the Red/IR ratio measured by pulse oximeters and the SpO2 value displayed. R-curves are obtained by each pulse oximeter manufacturer during clinical trials.

Preset Manufacturer's R-Curves (14): BCI, Criticare, CSI-Spot, Datascope, Datex, Masimo, Nellcor, Nellcor, OxiMax, Nihon Kohden, Nonin, Novamatrix, Ohmeda, Philips Medical & Sensormedics

Please contact the factory for the availability of other R-Curves.

Pulse Modulation Amplitude

Simulates the effect of tissue perfusion

Range: 0.01 - 20.0%
Resolution: .05%

Ambient Light

Simulates the ambient light level "seen" by the oximeter probe

Range: DC Level & AC
Level: (5-255% DC) (0-255% AC)
Resolution: 1%
Accuracy: $\pm 1\%$

Flicker Frequency Presets (6): 60 Hz
120 Hz
121 Hz
50 Hz
100 Hz
101 Hz

Motion Artifact

Global Amplitude Range: 0-100
Local Amplitude Range: 0-100
Frequency: 1-100 Hz

Arrhythmias

Simulates cardiac arrhythmias by altering the plethysmographic pulse amplitude and pulse rate.

Arrhythmias (5): Asystolic Pause
User Defined
Atrial Fibrillation
Tachycardia
Bradycardia

Auto Sequences

Preset Auto Sequences automate pulse oximeter testing.

Standard Presets (100 Total)

15 factory Samples Provided:

- All autosequences are user configurable
- User configurations are saved, replacing factory samples

Remote Control

The SmartSat can be operated via remote control through its Mini USB port and duplicate all front panel operations.

Probe Analyzer

Probe Continuity Test

Simultaneous Channels:

2 for Nellcor-style probes: LED & PhotoDiode circuits

3 for Ohmeda-style probes: Red LED, IR LED & PhotoDiode circuits

Test Mode: Constant Current Stimulus, Voltage Output

Constant Current Stimulus: 500 μ A

Intermittent "Glitch" Detection: Detects open circuits and short circuits, 1 msec or longer

General

Display

Graphic LCD
Resolution: 128 x 64 pixels
LED Backlight

Communication Port

Universal Serial Bus (USB)

Power Supply

100-240 VAC, 50 watts, 50-60 Hz, Desktop Switcher
Output: 24VDC @ 2.1A, 6 foot cable
Safety Agency Approvals: UL, CE, TUV
• Li-Ion Rechargeable Battery

Weight

1.75 pounds (0.79 kilograms)

Dimensions

4.25" Wide x 2" High x 10.5" Long
(108 mm Wide x 51 mm High
x 191 mm Long)
Includes Built-in Adult Cuff Support

SmartSat Cables

The following Simulator and Probe Analyzer cables are available for purchase.

Please contact Clinical Dynamics for details.

SpO2 Simulator Adapter Cables: BCI, Criticare, CSI-Spot, Datascope, Datex, Ohmeda, Hewlett-Packard, Masimo, Masimo Rainbow, Nellcor /OxiMax, Nihon Kohden, Nonin, Novamatrix, Sensormedics, & Tuffsat

Probe Analyzer Adapter Cables: Criticare, Datascope, Datex, Hewlett-Packard, Masimo, Nihon Kohden, Novamatrix & Sensormedics

1 Adapter Cable allows use of Legacy SmartSat Cables.

Optional Accessories

Carry Case
Optical Finger Simulation Option