

# MASIMO Radical-7™

Providing upgradable rainbow technology in multiple configurations for maximum clinical flexibility



Choose the noninvasive measurements that are right for your clinical setting—oxygen saturation, pulse rate, and perfusion index in addition to total hemoglobin, total arterial oxygen content, PVI, carboxyhemoglobin, and methemoglobin

# Masimo Radical-7



- > Featuring "gold standard" Masimo SET® pulse oximetry, proven in more than 100 independent and objective studies to provide the most accurate and reliable SpO<sub>2</sub> readings during motion and low perfusion.
- > Upgradable Masimo Rainbow SET technology platform lets you add total hemoglobin (SpHb™) and total arterial oxygen content (SpOC™) as a factory-ordered option or through simple field-installed software upgrades.
- > Additional upgrades allow you to continuously and noninvasively measure carboxyhemoglobin (SpCO®), methemoglobin (SpMet®), and PVI™.



## MASIMO RADICAL-7 AS A HANDHELD OR BEDSIDE CO-OXIMETER

The Radical-7 easily detaches from the bedside unit as a full-featured handheld pulse co-oximeter. The onboard rechargeable 4-hour battery and >10 day trending facilitate both hospital transport and spot check applications.



## MASIMO SATSHARE

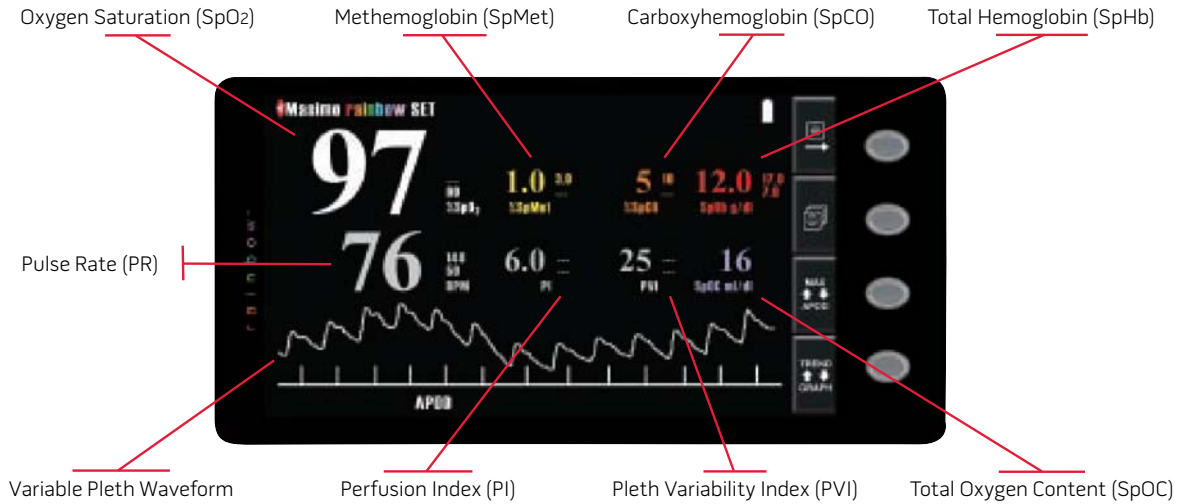
Upgrade your current system to Rainbow technology simply by linking the Radical-7 to a host monitor's oximeter input connector. Get Masimo SET SpO<sub>2</sub> readings on more than 100 multiparameter monitors and SpHb, PVI, SpCO and SpMet readings on the Radical-7 itself.



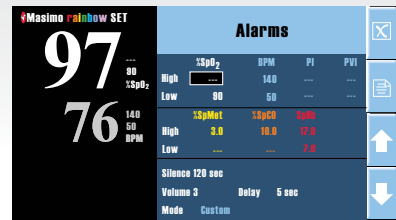
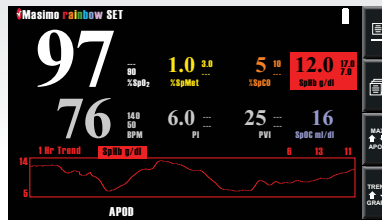
## GRAVITY ACTIVATED ROTATION

Automatic display rotation (Gravity Activated) provides for vertical and horizontal positioning to maximize space utilization and visibility.

MASIMO RAINBOW SET MEASUREMENTS GIVE YOU A MORE COMPLETE PICTURE OF YOUR PATIENTS' PHYSIOLOGICAL STATUS



EASILY CONFIGURED TO MEET YOUR SPECIFIC CLINICAL NEED



Allows for continuous monitoring of all parameters along with a plethysmograph waveform and Signal IQ indicator (below pleth) to provide confidence in the quality of the values displayed

The quick-trend feature allows for one-touch access to vital parameter trending information to instantly evaluate patient condition and illness severity. Auto-scaling feature allows the y-axis to automatically change with fluctuations in the measurement value

One-touch menu provides quick access to the most commonly used features and allows for quick configuration and management of parameter alarm settings

- > The Radical-7 features a bright multi-color or monochromatic screen that is easy to read in either vertical or horizontal orientation—perfect for at-a-glance readings in a variety of clinical settings.
- > Patented 3D alarms provide thresholds for desaturations and perfusion index based on clinician-specified severity and frequency, enhancing patient safety.
- > Optional external wireless radio allows The Radical-7 to communicate with Masimo Patient SafetyNet, the remote monitoring and clinician-notification system that helps you keep at-risk patients safe on general care floors.



## PERFORMANCE

### MEASUREMENT RANGE

SpO <sub>2</sub>	0 – 100%
SpMet	0 – 99.9%
SpCO	0 – 99%
SpHb	0 – 25 g/dL
SpOC	0 – 35ml of O <sub>2</sub> /dL of blood
Pulse Rate	25 – 240 bpm
Perfusion Index	0.02 – 20%
PVI	0 – 100%

### OXYGEN SATURATION ACCURACY (%SpO<sub>2</sub>)

Saturation	60 – 80%
No Motion	
Adults/Infants/Pediatrics	± 3%
Saturation	70 – 100%
No Motion	
Adults/Infants/Pediatrics	± 2%
Neonates	± 3%
Motion	
Adults/Infants/Pediatrics/Neonates	± 3%
Low Perfusion	
Adults/Infants/Pediatrics/Neonates	± 2%

### PULSE RATE ACCURACY

Pulse Rate	25 – 240 bpm
No Motion	
Adults/Infants/Pediatrics/Neonates	± 3 bpm
Motion	
Adults/Infants/Pediatrics/Neonates	± 5 bpm
Low Perfusion	
Adults/Infants/Pediatrics/Neonates	± 3 bpm

### CARBOXYHEMOGLOBIN SATURATION ACCURACY (%SpCO)\*

Adults/Infants/Pediatrics	1 – 40% ± 3%
---------------------------	--------------

### METHEMOGLOBIN SATURATION ACCURACY (%SpMet)\*

Adults/Infants/Pediatrics/Neonates	1 – 15% ± 1%
------------------------------------	--------------

### TOTAL HEMOGLOBIN ACCURACY (SpHb g/dL)

Adults/Infants/Pediatrics	8-17 g/dL ± 1 g/dL
---------------------------	--------------------

### RESOLUTION

Oxyhemoglobin Saturation (%SpO <sub>2</sub> )	1%
Carboxyhemoglobin Saturation (%SpCO), digital display	1%
Methemoglobin Saturation (%SpMet), digital display	0.1%
Total Hemoglobin (SpHb g/dL)	0.1 g/dL
Pulse Rate (bpm)	1 bpm

### ELECTRICAL

#### STANDALONE

AC power requirements	100 – 240 VAC, 47 – 63 Hz
Power consumption	.55 VA
Fuses	1 Amp, Fast Acting, Metric, (5x20mm), 250V

### BATTERIES

#### HANDHELD

Type	NiMH
Capacity (battery life)	4 hours
Charging time	3 hours

#### STANDALONE (MODEL RDS-1B ONLY)

Type	NiMH
Capacity (battery life)	10 hours
Charging time	6 hours

### ENVIRONMENTAL

Operating temperature	41°F to 104°F (5°C to 40°C)
Storage temperature	-40°F to 158°F (-40°C to + 70°C)
Operating humidity	5% to 95%, noncondensing
Operating altitude	500 mbar to 1060 mbar pressure -1000 ft to 18,000 ft (-304 m to 5,486 m)

### PHYSICAL CHARACTERISTICS

Dimensions	8.9" x 3.5" x 2.1" (22.6 cm x 8.9 cm x 5.3 cm)
Standalone	3.5" x 10.5" x 7.7" (8.9 cm x 26.7 cm x 19.6cm)

### WEIGHT

Handheld	1.2 lbs (0.54 kg)
Docking Station . . . (models RDS-1, 2, and 3)	2.5 lbs (1.14 kg)
(model RDS-1B)	3.1 lbs (1.41 kg)
Standalone . . . . . (models RDS-1, 2, and 3)	3.7 lbs (1.68 kg)
(model RDS-1B)	4.3 lbs (1.95 kg)

### TRENDING

Provides 72 hours of trending at 2-second resolution for >10 days at 10 second resolution of SpO<sub>2</sub>, SpHb, SpOC, SpMet, SpCO, Pulse Rate, and Perfusion Index with output to serial printer or other serial devices.

### SpO<sub>2</sub> MODES

Averaging mode	2, 4, 8, 10, 12, 14, or 16 seconds
Sensitivity	Normal, APOD, and Maximum

### ALARMS

Audible and visual alarms for high low saturation and pulse rate (SpO<sub>2</sub> range 1-99%, pulse rate range 30-235 bpm, SpCO 1-98%, SpMet 1-99.5%, SpHb 1-24.5 g/dl, PI .03-19%, PVI 1-99%)

### DISPLAY/INDICATORS

Data display: %SpO <sub>2</sub> , %SpMet, %SpCO, SpHb, pulse rate, pleth waveform, alarm status, trends, status messages, Signal IQ, perfusion index, MAX and APOD sensitivities, PVI and FastSat	
Display Color	Multi-color or monochrome blue
Type	TFT Color LCD
Pixels	480 x 272 dots
Dot Pitch	0.20 mm

### OUTPUT INTERFACE

SatShare (RDS-1, RDS-1B); Serial RS-232 (RDS-1, RDS-1B, RDS-3); Nurse Call/Analog Output (RDS-1, RDS-1B, RDS-3); Philips Vuelink, Spacelabs Universal Flexport, (RDS-1, RDS-1B, RDS-3)

## CLINICAL CONFIGURATIONS:

With a choice of docking stations for your Radical-7, you can select the connectivity configurations that work best for your clinical needs



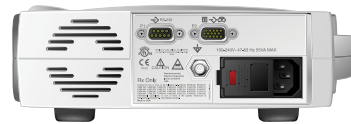
#### RDS-1

Serial, analog, nurse call and SatShare connectivity. Optional extended battery provides battery life up to 10 hours. (RDS-1B)



#### RDS-2

Power Only.



#### RDS-3

Serial, analog and nurse call connectivity.

\* SpO<sub>2</sub>, SpCO, and SpMet accuracy was determined by testing healthy adult volunteers in the range of 60% - 100% SpO<sub>2</sub>, 0% - 40% SpCO, and 0% - 15% SpMet against a laboratory CO-Oximeter. SpO<sub>2</sub> and SpMet accuracy was determined on 16 neonatal NICU patients ranging in age from 7 to 135 days old and weighing between 0.5 and 4.25 kgs. Seventy-nine (79) data samples were collected over a range of 70 - 100% SaO<sub>2</sub> and 0.5 - 2.5% HbMet with a resultant accuracy of 2.9% SpO<sub>2</sub> and 0.9% SpMet. Contact Masimo for testing specifications.