

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, pleth variability index, carboxyhemoglobin, methemoglobin, and acoustic respiration rate

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 SpO₂ readings during motion and low perfusion.
- > Upgradable rainbow[®] technology platform lets you add parameters as factory-ordered options or through simple field-installed software upgrades.

- > Total Hemoglobin (SpHb[®])
- > Methemoglobin (SpMet[®])
- > Oxygen Content (SpOC[™])
- > Pleth Variability Index (PVI[®])
- > Carboxyhemoglobin (SpCO[®])
- > Acoustic Respiration Rate (RRa[™])*



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

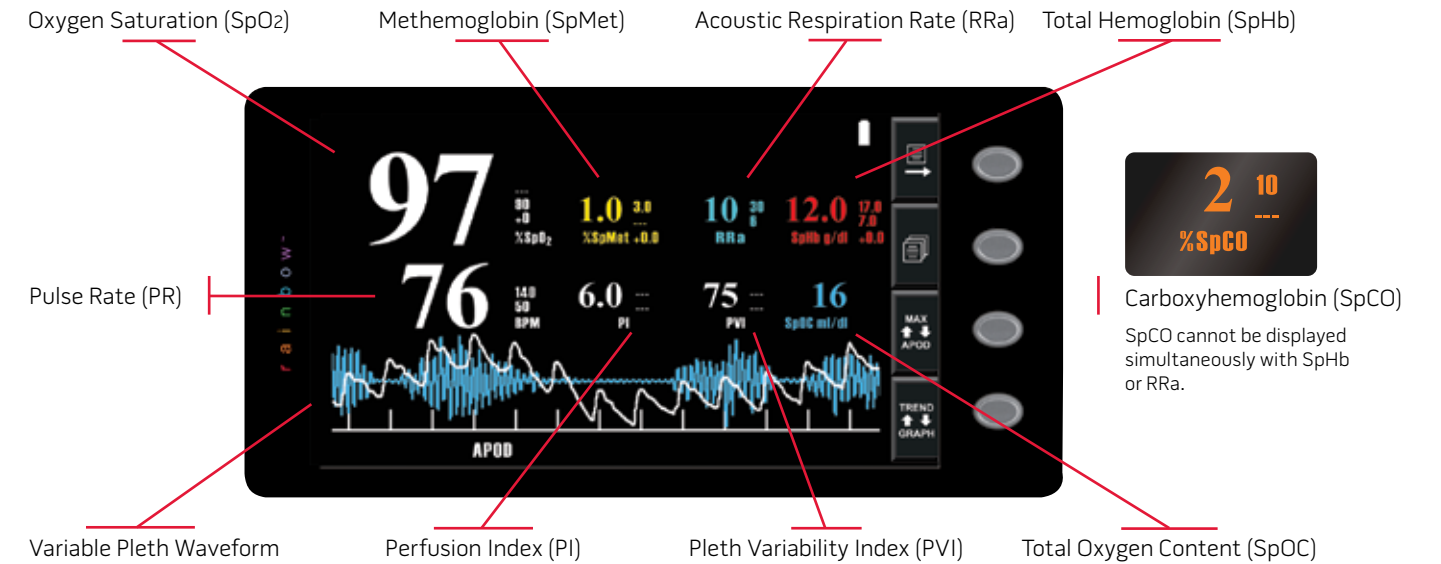
Upgrade your current system to rainbow technology simply by linking the Radical-7 to a host monitor's oximeter input connector. Get Masimo SET SpO₂ readings on more than 100 multiparameter monitors and SpHb, PVI, SpCO, and SpMet readings on the Radical-7 itself.



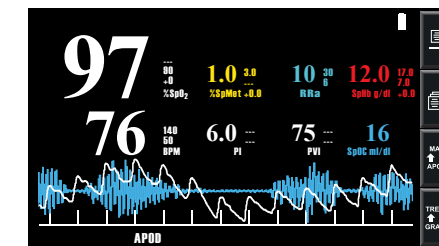
GRAVITY ACTIVATED ROTATION

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

A MORE COMPLETE PICTURE OF YOUR PATIENTS' PHYSIOLOGICAL STATUS

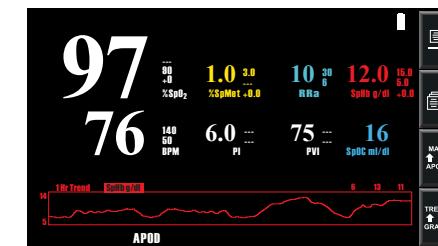


EASILY CONFIGURED TO MEET YOUR SPECIFIC CLINICAL NEED



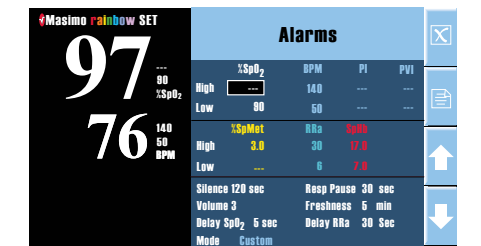
NORMAL VIEW

Allows for continuous monitoring of all parameters along with a plethysmograph waveform and Signal I.Q.[®] indicator (below pleth) to provide confidence in the quality of the values displayed. If the device is RRa-enabled, its waveform can be overlaid on the pleth waveform, enabling deeper understanding of the patient's respiratory status.



TREND VIEW

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.



SIMPLIFIED ALARM MANAGEMENT

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.
- > 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.



* RRa requires MX-3 technology board for field upgrade.

* The use of the trademarks PATIENT SAFETYNET and PSN is under license from University HealthSystem Consortium

PERFORMANCE

MEASUREMENT RANGE

SpO ₂	0 – 100%
SpMet	0 – 99.9%
SpCO	0 – 99%
SpHb	0 – 25 g/dL
SpOC	0 – 35ml of O ₂ /dL of blood
Pulse Rate	25 – 240 bpm
Perfusion Index	0.02 – 20%
PVI	0 – 100%
RRa	4 – 70 breaths per minute

OXYGEN SATURATION ACCURACY (%SpO₂)¹

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 ACCURACY¹

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)¹

Adults/Infants/Pediatrics	1 – 40% ± 3%
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METHEMOGLOBIN SATURATION ACCURACY (%SpMet)¹

Adults/Infants/Pediatrics/Neonates	1 – 15% ± 1%
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TOTAL HEMOGLOBIN ACCURACY (SpHb g/dL)¹

Adults/Infants/Pediatrics	8 – 17 g/dL ± 1 g/dL
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RESPIRATORY RATE ACCURACY (RRa, breaths per minute)¹

Adults	4 – 70, ± 1 breath per minute
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RESOLUTION

Oxyhemoglobin Saturation (%SpO ₂)	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
Respiration Rate (RRa)	1 breath per minute

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 ²
Charging time	3 hours

STANDALONE (MODEL RDS-1B ONLY)

Type	NiMH
Capacity (battery life)	10 hours ²
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	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 SpO₂, SpHb, SpOC, SpMet, SpCO, Pulse Rate, RRa, and Perfusion Index with output to serial printer or other serial devices.

SpO₂ MODES

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

RRa MODES

RRa Averaging	0, 10, 20, 30, 60 seconds
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ALARMS

Audible and visual alarms for high low saturation and pulse rate (SpO₂ range 1-99%, SpCO range 1-98%, SpMet range 1-99.5%, SpHb range 1-24.5 g/dL, RRa range 4-70 breaths per minute, PI range 0.03-19%, PVI range 1-99%, pulse rate range 30-235 BPM)

DISPLAY/INDICATORS

Data display: %SpO₂, %SpMet, %SpCO, SpHb, pulse rate, pleth waveform, RRa waveform, alarm status, trends, status messages, Signal IQ, perfusion index, MAX and APOD sensitivities, PVI and FastSat
 Display Color

OUTPUT INTERFACE

SatShare (RDS-1, RDS-1B); Serial RS-232 (RDS-1, RDS-1B, RDS-3); Nurse Call/Analogue 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, analogue, nurse call and SatShare connectivity. Optional extended battery provides battery life up to 10 hours. (RDS-1B)



RDS-2

Power Only.



RDS-3

Serial, analogue and nurse call connectivity.

¹ SpO₂, SpCO, and SpMet accuracy has been validated on healthy adult male and female volunteers with light to dark skin pigmentations in the range of 60% - 100% SpO₂, 0% - 40% SpCO, and 0% - 15% SpMet against a laboratory CO-Oximeter. SpHb accuracy has been validated on healthy adult male and female volunteers and on surgical patients with light to dark skin pigmentations in the range of 8 g/dL to 17 g/dL SpHb against a laboratory CO-Oximeter. The SpCO, SpMet and SpHb have not been validated with motion or low perfusion. Pulse Rate accuracy has been validated in the range of 25-240 bpm in bench top testing against a Biotek Index2 simulator. Respiration rate accuracy has been validated for the range of 4 to 70 breaths per minute in bench top testing. Clinical validation for up to 30 breaths per minute was also performed with the Masimo Acoustic Respiration sensor and instrument. The variation in accuracy specifications equals plus or minus 1 standard deviation which encompasses 68% of the population. Contact Masimo for testing specifications.

² This represents approximate runtime at the lowest indicator brightness and pulse tone turned off using a fully charged battery.