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.
> 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 Masimo Rainbow SET technology platform lets you add total hemoglobin (SpHb™) and total arterial oxygen content (SpOCT™) 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 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.
MASIMO RAINBOW SET MEASUREMENTS GIVE YOU A MORE COMPLETE PICTURE OF YOUR PATIENTS' PHYSIOLOGICAL STATUS

- Oxygen Saturation (SpO₂)
- Methemoglobin (SpMet)
- Carboxyhemoglobin (SpCO)
- Total Hemoglobin (SpHb)
- Variable Pleth Waveform
- Perfusion Index (PI)
- Pleth Variability Index (PVI)
- Total Oxygen Content (SpOC)
- Pulse Rate (PR)

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.

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 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.

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.

NEONATAL  TRANSPORT  PROCEDURES  BEDSIDE
PERFORMANCE:

**MEASUREMENT RANGE**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpO₂</td>
<td>0 – 100%</td>
</tr>
<tr>
<td>SpHb</td>
<td>0 – 25 g/dL</td>
</tr>
<tr>
<td>SpCO</td>
<td>0 – 35 mL of O₂/dL of blood</td>
</tr>
<tr>
<td>Pulse Rate</td>
<td>25 – 240 bpm</td>
</tr>
<tr>
<td>Perfusion Index</td>
<td>0.2 – 20%</td>
</tr>
<tr>
<td>PVI</td>
<td>0 – 100%</td>
</tr>
</tbody>
</table>

**OXYGEN SATURATION ACCURACY (%SpO₂)**

- No Motion: Adults/Infants/Pediatrics Adults/Infants/Pediatrics/Neonates ± 2% ± 3%
- Motion: Adults/Infants/Pediatrics/Neonates Adults/Infants/Pediatrics/Neonates ± 3% ± 2%

**CARBOXYHEMOGLOBIN SATURATION ACCURACY (%SpCO)**

- Adults/Infants/Pediatrics/Neonates ± 3%

**METHEMOGLOBIN SATURATION ACCURACY (%SpMet)**

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

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

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

**RESOLUTION**

- Oxym/hemoglobin Saturation (%SpO₂) ± 1%
- Carboxyhemoglobin Saturation (%SpCO) ± 1%
- Methemoglobin Saturation (%SpMet) ± 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, (6x20mm), 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: 2.5 lbs (1.14 kg)
- Standalone: 3.7 lbs (1.68 kg)

**TRENDING**

Provides 72 hours of trending at a 2-second resolution for >10 days at 10 second resolution of SpO₂, SpHb, SpCO, SpMet, Pulse Rate, 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

**ALARMS**

- Available and visual alarms for high low saturation and pulse rate (SpO₂ 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: %SpO₂, %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
- 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, RadNet, Patient SafetyNet (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.

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* SpO₂, SpCO, and SpMet accuracy was determined by testing healthy adult volunteers in the range of 60% - 100% SpO₂, 0% - 40% SpCO, and 0% - 15% SpMet against a laboratory CO-Oximeter. SpO₂ 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% SaO₂ and 0.5 - 2.5% HbMet with a resultant accuracy of 2.9% SpO₂ and 0.9% SpMet. Contact Masimo for testing specifications.