

# Rad-8™

signal extraction pulse oximeter™

## Compact design. Unmatched clinical performance.

- Masimo SET® pulse oximetry: proven accurate during motion and low perfusion in over 100 independent clinical studies.<sup>1,2</sup>
- The accuracy of Masimo SET oximetry has been linked to improved care and reduced medical errors.<sup>3</sup>
- Compact, lightweight design with extended battery life for transport applications.
- Large LED color display is easy to read at a distance.
- Ideal for acute and alternate care use; includes configurable Sleep and Home modes.



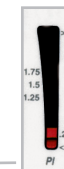


Signal IQ (SIQ) bar is a signal quality indicator, most useful during motion and low perfusion situations. The LED rises and falls with the pulse, its height indicating signal quality. When Signal IQ is low, the display turns red, identifying suspect SpO<sub>2</sub> and Pulse Rate values.



The Alarm Status Indicator flashes when an alarm condition is present. (🔔)

Perfusion Index (PI) indicates arterial pulse signal strength. PI may be used as a diagnostic tool during low perfusion for the accurate prediction of illness severity.<sup>1</sup> The PI display is green when perfusion index is greater than or equal to 0.5 (left graphic) while the PI display is red when perfusion index is less than 0.5 (right graphic).



## Features

- Trauma Mode is used to quickly set the unit into the most sensitive mode and fastest averaging time for patients in resuscitation/trauma situations
- Sleep Mode easily configures system to perform bedside studies
- Home Mode allows for safe and accurate monitoring and trending at home
- RadNet™ and RadLink® interface capability for multi-patient remote monitoring
- Perfusion Index (PI) indicates arterial pulse signal strength and may be used as a diagnostic tool during low perfusion<sup>1</sup>
- Low Signal IQ® (SIQ) indicator highlights conditions of low signal quality
- FastSat™ tracks rapid changes in arterial O<sub>2</sub> with high fidelity unlike any other pulse oximeter
- APOD™ (Adaptive Probe Off Detection) offers the best probe off detection of Masimo's three sensitivity modes - APOD, Normal and MAX sensitivity
- Adjustable averaging 2 to 16 seconds
- Nurse call interface
- Over 8 hours of internal battery life when fully charged
- 72 hours of trending memory
- Available in horizontal and vertical configurations
- Compatible with Philips Vuelink® device interface module

## performance

| measurement range  |                                 |
|--------------------|---------------------------------|
| SpO <sub>2</sub> : | 1 - 100%                        |
| Pulse Rate:        | 25 - 240 beats per minute (bpm) |
| Perfusion Index:   | 0.02% - 20%                     |

## saturation accuracy

|             |             |
|-------------|-------------|
| Saturation: | 70% to 100% |
|-------------|-------------|

## No Motion

|                     |           |
|---------------------|-----------|
| Adults, Pediatrics: | ±2 digits |
| Neonate:            | ±3 digits |

## Motion<sup>2</sup>

|                     |           |
|---------------------|-----------|
| Adults, Pediatrics: | ±3 digits |
| Neonate:            | ±3 digits |

## Low Perfusion<sup>4</sup>

|                     |           |
|---------------------|-----------|
| Adults, Pediatrics: | ±2 digits |
| Neonate:            | ±3 digits |

## pulse rate accuracy

|             |              |
|-------------|--------------|
| Pulse rate: | 25 - 240 bpm |
|-------------|--------------|

## No Motion

|                              |           |
|------------------------------|-----------|
| Adults, Pediatrics, Neonate: | ±3 digits |
|------------------------------|-----------|

## Motion

|                              |           |
|------------------------------|-----------|
| Adults, Pediatrics, Neonate: | ±5 digits |
|------------------------------|-----------|

## Low Perfusion

|                              |           |
|------------------------------|-----------|
| Adults, Pediatrics, Neonate: | ±3 digits |
|------------------------------|-----------|

## resolution

|                                  |       |
|----------------------------------|-------|
| Saturation (%SpO <sub>2</sub> ): | 1%    |
| Pulse Rate (bpm):                | 1 bpm |

## electrical

|                        |                       |
|------------------------|-----------------------|
| AC Power requirements: | 100-240 VAC, 47-83 Hz |
| Power consumption:     | 15 VA                 |

## batteries

| Handheld       |                      |
|----------------|----------------------|
| Type:          | Sealed lead acid     |
| Capacity:      | 8 hours <sup>7</sup> |
| Charging time: | 8 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 / Storage: | 5% to 95%, non-condensing   |
| Operating Altitude:           | 500 mbar to 1060 mbar pressure<br>-1000 ft to 18,000 ft (-304 m to 5,486 m) |

## physical characteristics

|             |  |
|-------------|--|
| dimensions: | 8.2" x 6.0" x 3.0"<br>(20.8 cm x 15.2 cm x 7.6 cm) |
|-------------|--|

|         |                           |
|---------|---------------------------|
| weight: | 2.1 lbs = .908 kg = 32 oz |
|---------|---------------------------|

## modes

|                               |                                   |
|-------------------------------|-----------------------------------|
| Averaging mode <sup>8</sup> : | 2, 4, 8, 10, 12, 14 or 16 seconds |
| Sensitivity:                  | APOD, Normal and Max <sup>9</sup> |

## alarms

|   |          |
|---|----------|
| Audible and visual alarms for high and low saturation (1% to 100%), pulse rate (25 - 240 bpm), sensor condition, system failure and low battery |          |
| Alarm volume  | 75db min |

## display/indicators

|               |  |
|---------------|--|
| Data display: | %SpO <sub>2</sub> , pulse rate, alarm status, alarm silenced status, AC power, Signal IQ / pleth bar, perfusion index bar, battery status, no sensor, sensor off |
|---------------|--|

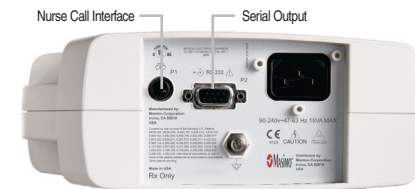
|                                   |     |
|-----------------------------------|-----|
| APOD, Norm, Max, FastSat, Trauma: | LED |
| Type:                             | LED |

## output interface

|                  |  |
|------------------|--|
| 1) Serial RS-232 |  |
| 2) Nurse Call    |  |

## compliance

|                                       |  |
|---------------------------------------|--|
| EMC Compliance:                       | EN60601-1-2, Class B   |
| Equipment Classification:             | IEC 60601-1/UL 60601-1   |
| Type of Protection:                   | Class 1 (on AC power)<br>Internally powered (on battery power) |
| Degree of Protection - Patient Cable: | Type BF-Applied part   |
| Mode of Operation:                    | Continuous   |



Rad-8 Back Panel: Serial output to compatible devices and nurse call interface.



One-touch front panel buttons provide quick access to special features and alarms, allowing caregivers to instantly configure settings for all clinical situations.

## References:

- Hay WW, Rodden DJ, Collins SM, Melera DL, Hale KA, Fashaw LM, Reliability of conventional and new oximetry in neonatal patients. *Journal of Perinatology*. 2002;22:360-366
- Barker SJ. "Motion-Resistant" Pulse Oximetry: A Comparison of New and Old Models. *Anesthesia Analgesia* 2002; 95:967-72
- Durbin CG, Rostow SK. More reliable oximetry reduces the frequency of Arterial Blood Gas analysis and hastens oxygen weaning following cardiac surgery: A prospective randomized trial of the clinical impact of a new technology. *Critical Care Med*. 2002
- De Felice et al. The pulse oximeter perfusion index as a predictor for high illness severity in neonates. *Eu J Pediatr* 2002; 161:561-562
- Continuous rubbing and tapping motions at 2 to 4 Hz at an amplitude of 1 to 2 cm and continuous random frequency motion between 1 to 4 Hz at an amplitude of 2 to 3 cm
- Pulse Amplitude >0.02% and % Transmission > 5%
- When using a new, fully charged battery
- With FastSat the averaging time is dependent on the input signal. For the 2 and 4 second settings the averaging time may range from 2-4 and 4-6 seconds, respectively.
- Maximum Sensitivity mode disables APOD, but maximizes measuring ability

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