

# Rad-57™

signal extraction pulse CO-Oximeter™

Measures carbon monoxide in the blood  
(% SpCO™) - *IN SECONDS!*™

- Clinically proven accuracy up to 40% SpCO ( $\pm 3$  digits).
- Incorporates Masimo SET™ - the “gold standard” in pulse oximetry.
- Rugged and lightweight - ideal for any field or hospital setting.
- Continuous color alert SpCO indicator instantly reveals dangerous levels.
- Low SIQ™ and PI enhances confidence in the quality and strength of the signal.
- Ideal for spot check or continuous monitoring.
- Visual battery life indicator - up to 8 hours on 4 “AA” batteries.
- Optional protective boot cover with built in tabletop stand.



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## Specifications

SpCO indicator illuminates to indicate an SpCO enabled sensor is connected and value obtained.

Pressing SpCO button enables %SpCO display with 1% resolution. After 10 seconds, the display reverts back to SpO<sub>2</sub> and pulse rate.

%SpCO bar provides continuous indication of Carboxyhemoglobin levels in 5% increments from 0 to 50%.



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

Perfusion Index (PI) indicates arterial pulse signal strength and may be used as a diagnostic tool during low perfusion for the accurate prediction of illness severity\*. The LED bar is highest and green when the quality of the perfused site is best (left graphic); when PI is very poor the LED bar is low and turns red (right graphic).



### Rad-57 Features

- The first dedicated handheld with Masimo Rainbow SET technology, clinically proven to provide the highest sensitivity, specificity, fidelity and reliability of any pulse oximeter technology available\*\*
- Designed for field, hospital, and home use; continuous or spot check applications
- Four AA alkaline batteries delivers up to 8 hours of continuous use
- Perfusion Index (PI) indicates arterial pulse signal strength and may be used as a diagnostic tool during low perfusion\*
- Low Signal IQ indicator and Perfusion Index bar for signal identification and quality indication during motion and low signal to noise situations
- APOD™ Adaptive Probe Off Detection provides unmatched probe off detection performance
- FastSat™ tracks rapid changes in arterial O<sub>2</sub> with unmatched fidelity
- SmartTone™ beeps in sync with pulse, even under most challenging patient motion conditions
- Continuous SpO<sub>2</sub>, SpCO, pulse rate, perfusion index, alarm, signal quality, and battery life visual indicators
- 72 hours of trending memory of SpO<sub>2</sub>, pulse rate, perfusion index and SpCO.

### performance

measurement range	
SpO <sub>2</sub> :	1-100%
Pulse Rate:	25-240 (bpm)
Perfusion:	0.02% - 20%
SpCO:	1% - 99%

### saturation accuracy

saturation:	70% to 100%
<i>No Motion</i>	
Adults, Pediatrics:	±2 digits
neonate:	±3 digits
<i>Motion<sup>1</sup></i>	
Adults, Pediatrics:	±3 digits
neonate:	±3 digits
<i>Low Perfusion<sup>2</sup></i>	
Adults, Pediatrics:	±2 digits
neonate:	±3 digits

### pulse rate accuracy

pulse rate:	25-240 bpm
<i>No Motion</i>	
Adults, Pediatrics, neonate:	±3 digits
<i>Motion</i>	
Adults, Pediatrics, neonate:	±5 digits
<i>Low Perfusion</i>	
Adults, Pediatrics, neonate:	±3 digits

### carboxyhemoglobin accuracy

SpCO:	1% - 40%
<i>No Motion</i>	
Adults:	±3 digits

### resolution

Saturation (%SpO <sub>2</sub> ):	1%
Pulse Rate (bpm):	1 bpm
<i>Carboxyhemoglobin (%SpCO)</i>	
numeric display:	1%
bar display:	5%

### electrical

batteries	
Type:	4 AA Alkaline
Capacity:	up to 8 hours <sup>3</sup>

### 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%, non-condensing
Operating Altitude:	500 mbar to 1060 mbar pressure

### physical characteristics

dimensions	
Handheld:	17.5 cm x 7.6 cm x 3.6 cm

### weight

Handheld:	13 oz (.317 kg)
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### trending

Provides 72 hours of trending at 2 second resolution of SpO<sub>2</sub>, pulse rate, perfusion index, and SpCO. Output to PC running Masimo TrendCom™ Utility

### SpO<sub>2</sub> modes

Averaging mode <sup>4</sup> :	2, 4, 8, 10, 12, 14 or 16 seconds
Sensitivity:	APOD, Normal and Max
FastSat <sup>5</sup>	On / Off

### alarms

Audible and visual alarms for high and low saturation (SpO<sub>2</sub> 1% to 100%, pulse rate 25-240 bpm, and SpCO 5%-50%)  
Sensor condition, system failure and low battery alarms

### display/Indicators

Data display:	%SpCO, %SpO <sub>2</sub> , SpCO bar, pulse rate, perfusion index, low Signal IQ, alarm status, alarm silence, battery life, and SpCO sensor connected
Type:	LED

### compliance

EMC Compliance:	EN60601-1-2, Class B
Equipment Classification:	IEC 60601-1-1
Degree of Protection:	Type BF-Applied part



### References:

- \* De Felice et al. The pulse oximeter perfusion index as a predictor for high illness severity in neonate. *Eur J Pediatr* 2002; 161:561-562.
- \*\* 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

- <sup>1</sup> 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 5 Hz at an amplitude of 2 to 3 cm
- <sup>2</sup> Perfusion Index >0.02% and % Transmission > 5%
- <sup>3</sup> When using new, fully charged batteries
- <sup>4</sup> With FastSat the averaging time is dependent upon the input signal
- <sup>5</sup> Automatically enabled in 2 and 4 second averaging modes

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