

MASIMO Rad-57™

Helps Detect Carbon Monoxide (CO) Poisoning on the Scene in Seconds



Carbon Monoxide Poisoning

The Silent Killer

Even though firefighters are trained to understand the dangers of CO poisoning and to recognise potential signs and symptoms, CO poisoning can go unrecognised and untreated, leading to short-term risk and long-term health problems.

Know the facts about CO poisoning

- > CO poisoning can be difficult to detect.
 - CO poisoning can present with flu-like symptoms, but it is also possible to be poisoned without having any symptoms at all.¹
- > CO poisoning puts firefighters at significant risk at the scene of a fire.
 - Even mild CO poisoning causes mental confusion, which can lead to poor decision making, putting both the exposed firefighter and others on the fire scene at risk.²
 - Mild CO poisoning can also rob the heart and brain of oxygen – nearly 50% of line of duty firefighter deaths are attributed to heart disease or stroke.³
- > CO poisoning significantly increases long-term health risks.
 - Just one severe CO poisoning almost doubles the risk of premature death.⁴
 - Consistent exposure to CO poisoning may cause long term heart and brain damage.⁵

"Firefighters who ignore the serious dangers of CO exposure are risking heart attack, stroke, neurological disorders, lifelong disability, and death."

Mike McEvoy
EMS Director, New York State
Association of Fire Chiefs

FIREGRANTSHelp.COM

Grant Assistance is Available,
Contact 1-866-541-5112 or
visit FireGrantsHelp.com

Masimo Rad-57

Protect against immediate and long-term health problems by quickly assessing and treating firefighters and patients exposed to carbon monoxide.

Keep firefighters safe from CO poisoning

- > Have CO levels tested on the scene with the Masimo Rad-57
 - Just because firefighters don't feel like they have CO poisoning doesn't mean that they don't have unsafe levels of carboxyhaemoglobin (SpCO) in their bloodstream.
 - That's why rehab guidelines support the use of on-scene CO testing.⁶ To be safe, have SpCO levels tested with a Masimo Rad-57 before going back into the fire and during overhaul, even if firefighters think they're OK. If you don't test, you don't know.
- > Get prompt on-scene treatment
 - Recognition is the key to immediate on-scene treatment. With early recognition, treatment for CO poisoning can begin immediately, which significantly increases both immediate and long-term health risks.

"Any firefighter exposed to CO or presenting with headache, nausea, shortness of breath, or gastrointestinal symptoms at an incident where CO is present should be assessed for CO poisoning."

NFPA 1584 (2008)
Standards on the Rehabilitation Process
for Members During Emergency Operations
and Training Exercise



¹ Hampson NB et al. *American Journal of Emergency Medicine*. 26:665-669, 2008.
² Jakubowski G. *FireRescue Magazine*. 22(11):52-55, 2004.
³ Bledsoe BE. *FireRescue Magazine*. September 2005.

⁴ Hampson NB et al. *Crit Care Med*. 2009; 37(6): 1941-47.
⁵ Bledsoe BE. *Journal of Emergency Medical Service*. 32:54-59, 2007.
⁶ NFPA 1584: Standards on the Rehabilitation Process for Members During Emergency Operations and Training Exercise. Annex A section A.6.2.6.4(1)

Performance and Specifications

> PERFORMANCE

MEASUREMENT RANGE

Oxygen Saturation (SpO ₂)	0% - 100%
Carboxyhaemoglobin (SpCO)	0% - 99%
Methaemoglobin (SpMet)	0% - 99.9%
Pulse Rate	25 - 240 (bpm)
Perfusion Index	0.02% - 20%

ARTERIAL OXYGEN SATURATION ACCURACY

Saturation* No Motion	60% to 80%
Adults, Infants, Paediatrics	±3%
Saturation No Motion	70% to 100%
Adults, Infants, Paediatrics, Neonates	±2%
Neonate	±3%
Motion	
Adults, Infants, Paediatrics, Neonates	±3%
Low Perfusion	
Adults, Infants, Paediatrics, Neonates	±2%

CARBOXYHAEMOGLOBIN SATURATION ACCURACY (%SpCO)

SpCO®	1% - 40% ±3%
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METHAEMOGLOBIN SATURATION ACCURACY (%SpMet)

SpMet®	1% - 15% ±1%
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PULSE RATE ACCURACY

Pulse Rate No Motion	25 - 240 bpm
Adults, Infants, Paediatrics, Neonate	±3 bpm
Motion	
Adults, Infants, Paediatrics, Neonate	±5 bpm
Low Perfusion	
Adults, Infants, Paediatrics, Neonate	±3 bpm

RESOLUTION

Oxygen Saturation (%SpO ₂)	1%
Pulse Rate (bpm)	1 bpm
Carboxyhaemoglobin Saturation (%SpCO)	
Numeric Display	1%
Methaemoglobin Saturation (%SpMet)	
Numeric Display	0.1%

* When used with Rainbow® sensors

> SPECIFICATIONS

BATTERIES

Type	4 AA Alkaline
Capacity	up to 10 hours

ENVIRONMENTAL

Operating Temperature	0°F to 129°F (-18°C to 54°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, -1,000 ft to 18,000 ft (-304m to 5,486m)

Effective battery life will be reduced when operating the instrument below 5 degrees Fahrenheit due to alkaline battery technology.

DIMENSIONS

Handheld	6.2" x 3.0" x 1.4" (15.8 cm x 7.6 cm x 3.6 cm)
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WEIGHT

Handheld	13 oz (.37 kg)
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TRENDING

Provides 72 hours of trending at 2 second resolution of SpO₂, SpCO, SpMet, Pulse Rate, Perfusion Index, and PVI. Output to PC running Masimo TrendCom™ Utility.

SpO₂ MODES

Averaging mode	2, 4, 8, 10, 12, 14 or 16 seconds
Sensitivity	APOD, Normal and Max
FastSat®	On / Off

ALARMS

Audible and visual alarms for high and low saturation and pulse rate (SpO₂ 1% to 99%, SpCO 1% - 98%, SpMet 1% to 99.5%, PI 0.03% - 19%, PVI 1% - 99%, and pulse rate 30 - 235 bpm)

DISPLAY/INDICATORS

Data Display	%SpO ₂ , %SpCO, %SpMet, SIQ bar, PI bar, Pulse Rate, Perfusion Index, Patient Volume Index, low Signal IQ, alarm status, alarm silenced status, and battery status.
Type	LED

COMPLIANCE

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

Accessories

LIGHT SHIELD



Part # 2357, Box of 5

QUICK REFERENCE GUIDE



Part # 33650

EMS CARRY CASE



Part # 2207 (Black)
Part # 2208 (Red)

SENSORS



Part # 2201
Adult
Rainbow
DCI-dc3

Part # 2069
Pediatric
Rainbow
DCIP-dc3

Additional resources include the latest clinical and case studies, educational curriculum, CO-related articles, and websites dedicated to grants and fire rehab. Contact your local representative for more information or to obtain copies.