GE Healthcare

Masimo-compatible Saturation Module, E-MASIMO

Oxygen saturation measurement with Masimo SET technology

The E-MASIMO module is a single-width, plug-in module with Masimo SET® pulse oximetry, providing accurate monitoring of arterial oxygen saturation and pulse rate during challenging cases where motion and/or low perfusion are likely to occur. The module is compliant with IEC 60601-1 3rd edition.

Features

- Utilizes Masimo SET pulse oximetry measurement algorithm
- Plethysmographic waveform
- Adjustable high and low alarm limits
- Compatible with a wide range of Masimo LNCS®, RD and M-LNCS® sensors for adult, pediatric and infant patients

Technical specifications

Parameter specifications

OEM oximetry technology	Masimo SET
Measurement method	Red and infrared light absorption

Pulse oximetry/SpO_2

Range	1 to 100%
Accuracy [1, 2, 4, 6, 7]	
SpO_2 70 to 100% (A_{rms})[3]	Without motion: ±2 Adult, ±3 Neonate Low perfusion: ±2 Adult, ±3 Neonate With motion: ±3 Adult, ±3 Neonate
SpO_2 (< 70%)	Unspecified

Actual accuracy depends on sensor. Please refer to the sensor instructions for use for more detailed information.

Pulse rate

Range	25 to 240 bpm
Accuracy[5] (A_{rms})[3]	Without motion ±3 bpm With motion ±5 bpm Low perfusion ±3 bpm

Alarms

SpO_2	Adjustable high and low alarm limits
Pulse Rate	Adjustable high and low alarm limits

Pleth waveform

1x, 2x, 4x, and 8x

Monitor compatibility

CARESCAPE modular monitors*

Environmental specifications

Operating conditions

Temperature	10 to 40°C (50 to 104°F)
Relative humidity	10 to 90% non-condensing

Storage conditions

Temperature	-25 to 60°C (-13 to 140°F)
Relative humidity	10 to 90% non-condensing

Physical specifications

Dimensions (H x W x D)	112 x 37 x 187 mm (4.4 x 1.5 x 7.4 in)
Weight	0.3 kg (0.66 lb)

Notes:

1 The Masimo SET technology with Masimo sensors has been validated for no motion accuracy in human blood studies on healthy adult male and female volunteers with light to dark skin pigmentation in induced hypoxia studies in the range of 70-100% SpO_2 against a laboratory CO-Oximeter and ECG monitor. This variation equals ± 1 standard deviation. Plus or minus one standard deviation encompasses 68% of the population.

2 The Masimo SET technology with Masimo sensors has been validated for motion accuracy in human blood studies on healthy adult male and female volunteers with light to dark skin pigmentation in induced hypoxia studies while performing rubbing and tapping motions, at 2 to 4 Hz at an amplitude of 1 to 2 cm and a non-repetitive motion between 1 to 5 Hz at an amplitude of 2 to 3 cm in induced hypoxia studies in the range of 70-100% SpO_2 against a laboratory CO-Oximeter and ECG monitor. This variation equals ±1 standard deviation, which encompasses 68% of the population.

3 The Masimo SET technology has been validated for low perfusion accuracy in bench top testing against a Biotek Index 2™ simulator and Masimo's simulator with signal strengths of greater than 0.02% and transmission of greater than 5% for saturations ranging from 70 to 100%. This variation equals ±1 standard deviation. Plus or minus one standard deviation encompasses 68% of the population.

4 The Masimo SET Technology with Masimo Neo sensors has been validated for neonatal motion accuracy in human blood studies on healthy adult male and female volunteers with light to dark skin pigmentation in induced hypoxia studies while performing rubbing and tapping motions, at 2 to 4 Hz at an amplitude of 1 to 2 cm and a non-repetitive motion between 1 to 5 Hz at an amplitude of 2 to 3 cm in induced hypoxia studies in the range of 70-100% SpO_2 against a laboratory CO-Oximeter and ECG monitor. This variation equals ±1 standard deviation. Plus or minus one standard deviation encompasses 68% of the population. 1 % has been added to the results to account for the effects of fetal hemoglobin present in neonates.

5 The Masimo SET technology with Masimo sensors has been validated for pulse rate accuracy for the range of 25-240 bpm in bench top testing against a Biotek Index 2™ simulator. This variation equals ±1 standard deviation. Plus or minus one standard deviation encompasses 68% of the population.I

6 Sensor accuracy specified when used with Masimo technology using a Masimo patient cable for LNOP sensors, RD SET sensors, the LNCS sensors, or the M-LNCS sensors. Numbers represent A_{rms} (RMS error compared to the reference). Because pulse oximeter measurements are statistically distributed, only about two-thirds of the measurements can be expected to fall within a range of± A_{rms} compared to the reference value. Unless otherwise noted, SpO_2 accuracy is specified from 70% to 100%. Pulse Rate accuracy is specified from 25 to 240 bpm.

7 Masimo M-LNCS, LNOP, RD SET, and LNCS sensors types have the same optical and electrical properties and may differ only in application type (adhesive/non-adhesive/hook & loop), cable lengths, optical component locations (top or bottom of sensor as aligned with cable), adhesive material type/size, and connector type (LNOP 8 pin modular plug, RD 15 pin modular plug, LNCS 9 pin, cable based, and M-LNCS 15 pin, cable based). All sensor accuracy information and sensor application instructions are provided with the associated sensor directions for use.

* For detailed compatibility information, please refer to the monitor specific User's Manual. Please note that commercial availability of the patient monitors differs regionally.

Imagination at work

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