

Nellcor™ Saturation Module, E-NSATX

Oxygen saturation measurement with Nellcor™ pulse oximetry with *OxiMax™* technology



Features

- Utilizes Nellcor™ pulse oximetry measurement algorithm, based on Nellcor™ pulse oximetry with *OxiMax™* technology
- Produces diagnostic plethysmographic waveform
- Generates variable pitch pulse beep
- Compatible with Nellcor™ SpO₂ sensors with *OxiMax™* technology for adult, pediatric and infant patients

The module is compliant with IEC 60601-1 3rd edition.



Technical specifications

Parameter specifications

OEM oximetry technology	Nellcor™ pulse oximetry with OxiMax™ technology
Measurement method	Red and infrared light absorption
Wavelength range	Infrared LED 900 nm Red LED 660 nm
Optical output power	Less than 15 mW

Pulse oximetry/SpO₂

Range	1 to 100%
Saturation (SpO ₂) Accuracy ¹⁾	
Adult and Pediatric ^{2), 3)}	70% to 100% ±2 digits
Neonate ^{4), 5)}	70% to 100% ±2 digits
Adult, Pediatric and Neonate Low Sat ^{2), 3), 4)}	60% to 80% ±3 digits
Low Perfusion ⁶⁾	70% to 100% ±2 digits
Adult, Pediatric and Neonate with Motion ^{2), 7)}	70% to 100% ±3 digits

Pulse rate

Range	20 to 300 bpm
Accuracy	20 to 250 bpm ± 3 bpm 251 to 300 bpm unspecified

Plethysmographic pulse waveform scaling

1x, 2x, 4x and 8x

Imagination at work

Product may not be available in all countries and regions. Full product technical specification is available upon request. Contact a GE Healthcare Representative for more information. Please visit www.gehealthcare.com/promotional-locations.

Data subject to change.

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Alarms

SpO ₂	Adjustable high and low alarm limits
Pulse Rate	Adjustable high and low alarm limits

Monitor compatibility

CARESCAPE™ modular monitors⁸⁾

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) Saturation accuracy varies by sensor type. Refer to the "Sensor Accuracy Grid" available at www.covidien.com/rms.
- 2) Accuracy specifications were validated using measurements of healthy non-smoking adult volunteers during controlled hypoxia studies spanning the specified saturation ranges. Subjects were recruited from the local population and comprised both men and women ranging in age from 18-50 years old, and spanned a range of skin pigmentations. Pulse oximeter SpO₂ readings were compared to SaO₂ values of drawn blood samples measured by hemoximetry. All accuracies are expressed as ±1 SD. Because pulse oximeter equipment measurements are statistically distributed, about two-thirds of the measurements can be expected to fall in this accuracy (ARMS) range.
- 3) Adult specifications are shown for OXIMAX MAXA and MAXN sensors with the Nellcor™ Bedside Respiratory Patient Monitoring System.
- 4) Neonate specifications are shown for OXIMAX MAXN sensors with the Nellcor™ Bedside Respiratory Patient Monitoring System.
- 5) Clinical functionality of the MAXN sensor has been demonstrated on a population of hospitalized neonate patients. The observed SpO₂ accuracy was 2.5% in a study of 42 patients with ages of 1 to 23 days, weight from 750 to 4,100 grams, and 63 observations made spanning a range of 85% to 99% SaO₂.
- 6) Specification applies to the Nellcor™ Bedside Respiratory Patient Monitoring System oximeter performance. Reading accuracy in the presence of low perfusion (detected IR pulse modulation amplitude 0.03% - 1.5%) was validated using signals supplied by a patient simulator. SpO₂ and pulse rate values were varied across the monitoring range over a range of weak signal conditions and compared to the known true saturation and pulse rate of the input signals.
- 7) Motion performance was validated during a controlled hypoxia blood study. Subjects performed rubbing and tapping movements 1-2 cm in amplitude with aperiodic intervals (randomly changing) with a random variation in frequency between 1-4 Hz. Applicability: OXIMAX MAXA, MAXAL, MAXP, MAXI, and MAXN sensors. Specification applies to Nellcor™ Bedside Respiratory Patient Monitoring System oximeter performance.
- 8) For detailed compatibility information, please refer to the monitor specific User's Manual. Please note that commercial availability of the patient monitors differs regionally.