

MicrO₂+[®] Telemetry Pulse Oximeter

The MicrO₂+[®] Telemetry Pulse Oximeter is clinically engineered to work in the challenging environment of ambulatory care. Incorporating the latest developments in pulse oximetry, the MicrO₂+ Pulse Oximeter combines advanced signal processing, superior resolution and averaging to deliver highly accurate clinical information. The MicrO₂+ Pulse Oximeter is flexible enough to be used as a standalone device, or can be linked to Infinity[®] Telemetry for ECG and SpO₂ monitoring – either use supports spot checking and continuous monitoring.

Features

- Combines advanced signal processing, superior resolution and averaging
- Supports both spot checking and continuous monitoring
- Performs both as a standalone device and linked with Infinity Telemetry system

Product Specifications

Type	Hand-held pulse oximeter with LCD display and membrane keypad
Size, H x W x D	118 x 65 x 23 mm 4.6 x 2.6 x .89 in
Weight	220 g (7.86 oz) with battery
Case	White; ABS plastic
Power source	AC power or battery
Battery	9 V alkaline; operating time 14 hours 9 V lithium; operating time 30 hours
Connections	5-pin serial connection to PC for trend output
External communication	2400 to 57600 baud rate



Environmental Specifications

Temperature	Operating: +10° to +45° C (50° to 113° F) Storage: -20° to +60° C (-4° to 140° F)
Humidity	Operating: 20% to 90% non-condensing Storage: 10% to 95% with packaging
Atmospheric pressure	Operating: 525 to 795 mmHg (70 to 106 kPa) Storage: 375 to 795 mmHg (50 to 106 kPa)
Water resistance	Drip Proof (IPX1)
Shock tolerance	EN 60068-2-32
Protection against electrical shock	Degree: Type B Type: Internally powered (per IEC 60601-1) and for use with specified power supply

Pulse Oximetry Monitoring

Measuring principle	SpO ₂ : spectrophotometry Pulse rate: photoplethysmography
Measuring range	SpO ₂ : 1% to 100% Pulse rate: 30 to 250 beats/min
Display range	SpO ₂ : 1% to 100% Pulse rate: 30 to 250 beats/min

Response Time

Normal mode (default)	SpO ₂ : 90% of change within 30 seconds, at 60 beats/min Pulse rate: 90% of change within 30 seconds
Fast mode	SpO ₂ : 90% of change within 20 seconds, at 60 beats/min Pulse rate: 90% of change within 20 seconds
Resolution	SpO ₂ : 1% Pulse rate: 1 beat/min
Display update rate	2 seconds
Trend sampling rate	4 seconds
Alarm tone	70 dB Minimum volume
Alarm override	Separate enable/disable for each parameter
Pulse tone	User selectable on/off
Low battery indicator	Yes
Monitor status messages	Error codes displayed for various monitoring related conditions
Signal strength indicator	Yes
Motion artifact	Yes

Alarm Settings

SpO ₂ , adult mode	Disabled (default) Upper limit: 100% Lower limit: 85%
SpO ₂ , neonatal mode	Disabled (default) Upper limit: 95% Lower limit: 85%
Pulse rate, adult mode	Disabled (default) Upper limit: 120 beats/min Lower limit: 50 beats/min
Pulse rate, neonatal mode	Disabled (default) Upper limit: 180 beats/min Lower limit: 80 beats/min

Measuring Accuracy with Masimo® Sensors

Measuring Accuracy, Adult Mode¹

SpO ₂	0% to 69%, not specified	
	70% to 100%, sensor-specific as follows:	
	LNOP-ADT, LNOP-PDT, LNOP-NEO, LNOP-NEO PT, LNOP-YI	±2
	LNOP-DCI, LNOP-DCIP, NR125	±2
	EAR	±3.5
Pulse rate	±3 beats/min	

Measuring Accuracy, Neonatal Mode^{1,2}

SpO ₂	0% to 69%, not specified	
	70% to 100%, sensor-specific as follows:	
	LNOP-NEO, LNOP-NEO PT, LNOP-YI	±3
Pulse rate	±3 beats/min	

Notes:

¹ SpO₂ accuracies are expressed as ± "X" digits between indicated saturation levels.

Accuracy of the SpO₂ measurement is specified with 1 standard deviation, which represents approximately 68% of the population

² Accuracy of saturation measurements on neonates is increased ±1 digit as compared to accuracy on adult patients to account for the theoretical effect on oximeter measurements of fetal hemoglobin in neonatal blood

Measuring Accuracy with Nellcor® Sensors

Measuring Accuracy, Adult Mode¹

SpO ₂	0% to 69%, not specified	
	70% to 100%, sensor-specific as follows:	
	DS100A, Oxiband OXI-A/N, OXI-P/I, D-YS	±3
	D-25/D-25L, D-20, I-203, N-25	±2
	Oxcliq® A/P/I/N	±2.5
	RS-10	±3.5
	80% to 100%, sensor specific as follows:	
	R-15	±3.5
Pulse rate	±3 beats/min	

Measuring Accuracy, Neonatal Mode^{1,2}

SpO ₂	0% to 69%, not specified	
	70% to 100%, sensor-specific as follows:	
	Oxiband OXI-A/N	±4
	N-25	±3
	Oxcliq N	±3.5
	D-YS	±4
Pulse rate	±3 beats/min	

Notes:

¹ SpO₂ accuracies are expressed as ± "X" digits between indicated saturation levels.

Accuracy of the SpO₂ measurement is specified with 1 standard deviation, which represents approximately 68% of the population

² Accuracy of saturation measurements on neonates is increased ±1 digit as compared to accuracy on adult patients to account for the theoretical effect on oximeter measurements of fetal hemoglobin in neonatal blood

Sensors

Masimo Sensor

Infrared LED	Wavelength, 905 nm Output power, 0.79 mW max
Red LED	Wavelength, 660 nm Output power, 0.79 mW max

Nellcor Sensor

Infrared LED	Wavelength, 910 nm Output power, 1.3 mW
Red LED	Wavelength, 660 nm Output power, 1.9 mW

Ordering information

MicrO ₂ + Telemetry	
Pulse Oximeter, Masimo	7498152
Masimo LNOP-DCI, Adult/Finger	7270312
Masimo LNOP-DCIP, Pedi/Finger	7270304
Masimo LNOP-Ear	7497006
Masimo LNOP-YI, Multi-site	7497014
Masimo NR125, Adult	7270361
Masimo LNOP-ADT, Multi-Site	7496990
Masimo LNOP-ADT, Pediatric	7496982
MicrO ₂ + Telemetry Pulse Oximeter, Nellcor	7489359
Durasensor DS 100A, Adult	7262764
Oxisensor D-25, Adult	4534434
Oxisensor D-20, Pediatric	4534442
MicrO ₂ + Power Adapter	7492106
Disposable pouch	3367393
Reusable MicrO ₂ + and Telemetry transmitter pouch	7499101
MicrO ₂ + Telemetry interface cable	1270318
Lithium battery (box of 6)	3361164
Interface cable for displaying oxygen saturation values on the Infinity Telemetry System	

Regulatory Compliance and Standards

IEC 60601-1: Medical Electrical Equipment, Part 1. General Requirements for Safety.
EN 60601-1-2: 1990, Collateral Standard: Electromagnetic Compatibility.
Meets Class B requirements of CISPR11 (Radiated and Conducted Emissions).
EN 865: 1997, Pulse Oximeters – Particular Requirements, Excluding Clause 51.104
This device bears the CE mark in accordance with the provisions of the Directive 93/42/EEC of June 14, 1993 concerning medical devices.

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The quality management system at Draeger Medical Systems, Inc. is certified according to ISO 13485 and Annex II of Directive 93/42/EEC (Medical devices).