Oximeters, Pulse

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EXECUTIVE SUMMARY   −

Comparison Chart

Oximeters, Pulse

This Product Comparison covers pulse oximeters, both stand-alone units and modular units that interface with anesthesia units or physiologic monitoring systems. Pulse oximetry capabilities that are configured into physiologic monitoring systems are not included.

Excluded from this chart are vital signs monitors, which monitor oxygen saturation (SpO▯), noninvasive blood pressure (NIBP), and temperature.

Pulse oximeters noninvasively monitor SpO▯ (generally expressed as a percentage [e.g., 70% to 100%]) of arterial hemoglobin SpO_2 by measuring light-absorbance changes resulting from arterial blood flow pulsations. Their use allows continuous and instantaneous monitoring of oxygenation and pulse rate, can provide early detection of hypoxia before other signs such as cyanosis are observed, and may reduce the frequency of arterial puncture and laboratory blood gas analysis. Hypoxia is possible if hypoxic gas mixtures are inadvertently administered during general anesthesia, if gas lines are occluded during surgery, if oxygen delivery is discontinued postoperatively during transport to the recovery room, or if a procedure or disease (e.g., spinal anesthesia, bronchoscopy, acute bronchospasm) blocks the air passages or hinders the breathing process; prolonged hypoxia can result in irreversible brain damage, organ damage, or death. Pulse oximetry can detect decreasing oxygen saturation levels before damage occurs and, generally, before the appearance of physical signs.

Pulse oximetry is considered a standard of care for monitoring arterial oxygen saturation in the operating room during procedures requiring anesthesia and in intensive care units and recovery. It is also frequently used in burn units, cardiac catheterization laboratories, and ambulances. Its use in general medical/surgical and outpatient areas for spot-checking is rapidly increasing. Other applications include dentistry anesthesia, sleep studies, exercise testing, and home monitoring of certain patients, such as infants at risk for sudden infant death syndrome and patients requiring respiratory therapy. Battery-powered units are particularly convenient because they can also monitor the patient during transport.

The following device term and product code as listed in ECRI Institute's Universal Medical Device Nomenclature System™ (UMDNS™) is covered:

- Oximeters, Pulse [17-148]

These devices are also called: multiwavelength oximeters, operating room monitors, oxygen monitors, PO screening devices.

Comparison Chart

Oximeters, Pulse

Scope of this Product Comparison

Purpose

Principles of Operation

Pulse oximeters use the principle of differential light absorption to determine the oxygen saturation of hemoglobin in arterial blood. Pulse oximetry sensors are applied to an area of

the body, such as a finger, a toe, or an ear. Two wavelengths of light (e.g., 660 nm [red] and 930 nm [infrared]) are transmitted through the skin into the tissue by the sensor's light-emitting diodes (LEDs) and are differentially absorbed by the blood's oxyhemoglobin (HbO$_2$), which is red and preferentially absorbs infrared light, and deoxyhemoglobin, which is blue and preferentially absorbs red light. The sensor's photodetector (which is on the opposite side of the LED) converts the transmitted light into electrical signals proportional to the absorbance. The signal is then processed by the unit's microprocessor, which derives a saturation reading and, if the reading is outside the alarm limits, sounds an alarm.

Each pulse of arterial blood causes cyclic variations in the path length of the transmitted light through the sensor site, varying the amount of light absorbed by the arterial blood. A portion of the light passing through the sensor site is absorbed by venous blood, tissue, or bone components; however, this absorption is relatively constant over short periods of time and the microprocessor can isolate this constant when performing calculations. Most current units will have advanced signal-processing techniques that can read through motion artifact and/or conditions of low perfusion. Also, to reduce small variations in displayed oxygen saturation values and to counter any false values from artifactual waveforms, pulse oximeters use algorithms to average data over a few seconds.

Most pulse oximeters also offer other display features, including pulse rate, alarm limits on oxygen saturation and pulse rate, plethysmograms, perfusion index, bar graphs indicating pulse amplitude, trending capabilities, and various system-status and error messages. For modular units, these displays are part of the main device to which the unit is connected.

Audible alarms sound when SpO$_2$ or pulse-rate alarm limits are violated. Most audible alarms can be manually temporarily silenced. Visual alarms can include all audible alarm conditions as well as low perfusion, low signal strength, low battery, probe status, silenced audible alarm, and system status.

Both disposable and reusable sensors are available for many oximeters. Reusable sensors include spring clip-style probes, which can be applied to a measurement site (e.g., finger, ear). Disposable sensors, for single-patient use, are usually adhesive-style sensors that can be applied to a measurement site (e.g., finger, toe, foot). One manufacturer has introduced a nonadhesive sensor for patients with sensitive skin. Sensors are available in sizes suitable for adults, children, and neonates. It is important to use the sensor type designed for the patient and site being monitored.

Sensors used on the finger, toe, foot, nose, and ear are transmittance sensors. However, it is possible to use flat reflectance sensors, which measure the intensity of light reflected (backscattered) from the skin (e.g., forehead sensors). Depending on the application, one sensor type may be preferred (e.g., reflectance forehead sensors may be advantageous in the operating room for trauma patients who have damaged or poorly perfused transmittance sensor sites). Reflectance sensors may respond more quickly to desaturation than transmittance sensors, especially in patients having poor peripheral perfusion.

A few manufacturers have developed pulse oximeters that can be safely used during magnetic resonance imaging (MRI) studies. MRI-conditional units typically use nonconductive fiberoptic cables that will not cause radio-frequency (RF) burns and can reduce the occurrence of artifacts in magnetic resonance (MR) images.

Several manufacturers have also introduced portable, battery-powered, handheld pulse oximeters for spot-checks, short-term bedside monitoring, outpatient assessment, or emergency transport of patients' pulse rate and oxygen saturation. These pulse oximeters have a wide range of internal memory capability; some models store data that can often be later downloaded to a printer or computer terminal. Others utilize wireless capabilities to transfer the patient data to a computer, storage (USB), or data management software.

Reported Problems

Interference from the surrounding environment can limit the use of pulse oximeters. For example, electrosurgical units (ESUs) generate high-frequency currents, which can radiate to an oximeter probe and interfere with its operation. Most units have isolation circuitry or some method of suspending measurement when used during an ESU procedure; however, clinicians should be aware that some models freeze the SpO$_2$ display for a short period of time during such interference. If the interference continues past a certain point, an alarm will generally be issued.

Bright visible light (e.g., surgical lighting, bilirubin lights, fire alarm strobe lights during fire drills) and infrared sources (e.g., radiant warmers) can interfere with pulse oximeter sensors because the sensors are designed to measure weak light signals transmitted through skin and tissue. Manufacturers often suggest placing an opaque material over the sensor. This will frequently eliminate such interference, but clinicians must remain alert to potential problems. Reusable clip-style sensors are generally less susceptible to ambient light interference than disposable sensors because reusable sensors have a design that is more rugged and more impermeable to light.

A review of reports from the FDA's Manufacturer and User Facility Device Experience (MAUDE) database indicated that, from January 2014 to December 2015, the main issue associated with some devices most commonly involved no audible alarms sounding to indicate changes in patient status. This problem tends to not only render the oximeter as unable to sound an alarm, but also may cause the display to come up blank or have no error message, which can result in patient injury or death.

ECRI Institute has received reports of burns resulting from the use of functionally incompatible sensors, even though the sensors' connectors are compatible with the oximeter. To ensure compatibility, only sensors specified by the manufacturer should be used. Should users decide to use alternate-source pulse oximeter sensors, ECRI Institute recommends obtaining written confirmation of compatibility from the alternate-source supplier. This confirmation should state that the sensors will provide adequate accuracy with your specific model of pulse oximeter or physiologic monitor over the full range of clinically relevant saturation values (e.g., 70% to 100% SpO$_2$). Using alternate-source sensors may void some warranties.

ECRI Institute has also received reports of potential interference between pulse oximetry and MR systems. Burns have been reported at the probe site during MRI procedures, probably resulting from electrical currents in the probe's cable induced by the RF magnetic field during imaging. In addition, the MRI unit's magnetic field can affect pulse oximeter circuitry and performance, while the pulse oximeter's electronics can produce artifacts on the MR image. The MR compatibility of a pulse oximeter should be verified with the manufacturer before use in a particular MR environment. For more information on MR compatibility, refer to the May 2015 issue of *Health Devices*, which contains guidance articles on the safe use of equipment in the MR environment, and how to interpret MR associated terminology and icons.

Most pulse oximeters cannot detect carbon monoxide (CO) poisoning because they cannot distinguish carboxyhemoglobin (SpCO) from HbO$_2$—the value obtained is generally the sum of the HbO$_2$ and SpCO saturations. In marked contrast to other forms of hypoxia, CO poisoning causes the blood and skin to become a brighter red rather than the blue usually associated with lack of oxygen in the tissues; patients may appear well oxygenated according to the usual visual clues, but they may still be deficient in oxygen. Thus, when CO poisoning is suspected, as in smoke-inhalation victims, arterial blood gas analysis should be performed using the arterial puncture technique and appropriate laboratory instruments, such as a co-oximeter. Most pulse oximeters also cannot distinguish methemoglobin (SpMET) from HbO$_2$ and do not measure CO$_2$ or pH, which are important in pulmonary gas exchange and assessment of acid base status.

A number of other factors can affect pulse oximetry measurements. Intravenous dyes such as methylene blue, indigo carmine, or indocyanine green can cause inaccurate readings. It is advisable to remove any polish or false nails from the patient's fingernails before applying the sensor because certain nail-polish colors and cover materials can interfere with SpO2 measurements. Extreme forms of anemia (a low number of red blood cells or a low amount of hemoglobin) and heavily pigmented skin can prevent sufficient light from penetrating through to the photodetectors to obtain accurate results. Generally, bilirubin does not interfere significantly with pulse oximetry (it has minimal absorption at pulse oximetry wavelengths) and may be insignificant even with bilirubin concentrations greater than 10 mg/dL.

Movement of the sensor can be detected and displayed by the oximeter as artifact and can cause inaccurate readings. The effects of interference caused by patient movement can be reduced, or even eliminated, by digital signal processing and by averaging the displayed SpO$_2$ over several seconds. Displaying the arterial plethysmographic waveform can allow the operator to visually assess signal quality and may display motion artifacts that might alter the unit's accuracy. Also, some pulse oximeters have a feature that specifically measures signal strength. Likewise, the perfusion index can assist the clinician in determining signal strength or the applicability of a sensor site.

Conditions that affect pulse detection can limit the measurement capability of the oximeter. For example, if an arterial pulse is not significantly stronger than the surrounding venous blood and tissue pressure the oximeter may not be able to differentiate between nonpulsatile and pulsatile absorbances. Low pulse signals result from decreased circulation to the measurement area (low perfusion), the causes of which include hypothermia, peripheral vascular disease, hypotension, vasoconstrictive drug therapy, and low cardiac output. To compensate, a sensor can be applied to the bridge of the nose, spanning the nasal septum, or placed on the forehead, which may provide a stronger signal since the body automatically protects circulation to the brain under stressful conditions as opposed to protecting peripheral areas (e.g., finger, toe). Digital signal processing techniques offered by several suppliers allow pulse oximeters to accurately read through low-perfusion conditions, and an alarm will sound should a low-perfusion or no-pulse condition be detected.

Other factors that may rule out pulse oximetry are hemoglobin levels <5 mg/dL and the use of tourniquets, blood pressure cuffs, or intravenous infusion (which can cause vasoconstriction) in the same extremity as the oximeter.

Purchase Considerations

ECRI Institute Recommendations

Included in the accompanying comparison chart are ECRI Institute's recommendations for minimum performance requirements for pulse oximeters.

Pulse oximeters can either be stand-alone or a modular component of a larger patient monitor (e.g., multiparameter physiologic monitoring systems, defibrillator/monitors). The unit should display at least 70% to 100% SpO_2 values with an accuracy of ±3%. Pulse-rate measurements should be accurate within 5 beats per minute (bpm) within the range of 30 to 240 bpm. If an oximeter is unable to obtain an accurate reading, it should be clearly indicated and, preferably, will indicate the reason for the problem.

Pulse oximeter probes should provide accurate SpO_2 and pulse-rate measurements while tolerating probe movement caused by the patient or the clinicians caring for the patient.

The unit should display SpO_2, pulse rate, pulse strength, and low battery (if applicable). There should be audible and visual alarms for high and low SpO_2/pulse rate, sensor off, and low battery. More complex units are able to measure signal strength, perfusion index, and other varying parameters.

Pulse oximeters operate on AC power, AC power with battery backup, or only on battery power. If line power fails, the unit should switch automatically to battery power. If the batteries are rechargeable, they should recharge while the device is operating on line power. Although proper battery operation depends on use and user care, ECRI Institute recommends audible low-battery alarms. If a unit does not have an audible low-battery alarm, ECRI Institute recommends the unit be labeled to indicate that the unit does not have audible alarms and that users should therefore minimize use on battery power; that the power source should be verified with the battery-in-use light or AC power indicator; and that users should ensure that the AC power cord is properly connected. Pulse oximeters intended for transport in the hospital should operate for at least four hours on battery power, and pulse oximeters used in transport outside the hospital should be able to operate for at least eight hours without charging.

Other Considerations

Because most pulse oximeters can be interfaced with printers/recorders, computers, or multiparameter monitoring systems, buyers should make sure that the equipment to be purchased will be compatible with existing equipment. In addition, because some governing bodies (e.g., state/federal government, standards organizations) mandate the use of pulse oximetry in certain situations (e.g., congenital heart disease screening in neonates), hospitals should determine the number of pulse oximeters and sensors necessary to meet the needs of the entire facility.

Some pulse oximeters are manufactured with the intent of use in an MRI setting. These devices should be MRI-conditional for optimal function.

Display size and visibility (from a distance, from various angles, and in various lighting situations) can be important. Backlit liquid crystal displays (LCDs) and LEDs are available. Some displays are simple, with a minimum of information; others are able to present graphical displays of trends and pulse waveforms.

Cost Containment

Sensors are a large part of the ongoing cost of pulse oximeters. Reusable sensors can be used on many patients over a period of six months to one year. Disposable sensors can be used multiple times but only on a single patient, and they should be checked frequently for damage and wear and replaced in accordance with the manufacturer's instructions. Disposable sensors are advantageous for patients requiring particular attention to infection control (especially adults in the intensive care unit and neonates) and patients who cannot remain still (disposable sensors are applied with adhesive strips or wraps and typically attach more securely than reusable sensors). However, they may cost more than reusable sensors over the long term. There are often options for "soft-touch" sensors for patients with delicate skin; however, these sensors are also generally expensive. Some hospitals are buying reusable sensors because of significant cost savings. Before purchasing a pulse oximeter, the types of sensors available and their associated costs, as well as the patient population should be considered. Since sensors make up the majority of the cost, many hospitals commit to a sensor agreement plan. Some manufacturers offer pulse oximeters for no cost when hospitals commit to purchasing a certain number of sensors per year.

Some hospitals have implemented in-house recycling programs; some vendors offer a program where new adhesives can be added to prolong the life of a disposable sensor for use in the same patient. In addition, some original equipment manufacturers (OEMs) allow hospitals to send the used sensors back and they reprocess them (i.e., clean sensors, check function, and add new adhesive strips). Third-party reprocessors also do the equivalent.

Stage of Development

Pulse oximeters have been commercially available since the early 1980s. Since the American Society of Anesthesiologists endorsed pulse oximeters in 1986 as a standard of care for use whenever anesthesia is used, they have become the preferred method for estimating arterial oxygen saturation. In the last 20 years, the use of pulse oximeters has expanded to include most areas of the hospital. Pulse oximetry is being increasingly offered as part of multiparameter modular systems.

One vendor has introduced an enhancement to its pulse oximeter that allows the device to measure SpMET and SpCO in addition to HbO_2. These oximeters also have the ability to measure total hemoglobin; to achieve these enhancements, seven wavelengths are used to obtain saturation readings. More recently, this vendor added acoustic respiratory monitoring, but that does not use the absorption spectral technology used for the other measurements. This vendor also offers integrated use of a pleth variability index (PVI) to measure the patient's respiratory cycles and track the dynamic change of the perfusion index. While such enhancements may or may not be of clinical significance in many settings such as outpatient clinics, they could be advantageous in an emergency department.

Some manufacturers offer alarm notification systems such as central stations and/or remote wireless communication (e.g., pagers). These systems exist for stand-alone oximeters not already integrated into a multiparameter physiologic monitoring system.

Some manufacturers offer a self-contained finger pulse oximeter that can be useful for spot checks and attended-patient monitoring, and several manufacturers offer pulse oximeter testing systems that evaluate oximeters and sensor functionality.

BIBLIOGRAPHY

Barnett E, Duck A, Barraclough R. Effects of recording site on pulse oximetry readings. *Nurs Times* 2012 Jan 10-16;108(1-2):22-3.

Bohnhorst B, Peter CS, Poets CF. Pulse oximeters' reliability in detecting hypoxemia and bradycardia: comparison between a conventional and two new generation oximeters. *Crit Care Med* 2000 May;28(5):1565-8.

Burney M. Pulse oximeters go mobile as prices continue dropping. *Hosp Mater Manage* 1998 Apr;23(4):12.

ECRI Institute. How to use equipment safely in the MR environment. *Health Devices* 2015 May 6.

    Pulse oximetry and the importance of the perfusion index. *Health Devices* 2006 Jul;35(7):290-1.

    Pulse oximetry: choosing the right sensor and applying it correctly. *Health Devices* 2007 Mar;36(3): 98-9.

    Safety labeling for the MR environment [guidance article]. *Health Devices* 2015 May 6.

Mahle WT, Martin GR, Beekman III RH, et al. Endorsement of health and human services recommendation for pulse oximetry screening for critical congenital heart disease. *Pediatrics* 2012 Jan;129(1):190-2.

Milner QJ, Mathews GR. An assessment of the accuracy of pulse oximeters. *Anaesthesia* 2012 Apr;67(4):396-401.

Monitoring your adult patient with bedside pulse oximetry. *Nursing* 2008 Sep;38(9):42-4.

Pak JG, Park KH. Advanced pulse oximetry system for remote monitoring and management. *J Biomed Biotechnol* 2012;2012:930582. Epub.

RESOURCE LIST

Comparison Chart

Oximeters, Pulse

Request for Proposal Template

Oximeters, Pulse

RELATED RESOURCES

Carbon Dioxide Monitors, Exhaled Gas

Carbon Dioxide Monitors, Transcutaneous; Oxygen Monitors, Transcutaneous

Monitors, Vital Signs

Oximeters, In Vitro, Whole Blood

Physiologic Monitoring Systems, Acute Care; Neonatal; ECG Monitors; Monitors, Central Station

Scanning Systems, MRI

Ventilators, Sub-Acute/Home Care

TOPICS AND METADATA

Topics

Technology Selection

Caresetting

Ambulatory Care Center

;

Ambulatory Surgery Center

;

Emergency Department

;

Hospital Inpatient

;

Hospital Outpatient

;

Physician Practice

;

Skilled-nursing Facility

;

Trauma Center

;

Home Care

Roles

Allied Health Personnel

;

Materials Manager/Procurement Manager

;

Nurse

;

Patient/Caregiver

Information Type

Comparative Data

UMDNS

Oximeters, Pulse [17-148]

Product Comparison Chart

Manufacturer	ECRI INSTITUTE'S RECOMMENDED SPECIFICATIONS Basic Pulse Oximeters	Armstrong Medical Industries Inc AD-1500 SPECTRO2 10	Armstrong Medical Industries Inc AD-2500 SPECTRO2 30	Bitmos GmbH sat801 Delta
WHERE MARKETED		Worldwide	Worldwide	Worldwide, except North America
FDA CLEARANCE		Yes	Yes	No
CE MARK (MDD)		Yes	Yes	Yes
STAND-ALONE/ MODULAR		Stand-alone	Stand-alone	Stand-alone, handheld
MOUNTING OPTIONS		Handheld, docking station; optional IV pole mount	Yes	Bed rail; optional infusion pole
DISPLAYS	SpO2, pulse rate, pulse strength and/or signal, low battery	SpO2, pulse rate, quantitative pulse strength	SpO2, pulse rate, quantitative pulse strength	SpO2, pulse rate, perfusion index, Signal IQ, delta SpO2, battery capacity, pleth waveform
Type	LCD, LED, others	LED	LED	Color TFT
SpO2 RANGE, %	70-100	0-99	0-99	1-100
Accuracy, %	70-100 ±3	Adult/pediatric 70-99 ±2	Adult/pediatric 70-99 ±2, neonate 70-99 ±3	70-100: ±2 no movement in adults and children; ±3 newborns; with movement in adults and children
PULSE RATE, bpm	30-240	30-254	20-300	25-240
Accuracy	±5	0-100% ±2 arms adult/pediatric, ±3 arms neonate	0-100% ±2 arms adult/pediatric, ±3 arms neonate	±3 no movement in adults, children and newborns; ±5 with movement in adults, children and newborns
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Required, continuous monitors; preferred, spot check monitors	Low perfusion technology	Low perfusion technology	Perfusion index, numerical value and bar graph
RESPONSE TIME, sec	Depends on application	NA	NA	Data update frequency: 1 Hz
ALARMS				
Audible and visual	High/low SpO2 and pulse rate, sensor off, sensor failure, low battery	No	Pulse rate, SpO2	NA
Visual only	High/low SpO2 and pulse rate, sensor off, low battery	Low battery	Low battery	Sensor off, sensor failure, system failure, low battery
ALARM OVERRIDE	Preferred	No	Yes	No
Reactivation method	Automatic or manual	NA	Yes	NA
Volume control	Preferred	NA	Yes	NA
SELF-TEST MODE	Preferred	Yes	Yes	During power-up
PROBE TYPES				
Disposable		Yes	Yes	Masimo LNOP, LNCS series
Reusable		Yes	Yes	Masimo LNOP, LNCS series
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)		1.5 (5)	4 (13.1)	≤3.7 (12)
DATA MANAGEMENT		99 patients, 144 hr at 4-sec intervals	99 patients, 72 hr at 2-sec intervals	Not specified
Data stored		SpO2, pulse rate, pulse amplitude index, absolute time from RTC	SpO2, pulse rate, pulse amplitude index, absolute time from RTC	NA
Data storage, hr		144	72	NA

Manufacturer	ECRI INSTITUTE'S RECOMMENDED SPECIFICATIONS Basic Pulse Oximeters	Armstrong Medical Industries Inc AD-1500 SPECTRO2 10	Armstrong Medical Industries Inc AD-2500 SPECTRO2 30	Bitmos GmbH sat801 Delta
External output		USB, AC mains power input, dock connection	USB, AC mains power input, dock connection	NA
PRINTER/RECORDER		Optional	Optional	No
MRI CONDITIONAL		No	No	No
LINE POWER, VAC		100-200, 50/60 Hz	100-240, 50/60 Hz	100-240, 50/60 Hz
BATTERY TYPE (NUMBER)		AA (4) or 2-cell rechargeable lithium-ion	AA (4) or 2-cell rechargeable lithium-ion	Lithium-ion
Life, hr	4 intrahospital, 8 interhospital	32	17	18, at full indicator brightness
Rechargeable	Preferred; optional for handhelds	Optional	Optional	Yes
Recharge time, hr	While on AC	54	30	6
Low-battery notice	Preferred	Yes	Yes	Yes
H x W x D, cm (in)		8.4 x 15.5 x 4.3 (3.3 x 6.1 x 1.7)	8.4 x 15.5 x 4.3 (3.3 x 6.1 x 1.7)	12.8 x 8.5 x 4.6 (5 x 3.3 x 1.8)
WEIGHT, g (oz)		300 (10.6)	300 (10.6)	230 (8.1)
PURCHASE INFORMATION				
List price		$395<1>	$850<1>	Not specified
Warranty		3 years	3 years	2 years; optional 5 years
Delivery time, ARO		Not specified	Not specified	1 week
Year first sold		2009	2009	2013
Fiscal year		August to July	August to July	January to December
OTHER SPECIFICATIONS		None specified.	None specified.	Dual channel model intended for CCHD screening.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED		February 2016	February 2016	November 2015
Supplier Footnotes	These recommendations are the opinions of ECRI Institute's technology experts. ECRI Institute asumes no liability for decisions made based on this data.			
Model Footnotes				
Data Footnotes		<1>Replacement probe $175.	<1>Replacement probe $175.	

Manufacturer	Bitmos GmbH sat801+	Bitmos GmbH sat805	Comdek Industrial Corp MD-600P	Comdek Industrial Corp MD-610P
WHERE MARKETED	Worldwide, except North America	Worldwide, except North America	Worldwide	Worldwide
FDA CLEARANCE	No	No	Submitted	Submitted
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone, handheld	Stand-alone	Handheld	Handheld
MOUNTING OPTIONS	Bed rail; optional infusion pole	Bed rail; optional infusion pole	No	No
DISPLAYS	SpO2, pulse rate, alarm limits, perfusion index, Signal IQ, battery capacity, pleth waveform, alarm lists, trend data	SpO2, pulse rate, alarm limits, perfusion index, Signal IQ, battery capacity, pleth waveform, alarm lists, trend data	SpO2, pulse rate, pulse-search indicator, low-battery alarm	SpO2, pulse rate, low-battery, alarm
Type	Color TFT	Black/white LCD	LED	LED
SpO2 RANGE, %	1-100	1-100	0-100	0-100
Accuracy, %	70-100: ±2 no movement in adults and children; ±3 newborns; with movement in adults and children	70-100: ±2 no movement in adults and children; ±3 newborns; with movement in adults and children	80-100 ±2	90-100 ±1, 80-89 ±2, 65-79 ±3
PULSE RATE, bpm	25-240	25-240	30-250	30-250
Accuracy	±3 no movement in adults, children and newborns; ±5 with movement in adults, children and newborns	±3 no movement in adults, children and newborns; ±5 with movement in adults, children and newborns	1%	1%
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Perfusion index, numerical value and bar graph	Perfusion index, numerical value and bar graph	Not specified	Not specified
RESPONSE TIME, sec	Data update frequency: 1 Hz	Data update frequency: 1 Hz	6	6
ALARMS				
Audible and visual	High/low SpO2 and pulse rate, sensor off, sensor failure, system failure, low battery	High/low SpO2 and pulse rate, sensor off, sensor failure, system failure, low battery	High/low SpO2 and pulse rate, sensor off, sensor disconnected, low battery	Sensor off, sensor disconnected, low battery
Visual only	Not specified	Not specified	High/low SpO2 and pulse rate, low battery	Low battery
ALARM OVERRIDE	Yes	Yes	Yes	Not specified
Reactivation method	Automatic	Automatic and manual	Manual	Not specified
Volume control	Yes	Yes	Yes	Not specified
SELF-TEST MODE	During power-up	During power-up	Yes	Yes
PROBE TYPES				
Disposable	Masimo LNOP, LNCS series	Masimo LNOP, LNCS series	Finger, ear, toe	Finger, ear, toe
Reusable	Masimo LNOP, LNCS series	Masimo LNOP, LNCS series	Finger, ear, toe	Finger, ear, toe
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	≤3.7 (12)	≤3.7 (12)	1.5 (4.9), varies with extension cable	1.5 (4.9), varies with extension cable
DATA MANAGEMENT	Not specified	Not specified	Not specified	Not specified
Data stored	SpO2, pulse rate, Signal IQ	SpO2, pulse rate, Signal IQ	Not specified	Not specified
Data storage, hr	160 hr captured at 1 sec intervals	160 hr captured at 1 sec intervals	Not specified	Not specified

Manufacturer	Bitmos GmbH sat801+	Bitmos GmbH sat805	Comdek Industrial Corp MD-600P	Comdek Industrial Corp MD-610P
External output	miniUSB, microSD	USB, SD, analogue, nurse call	No	No
PRINTER/RECORDER	No	No	No	No
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	100-240, 50/60 Hz	100-240, 50/60 Hz	110/120/220/240	110/120/220/240
BATTERY TYPE (NUMBER)	Lithium-ion	Lithium-ion	AA (4)	AA
Life, hr	22, at full indicator brightness	20, at full indicator brightness	24	24
Rechargeable	Yes	Yes	Yes	Yes
Recharge time, hr	6	6	Not specified	Not specified
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	12.8 x 8.5 x 4.6 (5 x 3.3 x 1.8)	9.2 x 24 x 10.4 (3.6 x 9.4 x 4.1)	17.2 x 9 x 3.6 (6.8 x 3.5 x 1.4)	17.2 x 8.8 x 3.6 (6.8 x 3.5 x 1.4)
WEIGHT, g (oz)	230 (8.1)	900 (31.7)	240 (8.5)	240 (8.5)
PURCHASE INFORMATION				
List price	Not specified	Not specified	Not specified	Not specified
Warranty	2 years; optional 5 years	2 years; optional 5 years	1 year	1 year
Delivery time, ARO	1 week	1 week	3-7 days	3-7 days
Year first sold	2013	2007	1996	1997
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	Clinical use allows full user access; home care use allows restricted user access; disabled alarms optional in sleep lab setting.	Clinical use allows full user access; home care use allows restricted user access; disabled alarms optional in sleep lab setting.	AC adapter; optional AA rechargeable batteries.	Battery operation.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	November 2015	November 2015	November 2015	November 2015

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	Comdek Industrial Corp MD-620P	Comdek Industrial Corp MD-630P	Comdek Industrial Corp MD-650P	Comdek Industrial Corp MD-670P
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Submitted	Submitted	Submitted	Submitted
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Handheld	Handheld	Handheld	Handheld
MOUNTING OPTIONS	Charger stand	No	NA	No
DISPLAYS	SpO2, pulse rate, pulse-search indicator, low battery, alarm	SpO2, pulse rate, search indicator, low battery, alarm	SpO2, pulse rate, pulse-strength indicator, low battery	SpO2, pulse rate, SpO2 waveform, strength indicator, low battery, alarm
Type	LCD	LED	LED	LCD
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	80-100 ±2, 65-79 ±3	90-100 ±1, 80-89 ±2, 65-79 ±3	80-100 ±2, 65-79 ±3, 0-65	80-100 ±2, 65-79 ±3
PULSE RATE, bpm	30-250	30-250	30-250	30-250
Accuracy	1%	1%	1%	1%
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Not specified	Not specified	Not specified	Not specified
RESPONSE TIME, sec	6	6	6-8	6
ALARMS				
Audible and visual	High/low SpO2 and pulse rate, sensor off, sensor disconnected, low battery, clock and symbol function	High/low SpO2 and pulse rate, sensor off, sensor disconnected, low battery	Sensor off, sensor disconnected, low battery	High/low SpO2 and pulse rate, sensor off, sensor disconnected, low battery, clock and symbol function, SpO2 waveform display
Visual only	High/low SpO2 and pulse rate, low battery	High/low SpO2 and pulse rate, low battery	Low battery	High/low SpO2 and pulse rate, low battery
ALARM OVERRIDE	Yes	Yes	Not specified	Yes
Reactivation method	Manual	Manual	Not specified	Manual
Volume control	Yes	Yes	Not specified	Yes
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Finger, ear, toe	Finger, ear, toe	NA	Finger, ear, toe
Reusable	Finger, ear, toe	Finger, ear, toe	Built-in finger	Finger, ear, toe
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric	Adult, pediatric, infant, neonate
Cable length, m (ft)	1.5 (4.9), varies with extension cable	1.5 (4.9), varies with extension cable	NA	1.5 (4.9), varies with extension cable
DATA MANAGEMENT	Not specified	Not specified	Not specified	Not specified
Data stored	Yes	50 records of recall memory	Not specified	Not specified
Data storage, hr	48	0.5	Not specified	72

Manufacturer	Comdek Industrial Corp MD-620P	Comdek Industrial Corp MD-630P	Comdek Industrial Corp MD-650P	Comdek Industrial Corp MD-670P
External output	USB	No	No	USB
PRINTER/RECORDER	Optional IR printer	Built-in thermal printer	No	Yes
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	110/120/220/240	110/120/220/240	Battery only	110/120/220/240
BATTERY TYPE (NUMBER)	AAA alkaline	AA alkaline	AAA alkaline	AA alkaline
Life, hr	36	12	24	12
Rechargeable	Not specified	Not specified	Not specified	Not specified
Recharge time, hr	Not specified	Not specified	Not specified	Not specified
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	11.5 x 6.5 x 4.3 (4.5 x 2.6 x 1.7)	16.8 x 8.8 x 5 (6.6 x 3.5 x 2)	7.3 x 4.5 x 3.9 (2.9 x 1.8 x 1.5)	17 x 8.8 x 4.4 (6.7 x 3.5 x 1.7)
WEIGHT, g (oz)	160 (5.6) including batteries	330 (11.6)	60 (2.1) without batteries	250 (8.8) without batteries
PURCHASE INFORMATION				
List price	Not specified	Not specified	Not specified	Not specified
Warranty	1 year	1 year	1 year	1 year
Delivery time, ARO	3-7 days	3-7 days	3-7 days	3-7 days
Year first sold	2007	2001	2004	2007
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	Tone function and 8-level volume adjustment; optional wireless Bluetooth and infrared transmission.	Tone function and 8-level volume adjustment.	Optional rechargeable batteries.	Tone function and 8-level volume adjustment; waveform.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	November 2015	November 2015	November 2015	November 2015

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	Comdek Industrial Corp MD-680P	Comdek Industrial Corp MD-700	Covidien (US) Nellcor Bedside Respiratory Patient Monitoring System	Covidien (US) Nellcor Bedside SpO2 Patient Monitoring System
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Submitted	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Handheld	Stand-alone	Stand-alone	Stand-alone
MOUNTING OPTIONS	No	Tabletop using the desk stand	Optional wall, roll stand	Optional wall, roll stand
DISPLAYS	SpO2, pulse rate, pulse-search indicator, low battery	SpO2, pulse rate, search indicator, low battery, alarm	SpO2, pulse rate, pulse amplitude, plethysmogram	SpO2, pulse rate, pulse amplitude, plethysmogram
Type	LED	LED	Multi-color display	Multi-color display
SpO2 RANGE, %	0-100	0-100	1-100	1-100
Accuracy, %	90-100 ±1, 80-89 ±2, 65-79 ±3	80-100 ±2	70-100 ±2	70-100 ±2
PULSE RATE, bpm	30-250	30-250	20-250	20-250
Accuracy	1%	1%	±3 digits	±3 digits
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Not specified	Not specified	70-100% low perfusion	70-100% low perfusion
RESPONSE TIME, sec	6-8	6-8	Updated 1/sec	Updated 1/sec
ALARMS				
Audible and visual	Sensor off, sensor disconnected, low battery	Sensor off, sensor disconnected, low battery	User configuration, high/low priority, SpO2, pulse rate, SatSeconds, loss of pulse, low battery, sensor off, sensor disconnect, alarms off reminder	User configuration, high/low priority, SpO2, pulse rate, SatSeconds, loss of pulse, low battery, sensor off, sensor disconnect, alarms-off reminder
Visual only	Low battery	Low battery	Pulse search, interference, alarms silenced	Pulse search, interference, alarms silenced
ALARM OVERRIDE	Not specified	Not specified	Yes	Yes
Reactivation method	Not specified	Not specified	Automatic, manual	Automatic, manual
Volume control	Not specified	Not specified	Yes	Yes
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	NA	Finger, ear, toe	Nellcor OxiMax adhesives, reusables, and specialty	Nellcor OxiMax adhesives, reusables, and specialty
Reusable	Built-in finger	Finger, ear, toe	Nellcor OxiMax adhesives, reusables, and specialty	Nellcor OxiMax adhesives, reusables, and specialty
Patient range	Adult, pediatric	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	NA	1.5 (4.9), varies with extension cable	3 (10) plus sensor	3 (10) plus sensor
DATA MANAGEMENT	Not specified	Yes	Yes	Yes
Data stored	Not specified	Not specified	Yes	Yes
Data storage, hr	Not specified	72	48	96

Manufacturer	Comdek Industrial Corp MD-680P	Comdek Industrial Corp MD-700	Covidien (US) Nellcor Bedside Respiratory Patient Monitoring System	Covidien (US) Nellcor Bedside SpO2 Patient Monitoring System
External output	No	USB	EIA-232 and RS422, Oxinet, analog, nurse call	Nurse call
PRINTER/RECORDER	No	No	Optional	Optional
MRI CONDITIONAL	No	Not specified	No	No
LINE POWER, VAC	Battery only	100/220, 50/60 Hz	100-120, 200-240	100-120, 200-240
BATTERY TYPE (NUMBER)	AAA alkaline	AA alkaline (4)	Lithium-ion	Lithium-ion
Life, hr	24	24	6, under nominal load conditions	5
Rechargeable	Optional	Optional	Yes	Yes
Recharge time, hr	Not specified	NA	6	4.5
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	9 x 6.6 x 2.2 (3.5 x 2.6 x 0.9)	6.7 x 14.8 x 19 (2.6 x 5.8 x 7.5)	20.3 x 38.9 x 35.6 (7.9 x 15.3 x 14)	8.2 x 25.5 x 16.5 (3.2 x 10 x 6.5)
WEIGHT, g (oz)	90 (3.2)	500 (17.6)	2,000 (72)	1,600 (56)
PURCHASE INFORMATION				
List price	Not specified	Not specified	$4,500	$4,000
Warranty	1 year	1 year	5 years	5 years
Delivery time, ARO	3-7 days	3-7 days	2 weeks	2 weeks
Year first sold	2002	2002	2013	2013
Fiscal year	January to December	January to December	October to September	October to September
OTHER SPECIFICATIONS	None specified.	Real-time display; link with PC.	SatSeconds alarm management technology; system monitors broad range of patients; platform delivers readings even during low perfusion and signal interference; wide selection of OxiMax sensors; features several models with Nellcor's LoSat expanded accuracy range; includes MaxFast forehead sensor and SoftCare non-adhesive sensors; offers OxiMax compatibility with other Nellcor/Covidien products.	SatSeconds alarm management technology; system monitors broad range of patients; platform delivers readings even during low perfusion and signal interference; wide selection of OxiMax sensors; features several models with Nellcor's LoSat expanded accuracy range; includes MaxFast forehead sensor and SoftCare non-adhesive sensors; offers OxiMax compatibility with other Nellcor/Covidien products.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	November 2015	November 2015	November 2015	November 2015
Supplier Footnotes				
Model Footnotes			Contact Medtronic Inc for more information	Contact Medtronic Inc for more information
Data Footnotes				

Manufacturer	Covidien (US) Nellcor N-65	Covidien (US) Nellcor N-85	Covidien (US) PM10N	Dima Italia srl O2 Flow Regulator Model 106 Plus
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Not specified
FDA CLEARANCE	Yes	Yes	Yes	No
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Handheld	Handheld	Handheld	Stand-alone
MOUNTING OPTIONS	Optional roll stand	Pole clamp	Optional roll stand	Not specified
DISPLAYS	SpO2, pulse rate, pulse amplitude	SpO2, pulse rate, pulse amplitude, plethysmogram, ETCO2, respiration rate	SpO2, pulse rate, pulse amplitude	SpO2, pulse rate, alarms, time, date
Type	Bright blue LCD with backlight	Graphic LCD with backlight	TFT LCD, white LED backlight, viewing cone of 60° and optimal viewing distance of 1 meter	Graphic LCD
SpO2 RANGE, %	1-100	1-100	1-100	30-100
Accuracy, %	70-100 ±2	70-100 ±2	70-100 ±2	70-100 ±3
PULSE RATE, bpm	20-250	20-250	20-250	30-250
Accuracy	±3 digits	±3 digits	±3 digits	3 digits
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	70-100% low perfusion	70-100% low perfusion	70-100% low perfusion	Plethysmographic amplitude
RESPONSE TIME, sec	Updated 1/sec	Updated 1/sec	Updated 1/sec	Any pulse
ALARMS				
Audible and visual	User configuration, high/low priority, SpO2, pulse rate, loss of pulse, low battery, sensor off, sensor disconnect	High/low SpO2 and pulse rate, ETCO2, respiration, high FiCO2, sensor disconnect (audio only)	Battery critically low, speaker failure, system failure, sensor failure, sensor disconnected, sensor off, over temperature, trend data lost, clock settings lost, communication error, pulse timeout, SpO2 low, SpO2 high, pulse rate low, pulse rate high, data export cancelled[1]	High/low SpO2, pulse rate, loose connection, low battery, memory full
Visual only	Pulse search, interference, alarms silenced	Alarm off or silenced, low battery	Battery low	Flashing LCD
ALARM OVERRIDE	Yes	Yes	Yes	Yes
Reactivation method	Automatic or manual	Automatic or manual	Automatic or manual	Automatic, manual
Volume control	Yes	Yes	Yes	No
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Nellcor OxiMax adhesives, reusables, and specialty	Nellcor OxiMax adhesives, reusables, and specialty	Nellcor OxiMax adhesives, reusables, and specialty	Finger, clip, wrap, foot, flex
Reusable	Nellcor OxiMax adhesives, reusables, and specialty	Nellcor OxiMax adhesives, reusables, and specialty	Nellcor OxiMax adhesives, reusables, and specialty	Finger, clip, wrap, foot, flex
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	1.2 (3.9) plus sensor	1.2 (4) or 2.4 (8) plus sensor	1.2 (4) plus sensor cable length	1 (3.3) or 3 (10)
DATA MANAGEMENT	Not specified	Yes	Not specified	Yes
Data stored	Not specified	Yes	Yes	32 KB
Data storage, hr	Not specified	8	80	12

Manufacturer	Covidien (US) Nellcor N-65	Covidien (US) Nellcor N-85	Covidien (US) PM10N	Dima Italia srl O2 Flow Regulator Model 106 Plus
External output	NA	RS232, optional analog	Mini USB	Serial
PRINTER/RECORDER	Optional Citizen via infrared link	Optional	No	No
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	Battery only	100-230	Battery only	110/240, 50/60 Hz
BATTERY TYPE (NUMBER)	AA alkaline or lithium (4)	Ni-MH	Lithium AA	1.2 V Ni-MH (4)
Life, hr	19 (alkaline), 40 (lithium)	4-7	20	16
Rechargeable	No	Yes	No	Yes
Recharge time, hr	NA	4-5	NA	16
Low-battery notice	Yes	Yes	Yes	Visual and audible
H x W x D, cm (in)	7.1 x 15.7 x 3.6 (2.8 x 6.2 x 1.4)	20.6 x 8.9 x 5.3 (8.1 x 3.5 x 2.1)	15.6 x 7 x 3.2 (6.1 x 2.3 x 1.3)	15 x 10 x 5.5 (5.9 x 3.9 x 2.2)
WEIGHT, g (oz)	300 (10.6)	820 (28.9)	274 (9.7)	450 (15.9)
PURCHASE INFORMATION				
List price	$895	$3,995	$1,000	$3,500-4,000
Warranty	1-5 years	1, 3, 5 years	5 weeks	1 year
Delivery time, ARO	2 weeks	2 weeks	2 weeks	30 days
Year first sold	2008	Not specified	2015	Not specified
Fiscal year	October to September	October to September	Not specified	Not specified
OTHER SPECIFICATIONS	System monitors a broad range of patients; platform delivers readings even during low perfusion and signal interference; wide selection of OxiMax sensors; features several models with Nellcor's LoSat expanded accuracy range; includes MaxFast forehead sensor and SoftCare non-adhesive sensors; offers OxiMax compatibility with other Nellcor/Covidien products.	System monitors a broad range of patients; platform delivers readings even during low perfusion and signal interference; wide selection of OxiMax sensors; features several models with Nellcor's LoSat expanded accuracy range; includes MaxFast forehead sensor and SoftCare non-adhesive sensors; offers OxiMax compatibility with other Nellcor/Covidien products.	System monitors a broad range of patients; platform delivers readings even during low perfusion and signal interference; wide selection of OxiMax sensors; features several models with Nellcor's LoSat expanded accuracy range; includes MaxFast forehead sensor and SoftCare non-adhesive sensors; offers OxiMax compatibility with other Nellcor/Covidien products.	O2 flow delivered from 0-20 L/min at 3.5 bar; works with MASIMO SET technology; connects to fixed and mobile sources of O2; optional Easy Flow 106 software.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	November 2015	November 2015	November 2015	March 2016
Supplier Footnotes				
Model Footnotes	Contact Medtronic Inc for more information	Contact Medtronic Inc for more information	Contact Medtronic Inc for more information	
Data Footnotes			<1>Sensor failure, sensor disconnected, and alarm sensor may have changeable service menu priorities.	

Manufacturer	Emco Meditek Pvt Ltd 2060	Emco Meditek Pvt Ltd MRI 3600	getemed Medizin und Informationtechnik AG VitaGuard VG 310	Huntleigh Healthcare Pty Ltd Smartsigns MP1
WHERE MARKETED	Bahrain, Bangladesh, India, Malawi, Turkey	India	Europe	Worldwide, except Japan
FDA CLEARANCE	No	No	No	Yes
CE MARK (MDD)	Yes	No	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone	Stand-alone	Stand-alone	Stand-alone (handheld)
MOUNTING OPTIONS	IV pole clamp	IV pole clamp	Hang in bag or clinic holder	Handheld, pole stand, desk/tabletop using the desk stand
DISPLAYS	Pulse rate, SpO2, plethysmogram	Pulse rate, SpO2, plethysmogram	SpO2, pulse, plethysmogram, signal IQ, perfusion index	SpO2, pulse rate, signal quality/strength, pleth wave
Type	LCD	LCD	Backlit LCD (B/W), 240 x 360 dpi	LED
SpO2 RANGE, %	0-100	0-100	1-100	0-99
Accuracy, %	70-99 ±2	70-99 ±2	>70 ±3	70-99 ±2, <70 undefined
PULSE RATE, bpm	18-300	18-300	25-240	30-254
Accuracy	3 ±1 digit	3 ±1 digit	±3 without motion, ±5 during motion	Better than ±2 bpm
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	3-color perfusion LED for low, medium, and high perfusion, bar graph	3-color perfusion LED for low, medium, and high perfusion, bar graph	0.02-20%	8-segment bar graph
RESPONSE TIME, sec	5	5	<10	1
ALARMS				
Audible and visual	Sensor/patient disconnect, alarm-limit violation, low battery	Sensor/patient disconnect, alarm-limit violation, low battery	Yes	Physiological and technical alarms provided; pulse rate, SpO2, no finger, low battery; variable pulse tone adjusts audio tone synchronized with rise and fall of saturation level
Visual only	Sensor/patient disconnect, alarm-limit violation, low battery	Sensor/patient disconnect, alarm-limit violation, low battery	Yes	User definable, user can disable the audible alarm and use the visual only alarm feature
ALARM OVERRIDE	2 min silence	2 min silence	30-120 sec silence	Yes
Reactivation method	Alarm silence switch, after 2 min activates automatically	Alarm silence switch, after 2 min activates automatically	Automatic	Automatic, manual
Volume control	Yes	Yes	Yes	Single level, on/off enabled through set up menu
SELF-TEST MODE	Yes	Yes	On start-up	Self test checks system integrity, displays, and all audible tones
PROBE TYPES				
Disposable	Adult, pediatric, neonate	Reusable	Masimo LNOP and LNCS types	Digit, hand, foot
Reusable	Adult, pediatric, neonate	Fiber optic probe for adult, pediatric, neonate	Masimo LNOP and LNCS types	Finger, ear
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	All	Adult, pediatric, neonate (no neonate for USA)
Cable length, m (ft)	3 (10)	6 (20)	2.4 (8), 3.7 (12)	Sensor: 0.46 (1.5); cable: 1.5 (5)
DATA MANAGEMENT	Yes	Yes	Yes	No
Data stored	SpO2, pulse rate	SpO2, pulse rate	Event, trends, and full disclosure	No
Data storage, hr	144	144	≥72, trends; ≥8, full disclosure; ≥200, events	No

Manufacturer	Emco Meditek Pvt Ltd 2060	Emco Meditek Pvt Ltd MRI 3600	getemed Medizin und Informationtechnik AG VitaGuard VG 310	Huntleigh Healthcare Pty Ltd Smartsigns MP1
External output	Parallel port/RS232	No	Online data (SpO2, pulse, plethysmogram, signal IQ)	No
PRINTER/RECORDER	Optional	Optional	No	No
MRI CONDITIONAL	No	Yes	No	No
LINE POWER, VAC	220/240	220/240	120-240, 50/60 Hz, external power adapter	NA
BATTERY TYPE (NUMBER)	Sealed lead-acid, 6 V, 1.2 mAh	Sealed lead-acid, 6 V, 1.2 mAh	Rechargeable Ni-MH pack (1)	AA alkaline (4)
Life, hr	6	6	8	>96
Rechargeable	Yes	Yes	Yes	No
Recharge time, hr	8	8	5	NA
Low-battery notice	LED indicator	LED indicator	Yes	Audible and visual
H x W x D, cm (in)	8 x 23.4 x 16.5 (3.2 x 9.2 x 6.5)	8 x 23.4 x 16.5 (3.2 x 9.2 x 6.5)	4.5 x 20.3 x 13.5 (1.8 x 8 x 5.3)	7.5 x 14 x 2.5 (3 x 5.5 x 1)
WEIGHT, g (oz)	2,000 (70.5)	2,400 (84.6)	750 (26.5)	300 (10.6) excluding desk stand and sensor
PURCHASE INFORMATION				
List price	$475	$2,100	$3,856 (€2,840)	$475
Warranty	2 years	1 year for main equipment, 3 months for fiber optic sensor	2 years	5 years
Delivery time, ARO	From stock	From stock	≤2 weeks	<1 week
Year first sold	2002	2014	2004	2005
Fiscal year	April to March	April to March	Not specified	January to December
OTHER SPECIFICATIONS	4-hr online trend; 144-hr history; printout available on parallel printer. Meets requirements of IEC 60601-1, EN 45001, and ISO 9001 (2008), certified by TUV Rheinland.	4-hour online trend; 144-hr history; printout available on parallel printer. Meets requirements of IEC 60601-1, EN 45001, and ISO 9001 (2008), ISO 13485 certified by TUV Rheinland.	Trend, event, and full-disclosure memory; data download via USB; online data input via RS232; suitable for home use; waveforms: plethysmogram, pulse, SpO2, signal IQ; optional networking capabilities.	Uses rechargeable cells, recyclable packaging, complies with European WEEE Directive for end of life disposal, environmental management systems comply with ISO 14001; variable pulse tone synchronized with rise and fall of saturation level provides clinicians with early warning of changes in patient status.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	March 2016	March 2016	November 2015	February 2016

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	Huntleigh Healthcare Pty Ltd Smartsigns MP1R	Infinium Medical Inc O2 SAT	Masimo Corp 2012 Radical-7 with RDS	Masimo Corp 2012 Radical-7 with Root
WHERE MARKETED	Worldwide, except Japan	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	No	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone (handheld)	Stand-alone	Stand-alone	Stand-alone
MOUNTING OPTIONS	Handheld, pole stand, desk/tabletop using the desk stand	Handheld, desktop	Yes	Yes
DISPLAYS	SpO2, pulse rate, signal quality/strength, pleth wave	SpO2, pulse rate, pulse strength and/or signal, low battery	SpO2, SpHb, SpMet, SpCO, SpOC, RRa, pulse rate, perfusion index, PVI, Signal IQ, plethysmogram, trends, sensitivity, status message, FastSat, AC power, battery life, alarm	SpO2, SpHb, SpMet, SpCO, SpOC, RRa, pulse rate, perfusion index, PVI, Signal IQ, plethysmogram, trends, sensitivity, status message, FastSat, AC power, battery life, alarm status
Type	LED	2.8" color TFT touchscreen	Both: Backlit Active matrix TFT LCD touchscreen	Both: Backlit Active matrix TFT LCD touchscreen
SpO2 RANGE, %	0-99	0-100	1-100	1-100
Accuracy, %	70-99 ±2, <70 undefined	±2 (70-100)	70-100 ±2, 60-80 ±3	70-100 ±2, 60-80 ±3
PULSE RATE, bpm	30-254	30-254	25-240	25-240
Accuracy	Better than ±2 bpm	±2	±3 (no motion), ±5 (motion)	±3 (no motion), ±5 (motion)
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	8-segment bar graph	Yes	Yes	Yes
RESPONSE TIME, sec	1	5	1	1
ALARMS				
Audible and visual	Physiological and technical alarms provided; pulse rate, SpO2, no finger, low battery; variable pulse tone adjusts audio tone synchronized with rise and fall of saturation level	Alarm indicator, power indicator, probe off, finger out, low power modes	SpO2, SpHb, SpMet, SpCO, RRa, pulse rate, perfusion index, PVI, sensor, cable, system failure, low battery; optional advanced alarms (perfusion index delta 3-D, desaturation index 3-D)	SpO2, SpHb, SpMet, SpCO, RRa, pulse rate, perfusion index, PVI, sensor, cable, system failure, low battery; optional advanced alarms (perfusion index delta 3-D, desaturation index 3-D)
Visual only	User definable, user can disable the audible alarm and use the visual only alarm feature	Audible and visual	All alarms have audible component by default	All alarms have audible component by default
ALARM OVERRIDE	Yes	Yes	Yes	Yes
Reactivation method	Automatic, manual	Automatic and manual	Automatic, manual	Automatic or manual
Volume control	Single level, on/off enabled through set up menu	Not specified	25-100%	25-100%
SELF-TEST MODE	Self test checks system integrity, displays, and all audible tones	Yes	No	No
PROBE TYPES				
Disposable	Digit, hand, foot	Yes	SpO2: digit, hand, foot, toe, ear cavum; RRa: neck	SpO2: digit, hand, foot, toe, ear cavum; RRa: Neck
Reusable	Finger, ear	Yes	Digit, hand, foot, ear, forehead	Digit, hand, foot, ear, forehead
Patient range	Adult, pediatric, neonate (no neonate for USA)	Adult, pediatric, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	Sensor: 0.46 (1.5); cable: 1.5 (5)	1 or 3 (3.3 or 9.8)	0.2-5.5 (0.7-18)	0.2-5.5 (0.7-18)
DATA MANAGEMENT	No	Yes	Yes	Yes
Data stored	No	Yes	Yes	Yes
Data storage, hr	No	72	96 at 2 sec resolution	96 at 2 sec resolution

Displaying page 1 of 2 for current modules (#25-28) above.

Manufacturer	Huntleigh Healthcare Pty Ltd Smartsigns MP1R	Infinium Medical Inc O2 SAT	Masimo Corp 2012 Radical-7 with RDS	Masimo Corp 2012 Radical-7 with Root
External output	No	Yes	Wireless 802.11, Bluetooth, analog, serial, nurse call, SatShare, Philips VueLink, Spacelabs Flexport, RadNet, ASCII1, ASCII 2L	Wireless 802.11, Bluetooth, analog, serial, nurse call, SatShare, Philips VueLink, Spacelabs Flexport, RadNet, ASCII1, Philips Intellibridge
PRINTER/RECORDER	No	Can connect to PC printer	No	No
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	100-240	NA	100-240, 47-63 Hz, 55 VA	100-240, 47-63 Hz, 55 VA
BATTERY TYPE (NUMBER)	AA Ni-MH rechargeable integrated smart charging through desk stand (4)	AA (3)	Lithium-ion	Lithium-ion
Life, hr	>120	9	2012 Radical-7: 4	Root: 4; 2012 Radical-7: 4
Rechargeable	Yes	No	Yes	Yes
Recharge time, hr	6	Not specified	2012 Radical-7: <6	Root: 2.2; 2012 Radical-7: <6
Low-battery notice	Audible and visual	Not specified	Yes	Yes
H x W x D, cm (in)	7.5 x 14 x 2.5 (3 x 5.5 x 1)	11.7 x 6.5 x 2.8 (4.6 x 2.56 x 1.1)	2012 Radical-7: 22.6 x 8.9 x 5.3 (8.9 x 3.5 x 2.1); RDS: 8.9 x 26.7 x 19.6 (3.5 x 10.5 x 7.7)	Root: 28 x 26.7 x 14 (11 x 10.5 x 5.5); 2012 Radical-7: 22.6 x 8.9 x 5.3 (8.9 x 3.5 x 2.1)
WEIGHT, g (oz)	300 (10.6) excluding desk stand sensor and wall cube	110 (3.9) without batteries	2012 Radical-7: 540 (19.2); RDS: 1,140 (40)	Root: 3,370 (118.7); 2012 Radical-7: 540 (19.2)
PURCHASE INFORMATION				
List price	$650	$499	$4,045<1>	$4,045<1>
Warranty	5 years	1 year	1 year	1 year
Delivery time, ARO	<1 week	From stock	1 week	1 week
Year first sold	2005	2008	2014	2014
Fiscal year	January to December	Not specified	January to December	January to December
OTHER SPECIFICATIONS	Uses rechargeable cells, recyclable packaging, complies with European WEEE Directive for end of life disposal, environmental management systems comply with ISO 14001; variable pulse tone synchronized with rise and fall of saturation level provides clinicians with an early warning of changes in patient status.	None specified.	Pulse co-oximetry measures total hemoglobin (SpHb), carboxyhemoglobin (SpCO), methemoglobin (SpMet), respiration rate (RRa) and pleth variability index (PVI) noninvasively; separates from docking station and can be used as full-featured, handheld pulse oximeter; SatShare interface upgrades conventional pulse oximetry to Masimo SET; can be placed in vertical or horizontal position; screen automatically adjusts for upright display of information; 802.11 abg, classic Bluetooth. Meets requirements of CSA, TUV, and UL.	Pulse co-oximetry measures total hemoglobin (SpHb), carboxyhemoglobin (SpCO), methemoglobin (SpMet), respiration rate (RRa) and pleth variability index (PVI) noninvasively; separates from docking station and can be used as full-featured handheld pulse oximeter; optional MOC-9 modules include SedLine brain function monitoring, capnography; handheld pulse oximeter can be used in vertical or horizontal position; screen automatically adjusts for upright display of information; 802.11 abg, classic Bluetooth. Meets requirements of CSA, TUV, and UL.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	February 2016	October 2015	December 2015	December 2015

Supplier Footnotes

Model Footnotes

Data Footnotes

| | | | <1>Base unit only; unit with RDS includes SpO2, pulse rate, and perfusion index. | <1>Base unit $4,045; Root $3,500, price includes SpO2, pulse rate, and perfusion index. |

Manufacturer	Masimo Corp MightySat Rx	Masimo Corp Pronto	Masimo Corp Pronto-7	Masimo Corp Rad-5
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone	Stand-alone	Stand-alone	Handheld
MOUNTING OPTIONS	No	Yes	Yes	Yes
DISPLAYS	SpO2, pulse rate, perfusion index, PVI, Signal IQ, plethysmographic waveform	SpO2, SpHb, pulse rate, perfusion index, Signal IQ, battery life	SpO2, SpHb, pulse rate, perfusion index, battery life	SpO2, pulse rate, perfusion index, Signal IQ, sensitivity, status message, FastSat, battery life, alarm status
Type	OLED with touch gesture	LED	Color LCD touchscreen	LED
SpO2 RANGE, %	1-100	1-100	1-100	1-100
Accuracy, %	70-100 ±2, 60-80 ±3	70-100 ±2, 60-80 ±3	70-100 ±2	70-100 ±2, 60-80 ±3
PULSE RATE, bpm	25-240	25-240	30-250	25-240
Accuracy	±3 (no motion), ±5 digits (motion)	±3 (no motion), ±5 (motion)	±3	±3 digits (no motion), ±5 digits (motion)
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Yes	Yes	Yes	Yes
RESPONSE TIME, sec	Every second	NA	NA	1
ALARMS				
Audible and visual	None	Low battery, internal failure	No	SpO2, pulse rate, sensor, cable, system failure, low battery
Visual only	NA	No	No	SpO2, pulse rate, sensor, cable, system failure, low battery
ALARM OVERRIDE	NA	No	No	Yes
Reactivation method	NA	None	None	Automatic, manual
Volume control	NA	No	No	3 levels and off
SELF-TEST MODE	NA	Yes	Yes	Yes
PROBE TYPES				
Disposable	NA	Digit	Digit	Digit, hand, foot, toe
Reusable	Digit	Digit	Digit	Digit, hand, foot, ear, forehead
Patient range	Adult, pediatric	Adult, pediatric	Adult, pediatric	Adult, pediatric, infant, neonate
Cable length, m (ft)	NA	0.91 (3)	0.91 (3)	0.2-3.7 (0.7-12)
DATA MANAGEMENT	Yes	Yes	Yes	Yes
Data stored	With use of App	Yes	Yes	Yes
Data storage, hr	12	Spot check storage (>10,000) checks	Spot-check storage (>10,000) checks	72

Manufacturer	Masimo Corp MightySat Rx	Masimo Corp Pronto	Masimo Corp Pronto-7	Masimo Corp Rad-5
External output	Bluetooth LE	Serial, ASCII 1	Mini USB	Serial, ASCII 1
PRINTER/RECORDER	No	External, standard serial printer	External Bluetooth printer, external standard laser printer	External, standard serial printer
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	Battery only	Battery only	100-240, 50-60 Hz, 15 VA	Battery only
BATTERY TYPE (NUMBER)	AAA alkaline (2)	AA alkaline (4)	Rechargeable lithium polymer	AA alkaline (4)
Life, hr	NA	>8	Not specified	>48
Rechargeable	No	No	Yes	No
Recharge time, hr	NA	NA	5	NA
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	7.4 x 4.1 x 3 (2.9 x 1.6 x 1.2)	15.8 x 7.6 x 3.6 (6.2 x 3 x 1.4)	13 x 7.2 x 2.5 (5.1 x 2.8 x 1)	15.8 x 7.6 x 3.6 (6.2 x 3 x 1.4)
WEIGHT, g (oz)	73 (0.16)	320 (11.3)	300 (10.6)	320 (11.3)
PURCHASE INFORMATION				
List price	$399<1>	$1,495	$2,995	$1,200<1>
Warranty	4 years	1 year	1 year	1 year
Delivery time, ARO	1 week	1 week	1 week	1 week
Year first sold	2014	2008	2010	2004
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	Can interface with smart devices (cell phones and tablets) and write health data to Apple Health (SpO2, PR and PVI); Bluetooth LE; no disposable sensors needed, electronic instructions for use (US models only).	Spot-check measurements of total hemoglobin (SpHb), oxygen saturation (SpO2), pulse rate (BPM), and perfusion index (PI). Meets requirements of CSA, TUV, and UL.	Rechargeable batteries; spot-check measurements of total hemoglobin (SpHb), oxygen saturation (SpO2), pulse rate (BPM), and perfusion index (PI); 802.11 abg, Bluetooth. Meets requirements of CSA, TUV, and UL.	None specified.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	December 2015	December 2015	December 2015	December 2015
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Basic version $399; Bluetooth version $449; Bluetooth and PVI version $499.			<1>Replacement probe $260.

Manufacturer	Masimo Corp Rad-57	Masimo Corp Rad-5v	Masimo Corp Rad-8	Masimo Corp Rad-87
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Handheld	Handheld	Stand-alone	Stand-alone
MOUNTING OPTIONS	Yes	Yes	Yes	Yes
DISPLAYS	SpO2, SpHb, SpMet, SpCO, pulse rate, perfusion index, Signal IQ, sensitivity, status message, FastSat, battery life, alarm status	SpO2, pulse rate, perfusion index, Signal IQ, status message, FastSat, battery life, alarm status	SpO2, pulse rate, perfusion index, Signal IQ, sensitivity, status message, FastSat, battery life, alarm status, trauma	SpO2, SpHb, SpMet, SpCO, SpOC, RRa, pulse rate, perfusion index, PVI, Signal IQ, plethysmogram, trends, sensitivity, status message, FastSat, AC power, battery life, alarm status
Type	LED	LED	LED	LED, LCD
SpO2 RANGE, %	1-100	1-100	1-100	1-100
Accuracy, %	70-100 ±2, 60-80 ±3	70-100 ±2, 60-80 ±3	70-100 ±2, 60-80 ±3	70-100 ±2, 60-80 ±3
PULSE RATE, bpm	25-240	25-240	25-240	25-240
Accuracy	±3 (no motion), ±5 digits (motion)	±3 digits (no motion), ±5 digits (motion)	±3 (no motion), ±5 digits (motion)	±3 (no motion), ±5 digits (motion)
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Yes	Yes	Yes	Yes
RESPONSE TIME, sec	1	1	Every second	Every second
ALARMS				
Audible and visual	SpO2, SpHb, SpMet, SpCO, pulse rate, sensor, cable, system failure, low battery	SpO2, system failure, low battery, sensor	SpO2, pulse rate, sensor, cable, system failure, low battery	SpO2, SpHb, SpMet, SpCO, RRa, pulse rate, perfusion index, PVI, sensor, cable, system failure, low battery; optional advanced alarms (perfusion index delta 3-D and desaturation index 3-D)
Visual only	SpO2, SpHb, SpMet, SpCO, pulse rate, sensor, cable, system failure, low battery	High/low SpO2 and pulse, sensor off, loss of pulse, system failure, low battery, service	SpO2, pulse rate, sensor, cable, system failure, low battery	SpO2, SpHb, SpMet, SpCO, RRa, perfusion index, PVI, pulse rate, sensor, cable, system failure, low battery, 3-D alarms
ALARM OVERRIDE	Yes	Yes	Yes	Yes
Reactivation method	Automatic, manual	Automatic, manual	Automatic, manual	Automatic, manual
Volume control	3 levels and off	3 levels and off	3 levels and off	4 levels and off
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Digit, hand, foot, toe	Digit, hand, foot, toe	Digit, hand, foot, toe	Digit, hand, foot, toe
Reusable	Digit, hand, foot, ear, forehead	Digit, hand, foot, ear, forehead	Digit, hand, foot, ear, forehead	Digit, hand, foot, ear, forehead
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	0.2-5.5 (0.7-18)	0.2-3.7 (0.7-12)	0.2-16 (0.7-52.5)	0.2-5.5 (0.7-18)
DATA MANAGEMENT	Yes	No	Yes	Yes
Data stored	Yes	No	Yes	Yes
Data storage, hr	72 at 2 sec resolution	NA	72 at 2 sec resolution	72 at 2 sec resolution

Manufacturer	Masimo Corp Rad-57	Masimo Corp Rad-5v	Masimo Corp Rad-8	Masimo Corp Rad-87
External output	Serial, ASCII 1	NA	Serial, Patient SafetyNet, nurse call, Philips VueLink, ASCII 1, ASCII 2	Serial, Patient SafetyNet, nurse call, Philips VueLink, ASCII 1, ASCII 2, optional Wireless 802.11
PRINTER/RECORDER	External, standard serial printer	No	External, standard serial printer	External, standard serial printer
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	Battery only	Battery only	100-240, 50-60 Hz, 15 VA	100-240, 50-60 Hz, 15 VA
BATTERY TYPE (NUMBER)	AA alkaline (4)	AA alkaline (4)	Sealed lead-acid	Sealed lead-acid
Life, hr	>8	>48	≤7	4
Rechargeable	No	No	Yes	Yes
Recharge time, hr	NA	NA	8	Not specified
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	15.8 x 7.6 x 3.6 (6.2 x 3 x 1.4)	15.8 x 7.6 x 3.6 (6.2 x 3 x 1.4)	7.6 x 20.8 x 15.2 (3 x 8.2 x 6)	7.6 x 20.8 x 15.2 (3 x 8.2 x 6)
WEIGHT, g (oz)	320 (11.3)	320 (11.3)	950 (33.5)	950 (33.5)
PURCHASE INFORMATION				
List price	$995<1>	$950<1>	$2,495<1>	$3,535<1>
Warranty	1 year	1 year	1 year	1 year
Delivery time, ARO	1 week	1 week	1 week	1 week
Year first sold	2005	2004	2005	2008
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	Rad-57 Rainbow Technology allows total hemoglobin (SpHb), carboxyhemoglobin (SpCO) and methemoglobin (SpMet) measurements.	None specified.	Pulse oximetry measures oxygen saturation (SpO2) and pulse rate noninvasively; SatShare interface upgrades conventional pulse oximetry to Masimo SET; can be placed in vertical or horizontal position. Meets requirements of CSA, TUV, and UL.	Pulse co-oximetry measures total hemoglobin (SpHb), carboxyhemoglobin (SpCO), methemoglobin (SpMet), Respiration (RRa), and Pleth Variability Index (PVI) noninvasively; can be used as full-featured, handheld pulse oximeter; can order a vertical or horizontal version. Meets requirements of CSA, TUV, and ETL.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	December 2015	December 2015	December 2015	December 2015
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Includes SpO2, pulse rate, and perfusion index.	<1>Replacement probe $260.	<1>Replacement probes $280/box of 20.	<1>$4,335 with radio; includes SpO2, pulse rate, and perfusion index.

Manufacturer	Masimo Corp Radius-7 with Root	Maxtec MD300 C2	Maxtec PULSOX-300	Maxtec PULSOX-300i
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Modular	Stand-alone	Stand-alone	Stand-alone
MOUNTING OPTIONS	Yes	No	No	No
DISPLAYS	SpO2, RRA, pulse rate, perfusion index, PVI, Signal IQ, plethysmogram, trends, sensitivity, status message, FastSat, AC power, battery life, alarm status	SpO2, pulse rate, pulse rate bar graph, low-power indicator, SpO2 wavelength	SpO2, pulse rate, error messages, battery indication	SpO2, pulse rate, error messages, battery indication
Type	Root: Backlit active matrix TFT LCD touchscreen; Radius-7: TFT LCD	OLED	LED	LED
SpO2 RANGE, %	1-100	70-99	0-100	0-100
Accuracy, %	70-100 ±2, 60-80 ±3	80-99 ±2, 70-80 ±3	70-100 ±2	70-100 ±2
PULSE RATE, bpm	25-240	30-235	30-230	30-230
Accuracy	±3 (no motion), ±5 (motion)	2	±2	±2
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Yes	Not specified	Not specified	Not specified
RESPONSE TIME, sec	1	Not specified	Not specified	Not specified
ALARMS				
Audible and visual	SpO2, RRa, pulse rate, perfusion index, PVI, sensor, cable, system failure, low battery; optional advanced alarms (perfusion index delta 3-D, desaturation index 3-D)	No	No	No
Visual only	All alarms have audible component by default	No	Error messages	Error messages
ALARM OVERRIDE	Yes	No	No	No
Reactivation method	Automatic, manual	NA	NA	NA
Volume control	25-100%	NA	NA	NA
SELF-TEST MODE	No	Yes	Yes	Yes
PROBE TYPES				
Disposable	SpO2: digit, hand, foot, toe, ear cavum; RRa: neck	Finger	Finger, wrist	Finger, wrist
Reusable	Digit, hand, foot, ear, forehead	Finger	Finger, wrist	Finger, wrist
Patient range	Adult, pediatric	Adult, pediatric	Adult	Adult
Cable length, m (ft)	0.2-5.5 (0.7-18)	Not specified	Not specified	Not specified
DATA MANAGEMENT	Yes	Yes	Yes	Yes
Data stored	Yes	SpO2	SpO2	SpO2
Data storage, hr	96 at 2 sec resolution	Not specified	4,000 spot measurements	Not specified

Manufacturer	**Masimo Corp** Radius-7 with Root	**Maxtec** MD300 C2	**Maxtec** PULSOX-300	**Maxtec** PULSOX-300i
External output	Wireless 802.11, Bluetooth, analog, serial, nurse call, SatShare, Philips VueLink, Spacelabs Flexport, RadNet, ASCII1, Philips Intellibridge	Not specified	Not specified	Yes
PRINTER/RECORDER	No	No	No	Yes
MRI CONDITIONAL	No	Not specified	Not specified	Not specified
LINE POWER, VAC	100-240, 47-63 Hz, 55 VA	Battery only	Battery only	Battery only
BATTERY TYPE (NUMBER)	Lithium-ion	AAA (2)	AAA (1)	AAA (1)
Life, hr	Root: 4; Radius-7:12	30	80	30
Rechargeable	Yes	No	No	No
Recharge time, hr	Root: 2.2; Radius-7: 4.3	NA	NA	NA
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	Root: 28 x 26.7 x 14 (11 x 10.5 x 5.5); Radius-7: 13 x 7 x 3 (5.1 x 2.8 x 1.2)	5.8 x 3.2 x 3.4 (2.3 x 1.3 x 1.3)	5.8 x 5.8 x 1.5 (2.3 x 2.7 x 0.6)	5.8 x 6.8 x 1.5 (2.3 x 2.7 x 0.6)
WEIGHT, g (oz)	Root: 3,370 (118.7); Radius-7: 155 (5.5)	50 (1.8) with batteries	57 (2)	60 (2.1) including battery
PURCHASE INFORMATION				
List price	$1,795<1>	Not specified	Not specified	$1,190<1>
Warranty	1 year	1 year	1 year	1 year
Delivery time, ARO	1 week	Not specified	Not specified	Not specified
Year first sold	2014	Not specified	Not specified	Not specified
Fiscal year	January to December	April to March	April to March	April to March
OTHER SPECIFICATIONS	Measures respiration rate (RRa) noninvasively; enables tetherless monitoring; 802.11 abg, classic Bluetooth. Meets requirements of CSA, TUV, and UL.	Protective rubber case and lanyard included.	None specified.	Optional accessories include USB adapter and PROFOX software.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	December 2015	March 2016	March 2016	March 2016
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Base unit only; Root $3,500, price includes SpO2, pulse rate, and perfusion index.			<1>Pricing information derived from ECRI Institute's PricePaid database.

Manufacturer	Mediaid Inc Model 100	Mediaid Inc Model 130	Mediaid Inc Model 30	Mediaid Inc Model 300
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone, minipocket size	Stand-alone, minipocket size	Stand-alone	Stand-alone, handheld
MOUNTING OPTIONS	Not specified	No	IV pole clamp	IV pole clamp
DISPLAYS	SpO2, pulse rate	SpO2, pulse rate	SpO2, pulse rate	SpO2, pulse rate
Type	LED	LED	LED	LED
SpO2 RANGE, %	20-100	20-100	0-100	0-100
Accuracy, %	70-100 ±2, 60-69 ±3	70-100 ±2, 60-69 ±3	70-100 ±2, 60-69 ±3	70-100 ±2, 60-69 ±3
PULSE RATE, bpm	25-250	25-250	25-255	32-250
Accuracy	2 bpm or 2%, whichever is greater	2 bpm or 2%, whichever is greater	2 bpm or 2%, whichever is greater	Not specified
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Not specified	Not specified	Yes	Not specified
RESPONSE TIME, sec	Every pulse	Every pulse	Every pulse	Every pulse
ALARMS				
Audible and visual	No	No	No	No
Visual only	No	No	No	No
ALARM OVERRIDE	No	No	No	No
Reactivation method	NA	NA	NA	NA
Volume control	NA	NA	NA	NA
SELF-TEST MODE	No	No	No	Yes
PROBE TYPES				
Disposable	Cable adapter for pediatric/adult use	Cable adapter for pediatric/adult use	Yes	Multisite adhesive
Reusable	Integral finger, cable adapter for pediatric/adult use	Integral finger, cable adapter for pediatric/adult use	Yes	Universal hinged, tape-on, soft, pediatric, adjustable, great toe, ear clip, R-adhesive
Patient range	Adult, pediatric; small to large	Adult, pediatric; small to large	Adult, pediatric; small to large	Adult, pediatric; small to large
Cable length, m (ft)	0.76 (2.5), 2.4 (8)	0.76 (2.5), 2.4 (8)	0.76 (2.5), 2.4 (8)	0.76 (2.5), 2.4 (8)
DATA MANAGEMENT	Not specified	Yes	Not specified	Not specified
Data stored	Not specified	Yes	Not specified	Not specified
Data storage, hr	Not specified	11.5	Not specified	Not specified

Manufacturer	Mediaid Inc Model 100	Mediaid Inc Model 130	Mediaid Inc Model 30	Mediaid Inc Model 300
External output	No	Yes	No	No
PRINTER/RECORDER	No	Optional	No	No
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	Battery only	Battery only	Yes	Battery only
BATTERY TYPE (NUMBER)	AA alkaline (1)	AA alkaline (1)	Lithium-ion	AA alkaline (6)
Life, hr	14	14	18	8
Rechargeable	Not specified	Not specified	Yes	Not specified
Recharge time, hr	Not specified	Not specified	Not specified	Not specified
Low-battery notice	No	No	Yes	Yes
H x W x D, cm (in)	11.4 x 4.6 x 2.5 (4.5 x 1.8 x 1)	11.9 x 4.6 x 2.5 (4.7 x 1.8 x 1)	14 x 7.6 x 2.7 (5.5 x 3 x 1.1)	19.1 x 8.9 x 3.5 (7.5 x 3.5 x 1.4)
WEIGHT, g (oz)	90 (3.2) with batteries	90 (3.2) with batteries	200 (7.1)	440 (15.5)
PURCHASE INFORMATION				
List price	Not specified	Not specified	Not specified	Not specified
Warranty	2 years; 1 year, sensors	2 years; 1 year, sensors	2 years; 1 year, sensors	5 years; 1 year, sensors
Delivery time, ARO	7-10 days	7-10 days	3-5 days	7-10 days
Year first sold	2002	2002	2007	1991
Fiscal year	Not specified	Not specified	Not specified	Not specified
OTHER SPECIFICATIONS	Mini spot-check. Meets requirements of CSA and TUV.	Mini spot-check; memory; infrared data output; for use with infrared data converter; optional OxySoft software program. Meets requirements of CSA and TUV.	Palm size, spot-check. Meets requirements of CSA.	Handheld for spot-checks; price includes 5-year warranty, 1 sensor with 1-year warranty, 6 AA batteries, and choice of accessory. Meets requirements of CSA 601-1 and TUV (IEC 601-1). ETL listed (UL-544).
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	June 2016	June 2016	June 2016	June 2016

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	Mediaid Inc Model 305	Mediaid Inc Model 30B	Mediaid Inc Model 31DT	Mediaid Inc Model 34
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone, handheld	Stand-alone	Tabletop	Stand-alone
MOUNTING OPTIONS	IV pole clamp	IV pole clamp	IV pole clamp	IV pole clamp
DISPLAYS	SpO2, pulse rate	SpO2, pulse rate	SpO2, pulse rate	SpO2, pulse rate
Type	LED	LED	LED	LED
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2, 60-69 ±3	70-100 ±2, 60-69 ±3	70-100 ±2, 60-69 ±3	70-100 ±2, 60-69 ±3
PULSE RATE, bpm	32-250	25-255	25-255	25-255
Accuracy	Not specified	2 bpm or 2%, whichever is greater	2 bpm or 2%, whichever is greater	2 bpm or 2%, whichever is greater
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Not specified	Yes	Yes	Yes
RESPONSE TIME, sec	Every pulse	Every pulse	Every pulse	Every pulse
ALARMS				
Audible and visual	No	No	Yes	Yes
Visual only	No	No	Lights	Lights
ALARM OVERRIDE	No	No	Yes	Yes
Reactivation method	NA	NA	Yes	Yes
Volume control	NA	NA	Yes	Yes
SELF-TEST MODE	Yes	No	Yes	Yes
PROBE TYPES				
Disposable	Multisite adhesive	Yes	Yes	Yes
Reusable	Universal hinged, tape-on, soft, pediatric, adjustable, great toe, ear clip, R-adhesive	Yes	Yes	Yes
Patient range	Adult, pediatric; small to large	Adult, pediatric; small to large	Adult, pediatric; small to large	Adult, pediatric; small to large
Cable length, m (ft)	0.76 (2.5), 2.4 (8)	0.76 (2.5), 2.4 (8)	0.76 (2.5), 2.4 (8)	0.76 (2.5), 2.4 (8)
DATA MANAGEMENT	Not specified	Not specified	Yes	Yes
Data stored	Not specified	Not specified	Yes	Yes
Data storage, hr	Not specified	Not specified	136	136

Manufacturer	Mediaid Inc Model 305	Mediaid Inc Model 30B	Mediaid Inc Model 31DT	Mediaid Inc Model 34
External output	No	No	Yes	Yes
PRINTER/RECORDER	No	No	Optional	Optional
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	AC adapter	Battery only	Not specified	Not specified
BATTERY TYPE (NUMBER)	Ni-Cd	AAA (6)	Lithium-ion	Lithium-ion
Life, hr	12	18	18	18
Rechargeable	Yes	No	Yes	Yes
Recharge time, hr	8	NA	Not specified	Not specified
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	19.1 x 8.9 x 3.5 (7.5 x 3.5 x 1.4)	14 x 7.6 x 2.7 (5.5 x 3 x 1.1)	14 x 7.6 x 2.7 (5.5 x 3 x 1.1)	14 x 7.6 x 2.7 (5.5 x 3 x 1.1)
WEIGHT, g (oz)	450 (15.9)	200 (7.1)	200 (7.1)	200 (7.1)
PURCHASE INFORMATION				
List price	Not specified	Not specified	Not specified	Not specified
Warranty	5 years; 1 year, 1 sensor	2 years; 1 year, sensors	2 years; 1 year, sensors	2 years; 1 year, sensors
Delivery time, ARO	7-10 days	3-5 days	3-5 days	3-5 days
Year first sold	1991	2007	2007	2007
Fiscal year	Not specified	Not specified	Not specified	Not specified
OTHER SPECIFICATIONS	Palm size; choice of accessory. Meets requirements of CSA 601-1 and TUV (IEC 601-1). ETL listed (UL 544).	Palm size, spot-check. Meets requirements of CSA.	Continuous monitor. Meets requirements of CSA.	Palm size, continuous monitor. Meets requirements of CSA.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	June 2016	June 2016	June 2016	June 2016

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	Mediaid Inc Model 340	Mediaid Inc Model 34B	Mediaid Inc Model 5305	Mediaid Inc Model 5340
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone, handheld	Stand-alone	Stand-alone, handheld	Stand-alone, handheld
MOUNTING OPTIONS	IV pole clamp	IV pole clamp	IV pole clamp	IV pole clamp
DISPLAYS	SpO2, pulse rate	SpO2, pulse rate	SpO2, pulse rate	SpO2, pulse rate
Type	LED	LED	LED	LED
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2, 60-69 ±3	70-100 ±2, 60-69 ±3	70-100 ±2, 60-69 ±3	70-100 ±2, 60-69 ±3
PULSE RATE, bpm	32-250	25-255	32-250	32-250
Accuracy	Not specified	2 bpm or 2%, whichever is greater	Not specified	Not specified
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Not specified	Yes	Not specified	Not specified
RESPONSE TIME, sec	Every pulse	Every pulse	Every pulse	Every pulse
ALARMS				
Audible and visual	High/low SpO2, pulse rate	Yes	No	High/low SpO2, pulse rate
Visual only	Lights, high, low	Lights	No	Lights, high, low
ALARM OVERRIDE	Yes	Yes	No	Yes
Reactivation method	Press button for 3 sec	Yes	NA	Press button for 3 sec
Volume control	Yes	Yes	NA	Yes
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Multisite adhesive	Yes	Multisite adhesive	Multisite adhesive
Reusable	Universal hinged, tape-on, soft, pediatric, adjustable, great toe, ear clip, R-adhesive	Yes	Universal hinged, tape-on, soft, pediatric, adjustable, great toe, ear clip, R-adhesive	Universal hinged, tape-on, soft, pediatric, adjustable, great toe, ear clip, R-adhesive
Patient range	Adult, pediatric; small to large	Adult, pediatric; small to large	Adult, pediatric; small to large	Adult, pediatric; small to large
Cable length, m (ft)	0.76 (2.5), 2.4 (8)	0.76 (2.5), 2.4 (8)	0.76 (2.5), 2.4 (8)	0.76 (2.5), 2.4 (8)
DATA MANAGEMENT	Not specified	Yes	Not specified	Not specified
Data stored	Not specified	Yes	Not specified	Not specified
Data storage, hr	Not specified	136	Not specified	Not specified

Manufacturer	Mediaid Inc Model 340	Mediaid Inc Model 34B	Mediaid Inc Model 5305	Mediaid Inc Model 5340
External output	Analog/serial	Yes	No	Analog/serial
PRINTER/RECORDER	No	Optional	No	No
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	AC adapter	Battery only	AC adapter	AC adapter
BATTERY TYPE (NUMBER)	Ni-Cd	AAA (6)	Ni-Cd	Ni-Cd
Life, hr	12	18	12	12
Rechargeable	Yes	No	Yes	Yes
Recharge time, hr	8	Not specified	8	8
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	19.1 x 8.9 x 3.5 (7.5 x 3.5 x 1.4)	14 x 7.6 x 2.7 (5.5 x 3 x 1.1)	19.1 x 8.9 x 3.5 (7.5 x 3.5 x 1.4)	19.1 x 8.9 x 3.5 (7.5 x 3.5 x 1.4)
WEIGHT, g (oz)	490 (17.3)	200 (7.1)	450 (15.9)	490 (17.3)
PURCHASE INFORMATION				
List price	Not specified	Not specified	Not specified	Not specified
Warranty	5 years; 1 year, 1 sensor	2 years; 1 year, sensors	5 years; 1 year, sensors	5 years; 1 year, 1 sensor
Delivery time, ARO	7-10 days	3-5 days	7-10 days	7-10 days
Year first sold	1992	2007	1991	1992
Fiscal year	Not specified	Not specified	Not specified	Not specified
OTHER SPECIFICATIONS	Choice of accessory. Meets requirements of CSA 601-1 (UL 544) and TUV (IEC 601-1).	Palm size, continuous monitor. Meets requirements of CSA.	Choice of accessory. Meets requirements of CSA 601-1 and TUV (IEC 601-1). ETL listed (UL 544).	Choice of accessory. Meets requirements of CSA 601-1 (UL 544) and TUV (IEC 601-1).
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	June 2016	June 2016	June 2016	June 2016

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	Mediaid Inc Model 900	Medlab Medizinische Diagnosegeraete GmbH NANOX10	Medlab Medizinische Diagnosegeraete GmbH NANOX10C	Medlab Medizinische Diagnosegeraete GmbH NANOXeco
WHERE MARKETED	Worldwide, except USA	Africa, Asia, Australia, Europe, South America	Africa, Asia, Australia, Europe, South America	Africa, Asia, Australia, Europe, South America
FDA CLEARANCE	No	No	No	No
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone	Stand-alone, handheld	Stand-alone, handheld	Stand-alone, handheld
MOUNTING OPTIONS	Cart	Clamps for infusion stand or anesthetic rail	Clamps for infusion stand or anesthetic rail	Clamps for infusion stand or anesthetic rail
DISPLAYS	SpO2, pulse rate, waveform	Alarms, SpO2, pulse rate, plethysmogram	Alarms, SpO2, pulse rate, plethysmogram	SpO2, pulse rate
Type	LED, LCD	Backlight graphical color TFT LCD	Backlight graphical color TFT LCD	2-color (blue/green) LED
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2, 60-69 ±3	70-100 ±2 adults, ±3 infants	70-100 ±2 adults, ±3 infants	70-100 ±2 adults, ±3 children
PULSE RATE, bpm	Not specified	30-250	30-250	30-250
Accuracy	Not specified	±1	±1	±1
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Not specified	Pulse bar graph and perfusion index bar	Pulse bar graph and perfusion index bar	Pulse bar graph
RESPONSE TIME, sec	Every pulse	1	1	1
ALARMS				
Audible and visual	High/low SpO2, pulse rate	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	No
Visual only	Lights, high, low	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	No
ALARM OVERRIDE	Yes	Audible	Audible	No
Reactivation method	Press button for 3 sec	Automatic	Automatic	NA
Volume control	Yes	Yes	Yes	NA
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Multisite adhesive	Finger, foot (infant)	Finger, foot (infant)	Finger, foot (infant)
Reusable	Universal hinged, tape-on, soft, pediatric, adjustable, great toe, ear clip, R-adhesive	Finger, multisite	Finger, multisite	Finger, multisite
Patient range	Adult, pediatric; small to large	Adult, infant	Adult, infant	Adult, infant, neonate
Cable length, m (ft)	0.76 (2.5), 2.4 (8)	1.4 (4.5)	1.4 (4.5)	1.4 (4.5)
DATA MANAGEMENT	Not specified	Yes	Yes	No
Data stored	Not specified	SpO2, pulse rate	SpO2, pulse rate	NA
Data storage, hr	Not specified	55 plus SD card interface, unlimited storage	55 plus SD car interface, unlimited storage	NA

Manufacturer	Mediaid Inc Model 900	Medlab Medizinische Diagnosegeraete GmbH NANOX10	Medlab Medizinische Diagnosegeraete GmbH NANOX10C	Medlab Medizinische Diagnosegeraete GmbH NANOXeco
External output	Analog/serial	Optical, SD card interface	Optical, SD card interface	NA
PRINTER/RECORDER	No	Optional	Optional	NA
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	AC adapter	Battery only	230, optional 115	Battery only
BATTERY TYPE (NUMBER)	Ni-Cd	AA (4), optional Ni-MH battery pack with fast charger	Battery pack with fast charger stand	AA (2)
Life, hr	3-6	40	18	18
Rechargeable	Yes	No	Yes	Optional
Recharge time, hr	8	NA	3	External only
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	30 x 20 x 9.8 (11.8 x 7.9 x 3.9)	17 x 8 x 2.5 (6.7 x 3.1 x 1)	17 x 8 x 2.5 (6.7 x 3.1 x 1)	6.5 x 13 x 2.2 (2.5 x 5.1 x .86)
WEIGHT, g (oz)	2,500 (88.2)	240 (8.5)	240 (8.5)	130 (4.6)
PURCHASE INFORMATION				
List price	Not specified	$592 (€520)	$914 (€805)	$380 (€335)
Warranty	5 years; 1 year, sensors	2 years, device and probe	2 years, device and probe	2 years, device and probe
Delivery time, ARO	7-10 days	5 days	5 days	5 days
Year first sold	Not specified	2005	2005	2004
Fiscal year	Not specified	January to December	January to December	January to December
OTHER SPECIFICATIONS	Nurse call. Meets requirements of CSA 601-1. ETL listed (UL 544).	Meets requirements of ISO 80601-2-61 and IEC 60601-1.	Meets requirements of ISO 80601-2-61 and IEC 60601-1.	Meets requirements of ISO 80601-2-61 and IEC 60601-1.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	June 2016	June 2016	June 2016	June 2016

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	Medlab Medizinische Diagnosegeraete GmbH PEARL 100	Medlab Medizinische Diagnosegeraete GmbH PEARL 10C	Medlab Medizinische Diagnosegeraete GmbH PEARL10	Medlab Medizinische Diagnosegeraete GmbH PEARL5
WHERE MARKETED	Africa, Asia, Australia, Europe, South America	Africa, Asia, Australia, Europe, South America	Africa, Asia, Australia, Europe, South America	Africa, Asia, Australia, Europe, South America
FDA CLEARANCE	No	No	No	No
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone, tabletop	Stand-alone, handheld	Stand-alone, handheld	Stand-alone, handheld
MOUNTING OPTIONS	Clamps for infusion stand or anesthetic rail	Clamps for infusion stand or anesthetic rail	Clamps for infusion stand or anesthetic rail	Clamps for infusion stand or anesthetic rail
DISPLAYS	SpO2, pulse rate, plethysmogram, ECG, alarms, optional ECG	SpO2, pulse rate, plethysmogram, alarms	Alarms, SpO2, pulse rate, plethysmogram	SpO2, pulse rate, plethysmogram
Type	Backlit graphical color TFT LCD	Backlit graphical color TFT LCD	Backlit graphical color TFT LCD	Backlit graphical color TFT LCD
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2 adults, ±3 children	70-100 ±2 adults, ±3 infants	70-100 ±2 adults, ±3 infants	70-100 ±2 adults, ±3 infants
PULSE RATE, bpm	30-250	30-250	30-250	30-250
Accuracy	±3	±1	±1	±3
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Pulse bar graph and perfusion index bar	Pulse bar graph and perfusion index bar	Pulse bar graph and perfusion index bar	Pulse bar graph and perfusion index bar
RESPONSE TIME, sec	1	1	1	1
ALARMS				
Audible and visual	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	No
Visual only	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	No
ALARM OVERRIDE	Audible	Audible	Audible	No
Reactivation method	Automatic	Automatic	Automatic	NA
Volume control	Yes	Yes	Yes	NA
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Finger, foot (neonate)	Finger, foot (neonate)	Finger, foot (neonate)	Finger, foot (neonate)
Reusable	Finger, multisite	Finger, multisite	Finger, multisite	Finger, multisite
Patient range	Adult, infant, neonate	Adult, infant, neonate	Adult, infant, neonate	Adult, infant, neonate
Cable length, m (ft)	2.9 (9.5)	1.4 (4.5)	1.4 (4.5)	1.4 (4.5)
DATA MANAGEMENT	Yes	Yes	Yes	Yes
Data stored	SpO2, pulse rate	SpO2, pulse rate	SpO2, pulse rate	SpO2, pulse rate
Data storage, hr	100	55 plus SD card interface, unlimited storage	55 plus SD card interface, unlimited storage	55

Manufacturer	Medlab Medizinische Diagnosegeraete GmbH PEARL 100	Medlab Medizinische Diagnosegeraete GmbH PEARL 10C	Medlab Medizinische Diagnosegeraete GmbH PEARL10	Medlab Medizinische Diagnosegeraete GmbH PEARL5
External output	RS232, optical, Bluetooth	Optical, SD card interface	Optical, SD card interface, unlimited storage	Optical
PRINTER/RECORDER	Optional	Optional	Optional	Optional
MRI CONDITIONAL	No	No	N0	No
LINE POWER, VAC	115/230	230, optional 115	NA	NA
BATTERY TYPE (NUMBER)	Ni-MH 7.2 V 2,000 mAh (not specified)	Battery pack with fast charger	AA (4), optional Ni-MH battery pack with fast charger	AA (2)
Life, hr	6	18	40	22
Rechargeable	Yes	Yes	No	No
Recharge time, hr	15	3	NA	NA
Low-battery notice	Yes	Yes	NA	Yes
H x W x D, cm (in)	23 x 20 x 8 (9.1 x 7.9 x 3.1)	17 x 8 x 2.5 (6.7 x 3.1 x 1)	17 x 8 x 2.5 (6.7 x 3.1 x 1)	6.5 x 13 x 2.2 (2.5 x 5.1 x 0.9)
WEIGHT, g (oz)	1,650 (58.2)	240 (8.5)	240 (8.5)	130 (4.6)
PURCHASE INFORMATION				
List price	$2,146 (€1,890)	$1,185 (€1,043)	$816 (€760)	$408 (€360)
Warranty	2 years, device and probe	2 years, device and probe	2 years, device and probe	2 years, device and probe
Delivery time, ARO	10 days	5 days	5 days	5 days
Year first sold	2005	2005	2005	2014
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	1-channel ECG; artifact suppression; displays histograms and other statistical information of stored data blocks; can print to a standard laser printer over Bluetooth; can be part of a wireless network (POXNet); optional ECG. Meets requirements of ISO 80601-2-61 and IEC 60601-1.	Artifact suppression; Meets requirements of ISO 80601-2-61 and IEC 60601-1.	Artifact suppression. Meets requirements of ISO 80601-2-61 and IEC 60601-1.	Artifact suppression. Meets requirements of ISO 80601-2-61 and IEC 60601-1.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	June 2016	June 2016	June 2016	June 2016

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	Medlab Medizinische Diagnosegeraete GmbH PEARL8	Medlab Medizinische Diagnosegeraete GmbH P-OX 100	Medlab Medizinische Diagnosegeraete GmbH VITROmap	Mindray Medical International Ltd PM-50
WHERE MARKETED	Africa, Asia, Australia, Europe, South America	Africa, Asia, Australia, Europe, South America	Africa, Asia, Australia, Europe, South America	Worldwide
FDA CLEARANCE	No	No	No	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone, handheld	Stand-alone, tabletop	Stand-alone, tabletop	Stand-alone
MOUNTING OPTIONS	Clamps for infusion stand or anesthetic rail	Clamps for infusion stand or anesthetic rail	No	No
DISPLAYS	SpO2, pulse rate, plethysmogram	SpO2, pulse rate, plethysmogram, ECG, alarms, optional ECG	Alarms, SpO2, pulse rate, plethysmogram	SpO2, pulse rate, pulse-amplitude bar, system status, ID
Type	Backlit graphical color TFT LCD	Backlit graphical color TFT LCD	Backlit graphical color TFT LCD	Matrix LCD, not <4.2 x 3.5 cm
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ± 2 adults, ±3 infants	70-100 ±2 adults, ±3 children	700-100 ±2 adults, ±3 infants	70-100 ±2 adult/pediatric (±3 neonatal)
PULSE RATE, bpm	30-250	30-250	30-250	25-254
Accuracy	±3	±1	±3	±2 bpm
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Pulse bar graph and perfusion index bar	Pulse bar graph and perfusion index bar	Pulse bar graph and perfusion index bar	Yes
RESPONSE TIME, sec	1	1	1	Beat to beat
ALARMS				
Audible and visual	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	No
Visual only	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	High/low SpO2, pulse rate, low battery, probe or patient disconnected	Low battery
ALARM OVERRIDE	Audible	Audible	Audible	No
Reactivation method	Automatic	Automatic	Automatic	NA
Volume control	Yes	Yes	Yes	NA
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Finger, foot (neonate)	Finger, foot (infant)	Finger, foot (neonate)	Yes
Reusable	Finger, multisite	Finger, multisite	Finger, multisite	Finger, multisite
Patient range	Adult, infant, neonate	Adult, infant	Adult, infant, neonate	Adult, pediatric, neonate
Cable length, m (ft)	1.4 (4.5)	2.9 (9.5)	1.4 (4.5)	Not specified
DATA MANAGEMENT	Yes	Yes	Yes	Yes
Data stored	SpO2, pulse rate	SpO2, pulse rate	SpO2, pulse rate	100 patient IDs, 200 data records
Data storage, hr	55	100	50	Not specified

Manufacturer	Medlab Medizinische Diagnosegeraete GmbH PEARL8	Medlab Medizinische Diagnosegeraete GmbH P-OX 100	Medlab Medizinische Diagnosegeraete GmbH VITROmap	Mindray Medical International Ltd PM-50
External output	Optical	RS232, optical, Bluetooth	No	Yes
PRINTER/RECORDER	Optional	Optional	Optional	No
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	NA	115/230	230, optional 115	Battery only
BATTERY TYPE (NUMBER)	AA (2)	Ni-MH 7.2 V 2,000 mAh (not specified)	Ni-MH 7.2 V, 2,000 mAh (Not specified)	1.5 V AA alkaline or rechargeable (4)
Life, hr	22	6	12	15
Rechargeable	No	Yes	Yes	Yes
Recharge time, hr	NA	15	15	Not specified
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	6.5 x 13 x 2.2 (2.5 x 5.1 x 0.9)	23 x 20 x 8 (9.1 x 7.9 x 3.1)	14 x 15 x 10 (5.5 x 5.9 x 4)	14 x 6.5 x 3.2 (5.5 x 2.6 x 1.3)
WEIGHT, g (oz)	130 (4.6)	1,650 (58.2)	650 (23.2)	130 (4.6) without battery and sensor
PURCHASE INFORMATION				
List price	$563 (€495)	$1,919 (€1,690)	$784 (€690)	Not specified
Warranty	2 years, device and probe	2 years, device and probe	2 years, device and probe	18 months, main unit
Delivery time, ARO	5 days	10 days	10 days	Not specified
Year first sold	2014	2005	2013	2004
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	Artifact suppression; Meets requirements of ISO 80601-2-61 and 60601-1	1-channel ECG; displays histograms and other statistical information of stored data blocks; can print to a standard laser printer over Bluetooth. Meets requirements of ISO 80601-2-61 and IEC 60601-1.	Artifact suppression. Meets requirements of ISO 80601-2-61 and IEC 60601-1.	None specified.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	June 2016	June 2016	June 2016	December 2013

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	Mindray Medical International Ltd PM-60	Nihon Kohden America Inc OLV-2700K	Nonin Medical Inc 2500 PalmSAT	Nonin Medical Inc 2500A PalmSAT
WHERE MARKETED	Worldwide	Worldwide, except USA and China	Worldwide	Worldwide
FDA CLEARANCE	Yes	No	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone	Stand-alone	Stand-alone	Stand-alone
MOUNTING OPTIONS	Yes	Pole	Charger stand	Charger stand
DISPLAYS	SpO2, pulse rate, pulse-amplitude bar, system status, alarm messages, time, ID, waveforms	SpO2, pulse rate, pulse-detection display, bar graph, measurement status indicator, power status indicator	SpO2, pulse rate, pulse quality	SpO2, pulse rate, pulse quality
Type	6.1 cm (2.4") color LCD	LED	LED	LED
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2 adult/pediatric (±3 neonatal)	80-100 ±2, 70-80 ±3, <70, accuracy not specified	70-100 ±2 (no motion); ±3 (motion, low-perfusion)	70-100 ±2 (no motion); ±3 (motion, low-perfusion)
PULSE RATE, bpm	18-300	30-300	18-321	18-321
Accuracy	±3 bpm (non-motion), ±5 bpm (motion)	±3% ±1	18-300 ±3 digits (no motion), 40-240 ±3 digits (low-perfusion), 40-240 ±5 digits (motion)	18-300 ±3 digits (no motion), 40-240 ±3 digits (low-perfusion), 40-240 ±5 digits (motion)
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Yes	No	Tricolor pulse quality LED	Tricolor pulse quality LED
RESPONSE TIME, sec	Beat to beat	1	1.5	1.5
ALARMS				
Audible and visual	High/low SpO2 and pulse rate, sensor off, technical alarm, low battery	High/low SpO2, pulse rate, measurement condition, no pulse, connector off, no probe, check probe, battery-depleted, low battery, unit malfunction, probe failure	NA	High/low SpO2 and pulse, low perfusion, inadequate signal, no data, low/critical battery, sensor fault, system fault
Visual only	High/low SpO2 and pulse rate, sensor off, sensor signal, low battery, technical alarm	Blinking LED	Pulse quality, sensor fault, inadequate signal, low battery	NA
ALARM OVERRIDE	Yes	Yes	No	Yes
Reactivation method	Manual	Auto after 60, 90, 120 sec (user selectable) or manual	NA	Automatic after 2 min or manual
Volume control	Yes	8 steps	NA	Yes
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Yes	Finger, multisite	Repositionable comfort adhesive wrap	Repositionable comfort adhesive wrap
Reusable	Finger, multisite	Finger, multisite	Finger-clip, soft, flex, forehead, ear	Finger-clip, soft, flex, forehead, ear
Patient range	Adult, pediatric, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	Not specified	1.6 (5.3), 0.8 (2.6); extension 2.5 (8.2)	1 (3.3), 2 (6.6), 3 (10)	1 (3.3), 2 (6.6), 3 (10)
DATA MANAGEMENT	Yes	Not specified	Yes	Yes
Data stored	Spot-check of 1-99 IDs with total 4,000 sets of measurements, continuous monitoring with ≤96-hr trend	Not specified	SpO2, pulse rate, pulse quality	SpO2, pulse rate, pulse quality
Data storage, hr	96	Not specified	72	72

Manufacturer	Mindray Medical International Ltd PM-60	Nihon Kohden America Inc OLV-2700K	Nonin Medical Inc 2500 PalmSAT	Nonin Medical Inc 2500A PalmSAT
External output	Yes	Not specified	RS232; USB adapter (Continua compliant option); nVISION software compatible	RS232; USB adapter (Continua compliant option); nVISION software compatible
PRINTER/RECORDER	No	No	No	No
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	Battery, DC power	100-127, 220-240	110/240 with optional charging stand	110/240 with optional charging stand
BATTERY TYPE (NUMBER)	Lithium-ion (1) or AA (3)	Optional Ni-MH (1)	AA alkaline (4) or Ni-MH rechargeable (4)	AA alkaline (4) or Ni-MH rechargeable (4)
Life, hr	24 (lithium-ion), 36 (AA)	2	80	60
Rechargeable	Yes	Yes	Optional	Optional
Recharge time, hr	2	Not specified	3	3
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	12 x 5.5 x 3 (4.7 x 2.2 x 1.2)	6.2 x 21 x 16.4 (2.4 x 8.3 x 6.5)	3.2 x 7 x 13.8 (1.3 x 2.8 x 5.4)	3.2 x 7 x 13.8 (1.3 x 2.8 x 5.4)
WEIGHT, g (oz)	300 (10.6) with battery	1,000 (35.3)	210 (7.4)	213 (7.5) including batteries
PURCHASE INFORMATION				
List price	Not specified	Not specified	$565[1]	$735[1]
Warranty	18 months, main unit	Not specified	3 years	3 years
Delivery time, ARO	Not specified	Not specified	Not specified	Not specified
Year first sold	2007	2005	2000	2005
Fiscal year	January to December	April to March	January to December	January to December
OTHER SPECIFICATIONS	None specified.	None specified.	72-hr memory; accessories include PalmSAT charger stand, case, and PC interface cable.	Accessories include PalmSAT charger stand, case, and PC interface cable.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	December 2013	December 2015	January 2016	January 2016
Supplier Footnotes				
Model Footnotes		Marketed as OLV-2700 in the Japanese market		
Data Footnotes			[1]Replacement probe $107-210; pricing information derived from ECRI Institute's PricePaid database.	[1]Replacement probe $107-210; pricing information current as of January 2011.

Manufacturer	Nonin Medical Inc 7500 Pulse Oximeter	Nonin Medical Inc 7500FO (Fiberoptic)	Nonin Medical Inc 8500	Nonin Medical Inc 8500M
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone	Stand-alone	Stand-alone	Stand-alone
MOUNTING OPTIONS	Pole	Pole	Pole, wall	Pole, wall
DISPLAYS	SpO2, pulse rate, pulse quality, pulse strength, sensor indicator, alarm settings, AC power indicator	SpO2, pulse rate, pulse quality, pulse strength, sensor indicator, alarm settings, AC power indicator	SpO2, pulse rate	SpO2, pulse rate
Type	LED	LED	LED	LED
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2 (no motion); ±3 (motion, low-perfusion)	70-100 ±2 (no motion); ±3 (motion, low-perfusion)	70-100 ±2	70-100 ±2
PULSE RATE, bpm	18-321	18-321	18-300	18-321
Accuracy	18-300 ±3 digits (no motion), 40-240 ±3 digits (low-perfusion), 40-240 ±5 digits (motion)	18-300 ±3 digits (no motion), 40-240 ±3 digits (low-perfusion), 40-240 ±5 digits (motion)	±3 digits	±3 digits
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Tricolor bar graph	Tricolor bar graph	Tricolor LED	Tricolor LED
RESPONSE TIME, sec	1.5	1.5	1.5	1.5
ALARMS				
Audible and visual	High/low SpO2 and pulse, sensor fault, self-test, low battery, variable pulse tone	High/low SpO2 and pulse, sensor fault, self-test, low battery, variable pulse tone	NA	NA
Visual only	High/low SpO2 and pulse rate, pulse quality/low-perfusion, alarm silence, battery, sensor-fault	High/low SpO2 and pulse rate, pulse quality/low-perfusion, alarm silence, battery, sensor-fault	Pulse quality, sensor fault, inadequate signal, low battery	Pulse quality, sensor fault, inadequate signal, low battery
ALARM OVERRIDE	Yes	Yes	No	No
Reactivation method	Automatic after 2 min or manual	Automatic after 2 min or manual	NA	Not specified
Volume control	Yes	Yes	NA	Not specified
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Repositionable comfort adhesive wrap	Flex	Repositionable comfort adhesive wrap	Repositionable comfort adhesive wrap
Reusable	Finger-clip, soft, flex, forehead, ear	Finger-clip, soft, flex, forehead, ear	Flinger-clip, soft, flex, forehead, ear	Finger-clip, soft, flex, forehead, ear
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	1 (3.3), 2 (6.6), 3 (10)	6.1 (20), 9.1 (29.9)	1 (3.3), 2 (6.6), 3 (9.8)	1 (3.3), 2 (6.6), 3 (9.8)
DATA MANAGEMENT	Yes	Yes	No	Yes
Data stored	SpO2 and pulse rate, current time/date	SpO2 and pulse rate, current time/date	NA	SpO2, pulse rate, pulse quality
Data storage, hr	70 continuous, nonvolatile	70 continuous, nonvolatile	NA	72

Manufacturer	Nonin Medical Inc 7500 Pulse Oximeter	Nonin Medical Inc 7500FO (Fiberoptic)	Nonin Medical Inc 8500	Nonin Medical Inc 8500M
External output	RS232, analog, digital; nVISION software compatible	RS232, analog, digital; nVISION software compatible	USB nVISION software compatible	USB nVISION software compatible
PRINTER/RECORDER	Optional	Optional	Yes	Yes
MRI CONDITIONAL	No	Yes	No	No
LINE POWER, VAC	110/240	110/240	Battery only	Battery only
BATTERY TYPE (NUMBER)	Ni-MH (not specified)	Ni-MH (not specified)	AA (6)	AA (6)
Life, hr	16	16	100 maximum display brightness, 160 normal brightness	100 maximum display brightness, 160 normal brightness
Rechargeable	Yes	Yes	Optional	Optional
Recharge time, hr	4	4	Not specified	Not specified
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	21.9 x 9.2 x 14.2 (8.6 x 3.6 x 5.6)	21.9 x 9.2 x 14.2 (8.6 x 3.6 x 5.6)	15 x 8 x 2.5 (6 x 3 x 1)	15 x 8 x 2.5 (6 x 3 x 1)
WEIGHT, g (oz)	900 (31.7)	1,000 (35.3)	280 (10)	280 (10)
PURCHASE INFORMATION				
List price	$875<1>	$1,650<1>	$675<1>	$675<1>
Warranty	3 years	3 years	3 years	3 years
Delivery time, ARO	From stock	From stock	Not specified	Not specified
Year first sold	2007	2007	1990	1990
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	Patient security mode with locked keys and settings; variable volume and alarm settings; latched/unlatched alarms; adjustable LEDs; Nonin's PureSAT signal processing technology; accessories include carrying case, pole clamp, and rolling stands.	Patient security mode with locked keys and settings; variable volume and alarm settings; latched/unlatched alarms; adjustable LEDs; Nonin's PureSAT signal processing technology; accessories include carrying case, pole clamp.	Serial to USB adapter.	18-hr memory; serial to USB adapter.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	January 2016	January 2016	January 2016	January 2016
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Replacement probe $107-210; pricing information derived from ECRI Institute's PricePaid database.	<1>Replacement probe $950-1,050; pricing information current as of January 2011.	<1>Replacement probe $107-210.	<1>Replacement probe $107-210.

Manufacturer	Nonin Medical Inc 9843	Nonin Medical Inc 9847	Nonin Medical Inc Avant 2120	Nonin Medical Inc Avant 9600
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone	Stand-alone	Stand-alone	Stand-alone
MOUNTING OPTIONS	Pole, wall	Pole, wall	Pole	Pole
DISPLAYS	CO2, SpO2, pulse rate	CO2, SpO2, pulse rate	SpO2, NIBP, pulse rate, pulse quality, pulse strength, sensor indicator, systolic, diastolic, MAP	SpO2, pulse rate, pulse quality, pulse strength, sensor indicator, alarm settings, AC power indicator
Type	LED	LED	LED	LED
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2 (no motion); ±3 (motion, low-perfusion)	70-100 ±2	70-100 ±2 (no motion), ±3 (motion, low-perfusion)	70-100 ±2 (no motion), ±3 (motion, low-perfusion)
PULSE RATE, bpm	18-321	18-321	18-300	18-300
Accuracy	18-300 ±3 digits (no motion), 40-240 ±3 digits (low-perfusion), 40-240 ±5 digits (motion)	18-300 ±3 digits (no motion), 40 ±3 digits (low-perfusion), 40-240 ±5 digits (motion)	40-240 ±3 digits (no motion), 40-240 ±3 digits (low-perfusion), 40-240 ±5 digits (motion)	18-300 ±3 digits (no motion), 60-240 ±3 digits (low-perfusion), 60-240 ±5 digits (motion)
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Tricolor LED	Tricolor LED	Tricolor bar graph	Tricolor bar graph
RESPONSE TIME, sec	1.5	1.5	1.5	1.5
ALARMS				
Audible and visual	NA	No breath, high/low SpO2 and pulse, low perfusion, inadequate signal, no signal data, low/critical battery, sensor fault, system fault	High/low SpO2 and pulse, low-perfusion, sensor fault, self-test, low battery	High/low SpO2 and pulse, low-perfusion, sensor fault, self-test, low battery
Visual only	Pulse quality, sensor fault, inadequate signal, low battery	NA	High/low SpO2 and pulse rate, pulse-quality/low-perfusion, alarm silence, battery, sensor fault	High/low SpO2 and pulse rate, pulse-quality/low-perfusion, alarm silence, battery, sensor fault
ALARM OVERRIDE	No	Yes	Yes	Yes
Reactivation method	NA	Automatic after 2 min or manual	Automatic after 2 min or manual	Automatic after 2 min or manual
Volume control	NA	Yes	Yes	Yes
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Repositionable comfort adhesive wrap	Repositionable comfort adhesive wrap	Repositionable comfort adhesive wrap	Repositionable comfort adhesive wrap
Reusable	Finger-clip, soft, flex, forehead, ear, CO2	Finger-clip, soft, flex, forehead, ear, CO2	Finger-clip, soft, flex, forehead, ear	Finger-clip, soft, flex, forehead, ear
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	1 (3.3), 2 (6.6), 3 (9.8)	1 (3.3), 2 (6.6), 3 (9.8)	1 (3.3), 2 (6.6), 3 (10)	1 (3.3), 2 (6.6), 3 (10)
DATA MANAGEMENT	Yes	Yes	Yes	Yes
Data stored	SpO2, pulse rate, pulse quality	SpO2, pulse rate, pulse quality	SpO2 and pulse rate, current time/date	SpO2 and pulse rate, current time/date
Data storage, hr	24	24	33.5 continuous, nonvolatile	115 continuous, nonvolatile

Manufacturer	Nonin Medical Inc 9843	Nonin Medical Inc 9847	Nonin Medical Inc Avant 2120	Nonin Medical Inc Avant 9600
External output	USB nVISION software compatible	USB nVISION software compatible	Nurse call, RS232, optional analog; nVISION software compatible	Nurse call, RS232, optional analog; nVISION software compatible
PRINTER/RECORDER	No	No	Optional	Optional
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	Battery only	Battery only	110/240	110/240
BATTERY TYPE (NUMBER)	AA (6)	AA (6)	Ni-MH or VDC AC adapter	Ni-MH (6)
Life, hr	90, 20 with CO2 detector	90, 20 with CO2 detector	5	12
Rechargeable	Optional	Optional	Yes	Yes
Recharge time, hr	Not specified	Not specified	4	4
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	15.2 x 7.6 x 2.5 (6 x 3 x 1)	15.2 x 7.6 x 2.5 (6 x 3 x 1)	18.4 x 14 x 11.4 (7.3 x 5.4 x 4.5)	18.4 x 14 x 11.4 (7.3 x 5 x 4.5)
WEIGHT, g (oz)	310 (11)	310 (11)	1,300 (45.8)	1,000 (35.3)
PURCHASE INFORMATION				
List price	$1,434<1>	$1,554<1>	$1,900<1>	$1,225<1>
Warranty	3 years	3 years	3 years, pulse oximeter; 2 years, NIBP	3 years
Delivery time, ARO	Not specified	Not specified	From stock	From stock
Year first sold	1999	1999	2002	2002
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	24-hr memory; serial to USB adapter.	24-hr memory; serial to USB adapter.	Patient security mode with locked keys and settings; variable volume and alarm settings; latched/unlatched alarms; 115-hr memory; adjustable LEDs; nurse call; Nonin's PureSAT signal processing technology; accessories include carrying case, pole clamp, and rolling stands; includes NIBP featuring oscillometric measurement method for fast, motion tolerant readings.	Patient security mode with locked keys and settings; variable volume and alarm settings; latched/unlatched alarms; 115-hr memory; adjustable LEDs; nurse call; Nonin's PureSAT signal processing technology; accessories include carrying case, pole clamp, and rolling stands.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	January 2016	January 2016	January 2016	January 2016
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Replacement probe $107-210.	<1>Replacement probe $107-210.	<1>Replacement probe $107-210; pricing information derived from ECRI Institute's PricePaid database.	<1>Replacement probe $107-210; pricing information derived from ECRI Institute's PricePaid database.

Manufacturer	Nonin Medical Inc Avant 9700	Nonin Medical Inc LifeSense	Nonin Medical Inc NoninConnect Elite 3240	Nonin Medical Inc ONYX 9500 Fingertip
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes (Medair)	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone	Stand-alone	All-in-one	All-in-one
MOUNTING OPTIONS	Pole	Pole	NA	NA
DISPLAYS	SpO2, pulse rate, color plethysmographic waveform, 24-hr trending, patient histogram, pulse quality, pulse strength, sensor indicator, alarm settings	SpO2, pulse rate, pulse quality, pulse strength, sensor indicator	SpO2, pulse rate, pulse quality	SpO2, pulse rate, pulse quality
Type	LCD and LED	LCD	LED	LED
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2 (no motion, ±3 (motion, low-perfusion)	70-100 ±2 (no motion)	70-100 ±2 (no motion, low-perfusion)	70-100 ±2 (no motion, low-perfusion)
PULSE RATE, bpm	18-300	18-255	18-321	18-321
Accuracy	18-300 ±3 digits (no motion), 60-240 ±3 digits (low-perfusion), 60-240 ±5 digits (motion)	18-255 ±3 digits (no motion), 40-240 ±3 digits (low-perfusion)	20-250 ±3 digits, 40-240 ±3 digits (no motion, low-perfusion)	20-250 ±3 digits, 40-240 ±3 digits (no motion, low-perfusion)
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Tricolor bar graph	Plethysmograph waveform	Tricolor pulse quality LED	Tricolor pulse quality LED
RESPONSE TIME, sec	1.5	1.5	1.5	1.5
ALARMS				
Audible and visual	High/low SpO2 and pulse, pulse quality, low-perfusion, alarm silence, battery, sensor fault	High/low SpO2 and pulse, sensor fault, self-test, low battery	No	No
Visual only	High/low SpO2 and pulse rate, pulse-quality/low-perfusion, alarm silence, battery, sensor fault	High/low SpO2 and pulse rate, pulse-quality/low-perfusion, alarm silence, battery, sensor fault	Pulse quality, low battery, finger removal	Pulse quality, low battery, finger removal
ALARM OVERRIDE	Yes	Yes	No	No
Reactivation method	Automatic after 2 min or manual	Automatic after 2 min or manual	NA	NA
Volume control	Yes	No	NA	NA
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Repositionable comfort adhesive wrap	Repositionable comfort adhesive wrap	NA	NA
Reusable	Finger-clip, soft, flex, forehead, ear	Finger-clip, soft, flex, forehead, ear	Finger	Finger
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric	Adult, pediatric
Cable length, m (ft)	1 (3.3), 2 (6.6), 3 (10)	1 (3.3), 2 (6.6), 3 (10)	NA	NA
DATA MANAGEMENT	Yes	Optional TrendSense memory module	SpO2, pulse rate communicated to free App	No
Data stored	SpO2 and pulse rate, current time/date	SpO2, HR, ETCO2, respiration	NA	NA
Data storage, hr	115 continuous, nonvolatile	72	Memory storage provides up to 20 single point measurements	NA

Manufacturer	Nonin Medical Inc Avant 9700	Nonin Medical Inc LifeSense	Nonin Medical Inc NoninConnect Elite 3240	Nonin Medical Inc ONYX 9500 Fingertip
External output	Nurse call, RS232, optional analog; nVISION software compatible	RS232 and optional analog output	Bluetooth LE	No
PRINTER/RECORDER	Optional	No	No	No
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	110/240	110/240	Battery only	Battery only
BATTERY TYPE (NUMBER)	Ni-MH (6)	Lithium-ion	AAA alkaline (2)	AAA alkaline (2)
Life, hr	8-12	8	2,200 spot-checks	18 or 1,600 spot-checks
Rechargeable	Yes	Yes	No	No
Recharge time, hr	4	17	NA	NA
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	18.4 x 14 x 11.4 (7.3 x 5.5 x 4.5)	20 x 13.5 x 5 (7.9 x 5.3 x 2)	6.9 x 3.1 x 4.6 (2.7 x 1.2 x 1.8)	5.7 x 3.3 x 3.3 (2.2 x 1.3 x 1.3)
WEIGHT, g (oz)	1,100 (38.8)	800 (28.2)	63 (2.2)	60 (2.1)
PURCHASE INFORMATION				
List price	$1,995<1>	$2,500<1>	$495	$325<1>
Warranty	3 years	3 years, monitor; 1 year, touchpanel display, battery pack, and battery charger	2 years	2 years
Delivery time, ARO	From stock	From stock	Not specified	Not specified
Year first sold	2003	2007	2013	1995
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	Same as Avant 9600 plus 16-color LCD with color waveform; waveform color changes with signal; color trend graphs with chart gridlines; print-on-demand feature; adjustable LEDs operate independent of LCD.	Variable alarm settings; LCD screen; Nonin's PureSAT signal processing technology; accessories include carrying case, pole clamp, and rubber bumper.	Intended for spot-checking or attended-care monitoring of adult or pediatric patients with 0.3- to 1-inch finger thicknesses; SmartPoint algorithm automatically determines when a high quality measurement is ready to be wirelessly transmitted via Bluetooth LE.	Intended for spot-checking or attended-care monitoring of adult or pediatric patients with 0.3- to 1-inch finger thicknesses.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	January 2016	January 2016	January 2016	January 2016
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Replacement probe $107-210; pricing information derived from ECRI Institute's PricePaid database.	<1>Replacement probe $107-210; pricing information derived from ECRI Institute's PricePaid database.		<1>Pricing information derived from ECRI Institute's PricePaid database.

Manufacturer	Nonin Medical Inc ONYX II 9550 Fingertip	Nonin Medical Inc ONYX II 9560 Wireless Fingertip	Nonin Medical Inc Onyx Vantage 9590	Nonin Medical Inc WristOx2 Model 3150
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	All-in-one	All-in-one	Stand-alone	Stand-alone
MOUNTING OPTIONS	NA	NA	NA	No
DISPLAYS	SpO2, pulse rate, pulse quality	SpO2, pulse rate, pulse quality	SpO2, pulse rate, pulse quality	SpO2, pulse rate, perfusion amplitude
Type	LED	LED	LED	LCD
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2 (no motion, low-perfusion)	70-100 ±2 (no motion, low-perfusion)	70-100 ±2	70-100 ±2
PULSE RATE, bpm	18-321	18-321	18-321	18-321
Accuracy	20-250 ±3, 40-240 ±3 digits (no motion, low-perfusion)	20-250 ±3, 40-240 ±3 digits (no motion, low-perfusion)	20-250 ±3, 40-240 ±3 (low perfusion)	±3%
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Tricolor pulse quality LED	Tricolor pulse quality LED	Tricolor LED	Pulse quality bar graph
RESPONSE TIME, sec	1.5	1.5	1.5	1.5
ALARMS				
Audible and visual	No	No	No	NA
Visual only	Pulse quality, low battery, finger removal	Pulse quality, low battery, finger removal	Pulse quality, low battery, finger removal	Pulse quality, battery gauge, finger removal
ALARM OVERRIDE	No	No	No	NA
Reactivation method	NA	NA	NA	NA
Volume control	NA	NA	NA	NA
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	NA	NA	NA	Repositionable comfort adhesive wrap
Reusable	Finger	Finger	Finger	Finger-clip, soft, flex, forehead, ear
Patient range	Adult, pediatric	Adult, pediatric	Adult, pediatric, infant	Adult, pediatric, infant, neonate
Cable length, m (ft)	NA	NA	NA	0.3 (1), 1 (3.3), 2 (6.6), 3 (10)
DATA MANAGEMENT	No	No	No	Yes
Data stored	NA	SpO2, pulse rate	No	SpO2, pulse rate, pulse quality
Data storage, hr	NA	Memory storage provides ≤20 single point measurements	NA	1,080

Manufacturer	Nonin Medical Inc ONYX II 9550 Fingertip	Nonin Medical Inc ONYX II 9560 Wireless Fingertip	Nonin Medical Inc Onyx Vantage 9590	Nonin Medical Inc WristOx2 Model 3150
External output	No	Bluetooth Serial Port Profile	No	USB nVISION software compatible
PRINTER/RECORDER	No	No	No	No
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	Battery only	Battery only	Battery only	Battery only
BATTERY TYPE (NUMBER)	AAA alkaline (2)	AAA alkaline (2)	AAA (2)	AAA (2)
Life, hr	36, or 6,000 spot-checks	36, or 6,000 spot-checks	36, or 6,000 spot-checks	24/48
Rechargeable	No	No	No	No
Recharge time, hr	NA	NA	NA	NA
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	5.7 x 3.3 x 3.3 (2.2 x 1.3 x 1.3)	6.4 x 3.2 x 3.8 (2.5 x 1.3 x 1.5)	3.2 x 3.3 x 5.5 (1.2 x 1.3 x 2.2)	5.6 x 7.4 x 2 (2.2 x 2.9 x 0.79)
WEIGHT, g (oz)	60 (2.1)	0.06 (0.13)	57 (2)	71 (2.5)
PURCHASE INFORMATION				
List price	$450<1>	$495<1>	$225	$725<1>
Warranty	2 years	2 years	4 years	3 years
Delivery time, ARO	Not specified	Not specified	Not specified	Not specified
Year first sold	2005	2008	2008	2010
Fiscal year	January to December	January to December	January to December	January to December
OTHER SPECIFICATIONS	Intended for spot-checking or attended-care monitoring of adult or pediatric patients with 0.3- to 1-inch finger thicknesses. U.S. Air Force and U.S. Army aeromedical certification. Meets requirements of CSA and NRTL/C.	Spot-checking or attended-care monitoring of adult or pediatric patients with 0.3- to 1-in finger thicknesses; SmartPoint algorithm automatically determines when a high quality measurement is ready to be wirelessly transmitted via Bluetooth Classic.	Spot-checking or attended-care monitoring of adult or pediatric patients with 0.3 to 1-inch finger thickness.	1,080 hr of nonvolatile memory; programmable start and stop times; ability to "blank out" SpO2 and pulse rate display for anxious patients; ability to set data-storage rate of 1, 2, or 4 sec; Bluetooth 2.0.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	January 2016	January 2016	January 2016	January 2016
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Pricing information derived from ECRI Institute's PricePaid database.	<1>List price current as of January 2011.		<1>Replacement probe $107-210; pricing information current as of January 2011.

Manufacturer	Philips Respironics Inc 920M	Philips Respironics Inc 920MP	Philips Respironics Inc WristOx2	Progetti srl PG M800
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	No
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Stand-alone	Stand-alone	Stand-alone	Handheld
MOUNTING OPTIONS	Pole, wall	Charger stand	No	Optional desk base
DISPLAYS	SpO2, pulse rate	SpO2, pulse rate, pulse quality	SpO2, pulse rate, perfusion amplitude	Digital SpO2, pulse rate, pleth bar and SpO2 waveform; optional ECG II lead
Type	LED	LED	LCD	2.4" OLED 320 x 240 pixels, gravity sensor to change direction
SpO2 RANGE, %	0-100	0-100	0-100	0-100
Accuracy, %	70-100 ±2	70-100 ±2 (no motion); ±3 (motion, low-perfusion)	70-100 ±2	70-100 ±2
PULSE RATE, bpm	18-321	18-321	18-321	25-250
Accuracy	±3 digits	18-300 ±3 digits (no motion), 40-240 ±3 digits (low-perfusion), 40-240 ±5 digits (motion)	±3%	±2 or ±1 bpm, whichever is greater
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Tricolor LED	Tricolor pulse quality LED	Pulse quality bar graph	Signal strength indicator
RESPONSE TIME, sec	1.5	1.5	1.5	<10
ALARMS				
Audible and visual	NA	NA	NA	Audible and visual alarms, high/low perfusion level and heart rate
Visual only	Pulse quality, sensor fault, inadequate signal, low battery	Pulse quality, sensor fault, inadequate signal, low battery	Pulse quality, battery gauge, finger removal	Not specified
ALARM OVERRIDE	No	No	NA	Yes
Reactivation method	NA	NA	NA	Automatic
Volume control	NA	NA	NA	Multi-level volume
SELF-TEST MODE	Yes	Yes	Yes	NA
PROBE TYPES				
Disposable	Repositionable comfort adhesive wrap	Repositionable comfort adhesive wrap	Repositionable comfort adhesive wrap	Optional
Reusable	Finger-clip, soft, flex, forehead, ear	Finger-clip, soft, flex, forehead, ear	Finger-clip, soft, flex, forehead, ear	Finger
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, neonate
Cable length, m (ft)	1 (3.3), 2 (6.6), 3 (9.8)	1 (3.3), 2 (6.6), 3 (10)	0.3 (1), 1 (3.3), 2 (6.6), 3 (10)	1.5 (4.9)
DATA MANAGEMENT	Yes	Yes	Yes	Yes; optional by Infrared and PC software
Data stored	SpO2, pulse rate, pulse quality	SpO2, pulse rate, pulse quality	SpO2, pulse rate, pulse quality	SpO2, pulse rate
Data storage, hr	72	72	1,080	≤60,000 measurements

Manufacturer	Philips Respironics Inc 920M	Philips Respironics Inc 920MP	Philips Respironics Inc WristOx2	Progetti srl PG M800
External output	USB nVISION software compatible	RS232; USB adapter (Continua compliant option); nVISION software compatible	USB nVISION compatible; nonvolatile memory with nVISION 6.3 software	Infrared
PRINTER/RECORDER	Yes	No	No	NA
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	Battery only	110/240 with optional charging stand	Battery only	100-200, 50/60 Hz
BATTERY TYPE (NUMBER)	AA (6)	AA alkaline (4) or Ni-MH rechargeable (4)	AAA (2)	3 AAA alkaline batteries; optional lithium batteries
Life, hr	≤100 display brightness, 160 normal brightness	80	24/48	16 for normal measurement
Rechargeable	Optional	Optional	No	Yes
Recharge time, hr	Not specified	3	Not specified	<8
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	15 x 8 x 2.5 (6 x 3 x 1)	3.2 x 7 x 13.8 (1.3 x 2.8 x 5.4)	5.6 x 7.4 x 2.0 (2.2 x 2.9 x 0.79)	12.3 x 5.8 x 2.8 (4.8 x 2.3 x 1.1)
WEIGHT, g (oz)	280 (10)	210 (7.4)	71 (2.5)	<200 (<7.1)
PURCHASE INFORMATION				
List price	$675<1>	$565<1>	$725<1>	$681 (€600)<1>
Warranty	3 years	3 years	3 years	1 year
Delivery time, ARO	Not specified	Not specified	Not specified	5-15 days
Year first sold	1990	2000	2010	2012
Fiscal year	January to December	January to December	January to December	Not specified
OTHER SPECIFICATIONS	18-hr memory; serial to USB adapter.	72-hr memory; accessories include PalmSAT charger stand, case, and PC interface cable.	Programmable start and stop times; ability to "blank out" SpO2 and pulse rate display for anxious patients; ability to set data-storage rate of 1, 2, or 4 sec; Bluetooth 2.0.	ECG optional/SpO2.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	January 2016	January 2016	January 2016	October 2015
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Replacement probe $107-210.	<1>Replacement probe $107-210; pricing information derived from ECRI Institute's PricePaid database.	<1>Replacement probe $107-210; pricing information current as of January 2011.	<1>Replacement probe $170 (€150).

Manufacturer	RGB Medical Devices SA MICROX	RGB Medical Devices SA MICROX BT	Smiths Medical Autocorr	Smiths Medical BCI 3180
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	No	No	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Handheld	Handheld	Not specified	Stand-alone
MOUNTING OPTIONS	None	None	Not specified	Not specified
DISPLAYS	SpO2, pulse rate, high/low alarm limits	SpO2, pulse rate, high/low alarm limits, plethysmogram on computer screen	SpO2, pulse rate, quantitative pulse-strength bar, low battery, alarm silence, probe, search, artifact	SpO2, pulse rate, plethysmogram
Type	LED	LED	LED	Backlit LCD
SpO2 RANGE, %	1-100	1-100	0-100	0-100
Accuracy, %	70-100 ±2	70-100 ±2	70-100 ±2, 50-69 ±3	70-100 ±2 adult, 70-100 ±3 neonate
PULSE RATE, bpm	30-250	30-250	Not specified	Not specified
Accuracy	3%	3%	Not specified	Not specified
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Yes	Yes	Not specified	Not specified
RESPONSE TIME, sec	2	2	8, 16	8
ALARMS				
Audible and visual	High/low SpO2, sensor off, ambient-light interference, low signal strength, insufficient signal, noisy signal	High/low SpO2, sensor off, ambient-light interference, low signal strength, insufficient signal, noisy signal	High/low SpO2 and pulse rate, low battery, probe, sensor off, search, artifact	Alarm status, lost signal
Visual only	High/low SpO2, sensor off, ambient-light interference, low/insufficient signal, noisy signal	High/low SpO2, sensor off, ambient-light interference, low/insufficient signal, noisy signal	Low battery, probe, alarm silence, search, artifact, power	Low battery, lost signal
ALARM OVERRIDE	Audible and visual	Audible and visual	Yes	Not specified
Reactivation method	Manual	Manual	Automatic after 2 min or manual	Not specified
Volume control	Pulse and alarm (pulse pitch modulation with SpO2 value)	Pulse and alarm (pulse pitch modulation with SpO2 value)	Yes	No
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Finger	Finger	Yes	Finger
Reusable	Finger, multisite Y-sensor, ear clip	Finger, multisite Y-sensor, ear clip	Yes	Finger, multisite Y-sensor, ear
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	3 (10)	3 (10)	1.5 (5)	0.51 (1.6), 1.2 (4)
DATA MANAGEMENT	Yes	Yes	Not specified	Not specified
Data stored	% saturation, pulse rate	% saturation, pulse rate	Yes	Not specified
Data storage, hr	200	200	Not specified	Not specified

Manufacturer	RGB Medical Devices SA MICROX	RGB Medical Devices SA MICROX BT	Smiths Medical Autocorr	Smiths Medical BCI 3180
External output	Bluetooth	Bluetooth	RS232	RS232
PRINTER/RECORDER	No	No	Optional	Optional
MRI CONDITIONAL	No	No	No	Not specified
LINE POWER, VAC	110/240, adapter to 5 V 1 A	110/240, adapter to 5 V 1 A	105-125, 100, 230	90-125, 200-240
BATTERY TYPE (NUMBER)	AA (2)	AA (2)	Ni-MH	Lead-acid (6)
Life, hr	24, continuous	24, continuous	4.5	4 with continuous use
Rechargeable	Disposable or rechargeable (recharge external)	Disposable or rechargeable (recharge external)	Not specified	No
Recharge time, hr	Not specified	See manufacturer's instructions	Not specified	NA
Low-battery notice	Yes	Yes	Yes	Yes
H x W x D, cm (in)	14.5 x 6 x 2.8 (5.7 x 2.4 x 1.1)	14.5 x 6 x 2.8 (5.7 x 2.4 x 1.1)	21.6 x 8.2 x 14 (8.5 x 3.2 x 5.5)	16.5 x 20.3 x 12.7 (6.5 x 8 x 5)
WEIGHT, g (oz)	210 (7.4)	210 (7.4)	850 (30)	2,000 (70.5)
PURCHASE INFORMATION				
List price	$450<1>	$500<1>	$1,295<1>	Not specified
Warranty	1 year	1 year	2 years	2 years
Delivery time, ARO	2 weeks	2 weeks	Not specified	Not specified
Year first sold	2004	2004	1996	Not specified
Fiscal year	January to December	January to December	August to July	August to July
OTHER SPECIFICATIONS	None specified.	Connection to PC or laptop using Bluetooth wireless protocol to display plethysmogram and trend data.	Clinical, home, and sleep modes standard; data log or trend printout of stored information when used with a printer or computer; uses digital signal processing to monitor SpO2, pulse strength, and pulse rate. Meets requirements of CSA, IEC, TUV, and UL.	None specified.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	February 2016	February 2016	January 2011	January 2011
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Replacement probe $250.	<1>Replacement probe $250.	<1>Replacement probe $150.	

Manufacturer	Smiths Medical BCI 3301	Smiths Medical BCI SPECTRO2 10	Smiths Medical BCI SPECTRO2 20	Smiths Medical BCI SPECTRO2 30
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Not specified	Both	Both	Both
MOUNTING OPTIONS	Not specified	Docking station, IV pole	Docking station, IV pole	Docking station, IV pole
DISPLAYS	SpO2, pulse rate, quantitative pulse-strength bar	SpO2, pulse rate, quantitative pulse-strength bar	SpO2, pulse rate, quantitative pulse-strength bar	SpO2, pulse rate, quantitative pulse-strength bar
Type	LED	LED	LED	LED
SpO2 RANGE, %	0-99	0-99 (1% increments)	0-100 (1% increments), display maximum 99%	0-100 (1% increments), display maximum 99%
Accuracy, %	70-99 ±2, 50-69 ±3	70-99 ±2	70-100 ±2, 70-100 ±3 neonate	70-100 ±2, 70-100 ±3 neonate
PULSE RATE, bpm	Not specified	30-254	20-300	20-300
Accuracy	Not specified	±2	±2	±2
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Not specified	SpO2, pulse rate, low-perfusion accuracy	SpO2, pulse rate, low-perfusion accuracy	SpO2, pulse rate, low-perfusion accuracy
RESPONSE TIME, sec	8	Not specified	Not specified	Not specified
ALARMS				
Audible and visual	No	No	No	High/low SpO2, pulse rate
Visual only	Low battery	Not specified	Not specified	Not specified
ALARM OVERRIDE	No	No	No	Yes
Reactivation method	NA	NA	Not specified	Automatic
Volume control	NA	NA	Not specified	Yes
SELF-TEST MODE	Yes	Yes	Yes	Yes
PROBE TYPES				
Disposable	Finger	Finger	Finger	Finger
Reusable	Finger, multisite Y-sensor, ear	Finger, multisite Y-sensor, ear	Finger, multisite Y-sensor, ear	Finger, multisite Y-sensor, ear
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	1.5 (5)	15.2 (6), 38.1 (15), 50.8 (20), 91.4 (36)	15.2 (6), 38.1 (15), 50.8 (20), 91.4 (36)	15.2 (6), 38.1 (15), 50.8 (20), 91.4 (36)
DATA MANAGEMENT	Not specified	Not specified	Not specified	Not specified
Data stored	≤99 patient records	≤99 patient records	≤99 patient records	≤99 patient records
Data storage, hr	Not specified	144 at 4-second intervals	144 at 4-second intervals	72 at 2-second intervals

Manufacturer	Smiths Medical BCI 3301	Smiths Medical BCI SPECTRO2 10	Smiths Medical BCI SPECTRO2 20	Smiths Medical BCI SPECTRO2 30
External output	RS232	Oximeter Sensor DB-9 Connector, custom interconnect allowing connection from either USB communications, AC Mains Power input, or dock connection with or without printer	Oximeter Sensor DB-9 Connector, custom interconnect allowing connection from either USB communications, AC Mains Power input, or dock connection with or without printer	Oximeter Sensor DB-9 Connector, custom interconnect allowing connection from either USB communications, AC Mains Power input, or dock connection with or without printer
PRINTER/RECORDER	Optional	Optional	Optional	Optional
MRI CONDITIONAL	No	Not specified	Not specified	Not specified
LINE POWER, VAC	Battery only	100-240	100-240	100-240
BATTERY TYPE (NUMBER)	C (3)	Alkaline or custom 2-cell lithium-ion rechargeable battery pack	Alkaline or custom 2-cell lithium-ion rechargeable battery pack	Alkaline or custom 2-cell lithium-ion rechargeable battery pack
Life, hr	24	32	26	17
Rechargeable	Not specified	Yes	Yes	Yes
Recharge time, hr	Not specified	3	3	3
Low-battery notice	Yes	Not specified	Not specified	Not specified
H x W x D, cm (in)	16 x 8.3 x 3.2 (6.3 x 3.3 x 1.3)	15.5 x 8.4 x 4.3 (6.1 x 3.3 x 1.7)	15.5 x 8.4 x 4.3 (6.1 x 3.3 x 1.7)	15.5 x 8.4 x 4.3 (6.1 x 3.3 x 1.7)
WEIGHT, g (oz)	470 (16.6)	340 (12) with batteries	340 (12) with batteries	340 (12) with batteries
PURCHASE INFORMATION				
List price	$595<1>	Not specified	Not specified	Not specified
Warranty	2 years	3 years	3 years	3 years
Delivery time, ARO	Not specified	Not specified	Not specified	Not specified
Year first sold	1992	2009	2009	2010
Fiscal year	August to July	August to July	August to July	August to July
OTHER SPECIFICATIONS	≤1,500 spot checks for life of batteries; PC compatible. Meets requirements of CSA, TUV, and UL.	None specified.	None specified.	None specified.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	January 2011	January 2011	January 2011	January 2011
Supplier Footnotes				
Model Footnotes				
Data Footnotes	<1>Replacement probe $150.			

Manufacturer	Smiths Medical Digit	Smiths Medical FingerPrint	Smiths Medical MiniCorr	Spacelabs Healthcare Inc An OSI Systems Co 91496-M Ultraview SL Command Module
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	Yes	Yes
CE MARK (MDD)	Yes	Yes	Yes	Yes
STAND-ALONE/ MODULAR	Not specified	Not specified	Not specified	Modular
MOUNTING OPTIONS	Not specified	Not specified	Not specified	Not specified
DISPLAYS	SpO2, pulse rate, pulse strength	SpO2, pulse rate, quantitative pulse-strength bar	SpO2, pulse rate, quantitative pulse-strength bar, low battery, audio disabled, sensor, artifact, power	SpO2, pulse rate, plethysmogram, high/low alarm limits, Sensorwatch signal-strength indicator
Type	LED	LED	LED	LCD
SpO2 RANGE, %	0-99	0-99	0-99	1-100
Accuracy, %	70-99 ±2	70-99 ±2	70-99 ±2, 50-69 ±3	70-100 ±2
PULSE RATE, bpm	Not specified	Not specified	Not specified	25-240
Accuracy	Not specified	Not specified	Not specified	Not specified
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Not specified	Not specified	Not specified	Yes
RESPONSE TIME, sec	Not specified	8	Not specified	3 (numeric update)
ALARMS				
Audible and visual	No	No	High/low SpO2 and pulse rate	High/low SpO2, sensor off, ambient-light interference, low signal strength, insufficient signal, noisy signal
Visual only	Not specified	Low battery	Low battery, audio disabled, sensor off, artifact, power off	High/low SpO2, sensor off, ambient-light interference, low signal strength, insufficient signal, noisy signal
ALARM OVERRIDE	No	No	Yes	Pause audio, pause alarm presentation
Reactivation method	NA	NA	Automatic	Manual/auto recovery
Volume control	NA	NA	Yes	Yes
SELF-TEST MODE	NA	Yes	Not specified	Yes, power-up diagnostics
PROBE TYPES				
Disposable	Finger	Finger	Yes	Masimo LNCS or LNOP (various types)
Reusable	Finger, multisite Y-sensor, ear	Finger, multisite Y-sensor, ear	Yes	Masimo LNCS or LNOP (various types)
Patient range	Adult, pediatric, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate
Cable length, m (ft)	.51 (1.6), 1.2 (4)	1.5 (5)	1.2 (4)	LNCS 3.1 (10), LNOP 2.4 (8)
DATA MANAGEMENT	Not specified	Not specified	Not specified	Yes
Data stored	Not specified	≤99 patient records	Yes	% saturation, pulse rate, waveform, index (WFI)
Data storage, hr	Not specified	Not specified	Not specified	24 or 96

Manufacturer	Smiths Medical Digit	Smiths Medical FingerPrint	Smiths Medical MiniCorr	Spacelabs Healthcare Inc An OSI Systems Co 91496-M Ultraview SL Command Module
External output	No	RS232C	RS232C, infrared link	No
PRINTER/RECORDER	No	Yes	Optional	Via monitor/network
MRI CONDITIONAL	No	No	Not specified	No
LINE POWER, VAC	Battery only	Battery only	105-125, 100, 230	110/240 (for host monitor)
BATTERY TYPE (NUMBER)	AAA alkaline (2)	AA alkaline or Ni-Cd (4)	Alkaline	None
Life, hr	Not specified	24 no printing, 14 continuous printing	24	NA
Rechargeable	Not specified	Not specified	Not specified	NA
Recharge time, hr	Not specified	Not specified	Not specified	NA
Low-battery notice	Not specified	Yes	Yes	NA
H x W x D, cm (in)	5.7 x 4.3 x 3.8 (2.3 x 1.7 x 1.5)	17.2 x 7.6 x 3.8 (6.8 x 3 x 1.5)	16.7 x 7 x 3.6 (6.6 x 2.8 x 1.4)	11.3 x 5.7 x 18 (4.5 x 2.2 x 7.1)
WEIGHT, g (oz)	90 (3.2)	1,100 (38.8)	500 (17.6) with batteries	800 (28.2)
PURCHASE INFORMATION				
List price	$395	$695<1>	$895<1>	Not specified
Warranty	2 years	2 years	2 years	1 year
Delivery time, ARO	Not specified	Not specified	Not specified	Not specified
Year first sold	2002	1998	1999	2005
Fiscal year	August to July	August to July	August to July	July to June
OTHER SPECIFICATIONS	None specified.	PC compatible. Meets requirements of CSA, TUV, and UL.	Serial autocorrelation technology; interpretive sleep software compatible; 3 operating modes (sleep, home, clinician).	Compatible with all Spacelabs monitors. Meets requirements of UL 2601-1 for electrical safety. CSA approved.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	January 2011	January 2011	January 2011	October 2012
Supplier Footnotes				
Model Footnotes				
Data Footnotes		<1>Replacement probe $150.	<1>Replacement probe $150.	

Manufacturer	Spacelabs Healthcare Inc An OSI Systems Co 91496-N Ultraview SL Command Module	Spacelabs Healthcare Inc An OSI Systems Co 91496-U Ultraview SL Command Module	Viamed Ltd VM-2101	Viamed Ltd VM-2103
WHERE MARKETED	Worldwide	Worldwide	Worldwide	Worldwide
FDA CLEARANCE	Yes	Yes	No	No
CE MARK (MDD)	Yes	Yes	CE0086	CE0086
STAND-ALONE/ MODULAR	Modular	Modular	Stand-alone	Stand-alone
MOUNTING OPTIONS	Not specified	Not specified	None	None
DISPLAYS	SpO2, pulse rate, plethysmogram, high/low alarm limits, Sensorwatch signal-strength indicator, SatSeconds	SpO2, pulse rate, plethysmogram, high/low alarm limits, Sensorwatch signal-strength indicator	Oxygen saturation, pulse rate, plethysmogram, pulse indicator, bar graph, pulse signal quality, signal strength, battery status	Oxygen saturation, pulse rate, plethysmogram, pulse indicator, bar graph, pulse signal quality, signal strength, battery status
Type	LCD	LCD	OLED	OLED
SpO2 RANGE, %	1-100	30-100	0-100	0-100
Accuracy, %	70-100 ±2	70-100 ±3	2 ±1.9	2 ±1.9
PULSE RATE, bpm	25-300	30-250	20-300	20-300
Accuracy	Not specified	Not specified	±1 digit (≤ 100 bpm), ±1% (>100 bpm)	±1 digit (≤100 bpm), ±1% (>100 bpm)
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Yes	Yes	Low perfusion technology and signal strength indicator	Low perfusion technology and signal strength indicator
RESPONSE TIME, sec	3 (numeric update)	3 (numeric update)	NA	NA
ALARMS				
Audible and visual	High/low SpO2/PR, sensor off, ambient-light interference, low signal strength, insufficient signal, noisy signal, SatSeconds	High/low SpO2/PR, sensor off, ambient-light interference, low signal strength, insufficient signal, noisy signal	Not specified	Not specified
Visual only	High/low SpO2/PR, sensor off, ambient-light interference, low signal strength, insufficient signal, noisy signal, SatSeconds	High/low SpO2/PR, sensor off, ambient-light interference, low signal strength, insufficient signal, noisy signal	Pulse signal quality, signal strength, battery status, low battery	Pulse signal quality, signal strength, battery status, low battery
ALARM OVERRIDE	Pause audio, pause alarm presentation	Pause audio, pause alarm presentation	No	No
Reactivation method	Manual/auto recovery	Manual/auto recovery	NA	NA
Volume control	Yes	Yes	NA	NA
SELF-TEST MODE	Yes, power-up diagnostics	Yes, power-up diagnostics	Not specified	NA
PROBE TYPES				
Disposable	Nellcor OxiMax and OxiCliq (various types)	Spacelabs TruLink finger or multi-site, Masimo, Nellcor	Optional	Optional
Reusable	Nellcor OxiMax (various types)	Spacelabs TruLink finger or multi-site, Masimo, Nellcor	Finger	Finger
Patient range	Adult, pediatric, infant, neonate	Adult, pediatric, infant, neonate	Adult, pediatric	Adult, pediatric
Cable length, m (ft)	3.1 (10)	3.1 (10)	NA	NA
DATA MANAGEMENT	Yes	Yes	Not specified	NA
Data stored	% saturation, pulse rate, waveform, index (WFI)	% saturation, pulse rate, waveform, index (WFI)	NA	NA
Data storage, hr	24 or 96	24 or 96	NA	NA

Manufacturer	Spacelabs Healthcare Inc An OSI Systems Co 91496-N Ultraview SL Command Module	Spacelabs Healthcare Inc An OSI Systems Co 91496-U Ultraview SL Command Module	Viamed Ltd VM-2101	Viamed Ltd VM-2103
External output	No	No	NA	NA
PRINTER/RECORDER	Yes, function of the monitor/network	Yes, function of the monitor/network	NA	NA
MRI CONDITIONAL	No	No	No	No
LINE POWER, VAC	110/240 (for host monitor)	110/240 (for host monitor)	NA	NA
BATTERY TYPE (NUMBER)	None	None	AAA alkaline (2)	AAA alkaline (2)
Life, hr	NA	NA	24	24
Rechargeable	NA	NA	No	No
Recharge time, hr	NA	NA	NA	NA
Low-battery notice	NA	NA	Yes	Yes
H x W x D, cm (in)	11.3 x 5.7 x 18 (4.5 x 2.2 x 7.1)	11.3 x 5.7 x 18 (4.5 x 2.2 x 7.1)	5.7 x 3.3 x 2.7 (2.2 x 1.3 x 1)	6.2 x 3.8 x 3.5 (2.4 x 1.5 x 1.4)
WEIGHT, g (oz)	800 (28.2)	800 (28.2)	50 (1.8)	63 (2.2)
PURCHASE INFORMATION				
List price	Not specified	Not specified	$183 (£120)	$275 (£180)
Warranty	1 year	1 year	2 years	2 years
Delivery time, ARO	Not specified	Not specified	3 days	3 days
Year first sold	2005	2004	2008	2012
Fiscal year	July to June	July to June	Not specified	Not specified
OTHER SPECIFICATIONS	Compatible with all Spacelabs monitors. Meets requirements of UL 2601-1 for electrical safety. CSA approved.	Compatible with all Spacelabs monitors. Meets requirements of UL 2601-1 for electrical safety. CSA approved.	IPx2.	IPx2.
UMDNS CODE(S)	17148	17148	17148	17148
LAST UPDATED	October 2012	October 2012	October 2015	October 2015

Supplier Footnotes

Model Footnotes

Data Footnotes

Manufacturer	**Viamed Ltd** VM-2105	**Viamed Ltd** VM-2160
WHERE MARKETED	Worldwide	Worldwide, except USA
FDA CLEARANCE	No	No
CE MARK (MDD)	CE0086	CE0086
STAND-ALONE/ MODULAR	Stand-alone	Stand-alone
MOUNTING OPTIONS	None	Rail mount, pole mount, medirail mount, universal
DISPLAYS	Oxygen saturation, pulse rate, plethysmogram, pulse indicator, bar graph, pulse signal quality, signal strength, battery status	Oxygen saturation, pulse rate, plethysmogram, bar graph, short and long term trends, signal quality, pulse amplitude, battery status, alarm silenced, sensor detection, sensor disconnection
Type	OLED	TFT
SpO2 RANGE, %	0-100	0-100
Accuracy, %	1.5 ±1.5	70-100 ±2
PULSE RATE, bpm	20-300	20-300
Accuracy	±1 digit (≤ 100 bpm), ±1% (>100 bpm)	±1 digit (≤100 bpm), ±1% (>100 bpm)
PERFUSION INDEX AND/OR SIGNAL STRENGTH INDICATOR	Low perfusion technology and signal strength indicator	Low perfusion technology and signal strength indicator
RESPONSE TIME, sec	NA	NA
ALARMS		
Audible and visual	Not specified	High/low SpO2, high/low pulse rate, no pulse found, battery low, probe off, no sensor, sensor fault, ambient light
Visual only	Pulse signal quality, signal strength, battery status, low battery	Not specified
ALARM OVERRIDE	No	Yes
Reactivation method	NA	Manual
Volume control	NA	No
SELF-TEST MODE	Not specified	Not specified
PROBE TYPES		
Disposable	Optional	Optional
Reusable	Finger	Finger, wrap, ear
Patient range	Adult, pediatric	Adult, pediatric, infant, neonatal
Cable length, m (ft)	NA	Type dependent; between 0.45-1.2 (1.5-4)
DATA MANAGEMENT	Not specified	Not specified
Data stored	NA	SpO2, pulse rate, alarm limits
Data storage, hr	NA	480

Manufacturer	Viamed Ltd VM-2105	Viamed Ltd VM-2160
External output	NA	USB to PC
PRINTER/RECORDER	NA	NA
MRI CONDITIONAL	No	No
LINE POWER, VAC	NA	NA
BATTERY TYPE (NUMBER)	AAA alkaline batteries (2)	AAA alkaline batteries (3)
Life, hr	24	>48 continuous; ≤5 days in power saving mode (no display)
Rechargeable	No	No
Recharge time, hr	NA	NA
Low-battery notice	Yes	Yes
H x W x D, cm (in)	6.5 x 5 x 3.4 (2.6 x 2 x 1.3)	11.8 x 6 x 2.5 (4.6 x 2.4 x 1)
WEIGHT, g (oz)	49 (1.7)	63 (2.2)
PURCHASE INFORMATION		
List price	$344 (£225)	$528 (£345)<1>
Warranty	2 years	2 years
Delivery time, ARO	3 days	3 days
Year first sold	2009	2007
Fiscal year	Not specified	Not specified
OTHER SPECIFICATIONS	IPx2.	IP32.
UMDNS CODE(S)	17148	17148
LAST UPDATED	October 2015	October 2015
Supplier Footnotes		
Model Footnotes		
Data Footnotes		<1>Replacement silicone adult probe $178 (£272).