

DINAMAP Pro 1000

Vital signs monitor



The simple solution to accurate monitoring.

The DINAMAP® Pro 1000 monitor gives you core vital signs with respirations and 3-lead ECG in one simple yet comprehensive system. It is flexible for use throughout the hospital, from the ED to the GI lab, and is portable for intra-hospital transport wherever you need it.

The Pro 1000 has an easy-to-use design with an intuitive menu structure along with gold standard parameters, such as Marquette EK-Pro® ECG, DINAMAP NIBP and Masimo® SET® SpO₂.

Power Requirements

Powered from the internal battery, AC power, or an external DC power source.

AC Input	120 – 240 V, 50 – 60 Hz, 60 – 120 VA
DC Input	18 – 24 V at 60 VA (from a source conforming to IEC 601-1)
Internal Battery	12 V nickel-metal-hydrate (NiMH)
Fuse (Battery)	10 A, 250 V
Power Cable	16-gauge, detachable, 10 ft (3 meters) in length

Battery

An internal, rechargeable battery pack powers the monitor for greater than 120 minutes at a specified load. The battery typically charges to 90% capacity within 3 hours.

Capacity	7.0 amp-hr (manufacturer's rating)
Battery Life	Greater than 120 minutes using fully charged internal battery (NIBP: 5-min auto cycle with adult cuff. ECG, RESP, SpO ₂ : Active. TEMP: Predictive mode. Printer: Printing 2 waveforms for 1 min every 20 min at 25 mm/sec)
Charge Time	3 hours maximum with the monitor switched off; 4 hours maximum with the monitor switched on



Environmental Specifications

Operating Conditions

Temperature:	+41° F to +104° F (+5° C to +40° C)
Atmospheric Pressure	700 hPa to 1060 hPa
Humidity Range	5% to 95%

Storage Conditions

Temperature	-4.0° F to +122° F (-20° C to +50° C)
Atmospheric Pressure	500 hPa to 1060 hPa
Humidity Range	5% to 95%

Physical Dimensions

Height	37.5 cm (14.75 in)
Depth	24.13 cm (14.5 in)
Width	36.83 cm (14.5 in)
Weight	13 lb (includes battery)

Performance Specifications

ECG

- Leads available, 3-lead configuration: I, II, III, MCL1
- Heart rate resolution: 1 beat/min
- Bandwidth display/recorder: 0.5 to 40 Hz ($\pm 1/-6$ dB), 0.05 to 40 Hz ($\pm 1/-6$ dB), 0.05 to 100 Hz ($\pm 1/-6$ dB)
- Standardizing voltage: 1 mV marker
- Common mode rejection: 1 mV RTI or 10 mm p max displayed noise allowed with 20 Vrms, 50-60 Hz input
- Input impedance: $> 2.5 \text{ M}\Omega$ at 10 Hz
- Pacemaker detection/rejection: Pacer amplitude $\pm 2 \text{ mV}$ to $\pm 700 \text{ mV}$, Pacer width 0.1 ms to 2 ms with under or overshoot of 2 mV
- Tall T wave rejection: 100% at 0.05 to 40 hz or 0.05 to 100 hz

- Lead off sensing current: $< 0.1 \mu\text{A}$ DC signal leads $< 1 \mu\text{A}$ DC driven lead
- Time to alarm: High heart rate $< 10 \text{ s}$ per AAMI EC13 – 1992; low heart rate $< 10 \text{ s}$ per AAMI EC13 – 1992; cardiac standstill $< 10 \text{ s}$ per AAMI EC13 – 1992; tachycardia waveforms $< 10 \text{ s}$ per AAMI EC13 – 1992

NIBP

Method: Oscillometric step deflation, results equivalent to intra-arterial BP measurement

- Modes: Manual, automatic, stat
- Systolic range: 30 to 290 mmHg (adult/ped), 30 to 140 mmHg (neonate)
- MAP range: 20 to 260 mmHg (adult/ped), 20 to 125 mmHg (neonate)
- Diastolic range: 10 to 220 mmHg (adult/ped), 10 to 110 mmHg (neonate)
- Resolution: 1 mmHg
- Accuracy: Meets AAMI/ANSI standard SP10
- Initial cuff inflation pressure: 150 mmHg default; user selectable (adult/ped) 110 mmHg default; user selectable (neonate)
- Maximum determination time: 120 s (adult/ped), 85 s (neonate)
- Over pressure monitor: 300 to 330 mmHg (adult/ped), 150 to 165 mmHg (neonate)
- Hose/Cuff interface clippard: Screw connectors at cuff end
- Pulse rate: When NIBP is the source, HR values are derived from the pulse rate that is determined by the oscillometric technique of measuring blood pressure. The rate source field is labeled NIBP.
- Pulse rate ranges:
Adult: 30 to 200 bpm ($\pm 3.5\%$)
Neonate: 30 to 220 bpm ($\pm 3.5\%$)

HR/Pulse

ECG

- Heart rate accuracy: 30 to 300, ± 3 beats/min or 3% of reading, whichever is greater
- Time to alarm: High heart rate < 10 s per AAMI EC13 – 1992; low heart rate < 10 s per AAMI EC13 – 1992; cardiac standstill < 10 s per AAMI EC13 – 1992; tachycardia waveforms < 10 s per AAMI EC13 – 1992

SpO₂

Nellcor

- Range: 20 - 250 beats/min
- Accuracy and motion tolerance: Without motion, 20 to 250 beats/min ± 3 digits: With motion, normal physiologic range, 55 to 125 beats/min ± 5 digits: Low perfusion, 20 to 250 beats/min ± 3 digits

Masimo

- Range: 25 – 240 beats/min
- Accuracy and motion tolerance: Without motion, 25 to 240 beats/min ± 3 digits: With motion, normal physiologic range, 25 to 240 beats/min ± 5 digits

Noninvasive Blood Pressure

- Range: Adult 30 – 200 beats/min, Neonate 30 – 220 beats/min
- Accuracy: $\pm 3.5\%$
- Alarm Limits: 10 – 250 beats/min

Respirations

ECG-derived respiration rate

- Leads available: I or II
- Range: 6 to 120 breaths/min (adult/ped), 6 to 180 breaths/min (neonate)
- Accuracy: ± 2 breaths/min or $\pm 3\%$ of reading; whichever is greater

- Resolution: 1 breath/min
- Base impedance: 100 to 2000 Ω
- Detection sensitivity: 0.2 Ω
- Bandwidth: 0.1 to 5.0 Hz
- Excitation frequency: 61.5 kHz
- Amplitude: < 300 $\mu\text{A rms}$

Turbo•Temp Temperature

- Scale: °Fahrenheit (F), °Celsius (C)
- Predictive mode range: 96.0° F (35.6° C) to 106.0° F (41.1° C)
- Monitor mode range: 80.0° F (26.7° C) to 108.0° F (43.3° C)
- Accuracy: $\pm 0.2^\circ\text{F}$ ($\pm 0.1^\circ\text{C}$) (when tested in a calibrated liquid bath; meets ASTM E1112, Table 1, in range specified)
- Determination time: Approx. 10 seconds

Use only IVAC probes and P850A probe covers.

Masimo SET SpO₂

- SpO₂ range: 1 to 100%
- Pulse rate: 25 to 240 beats/min
- Perfusion range: 0.02 to 20%
- Saturation without motion: Adult/Ped 70 to 100% ± 2 digits,
- Saturation without motion: 70 to 100% ± 3 digits (neonate), Saturation with motion: 70 to 100% ± 3 digits (adult/ped/neonate)
- Low perfusion: 70 to 100% ± 2 digits, 0 to 69% unspecified
- Pulse rate without motion: 25 to 240 beats/min ± 3 digits
- Pulse rate with motion: Normal physiologic range 25 to 240 beats/min ± 5 digits

Nellcor SpO₂

- SpO₂ range 1 to 100%
- Pulse rate: 20 to 250 beats/min
- Saturation without motion: 70 to 100% ±2 digits (Adults), 70 to 100% ±3 digits (Neonate)
- Saturation with motion: 70 to 100% ±3 digits (Adults/Neo)
- Low perfusion: 70 to 100% ±2 digits, 0 to 69% unspecified
- Saturation without motion: 20 to 250 beats/min ±3 digits
- Saturation with motion: normal physiologic range 55 to 125 beats/min ±5 digits
- Low perfusion: 20 to 250 beats/min ±3 digits
- Sensor light source wavelength: Infrared 890 nm (nominal), Red 660 nm (nominal)
- Power dissipation: Infrared 22.5 mW (max), Red 30 mW (max)

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