

# Propaq<sup>®</sup> MD

All the Advantages of a Propaq Monitor with a Defibrillator



The Propaq<sup>®</sup> MD was specifically designed to meet the needs of the military and air medical operations when treating critical patients in the field. It combines the well-accepted and proven monitoring capabilities of the Propaq monitor with the clinically superior therapeutic capabilities of ZOLL defibrillation and non-invasive pacing technologies—at half the size of other monitor/defibrillators.

# ZOLL<sup>®</sup>



## Propaq MD Smallest, Lightest, Most Advanced Monitor/ Defibrillator Available

- Robust communications options: integrated Wi-Fi, Bluetooth® with USB cellular modem, and Ethernet capabilities.
- 60% smaller and 40% lighter than other similar monitor/defibrillators.
- First critical care monitor/ defibrillator to receive the IP55 ingress protection rating because of its ability to resist jets of water and dust.
- Meets an unprecedented number of military and airworthiness standards.
- Only airworthy monitor/ defibrillator to offer three invasive pressure channels, necessary to monitor critical patients during long transports.
- Utilizes ZOLL's SurePower™ II battery technology. A single battery provides 6 hours of monitoring of all physiological parameters: 12-lead ECG, NIBP, EtCO<sub>2</sub>, SpO<sub>2</sub>, three invasive pressures, two temperature channels, and 10 200-joule shocks.
- First transport monitor/ defibrillator to offer multiple display modes to operate in bright sunlight or during night missions (NVG-friendly display).
- Available with Masimo rainbow® SET SpO<sub>2</sub>, SpCO, SpMet, SpHb, SpOC, PI, and PVI.

## ADVANCING RESUSCITATION. TODAY.®

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## Propaq MD Specifications

### Defibrillator

**Waveform:** Rectilinear Biphasic™

**Energy Selections:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 30, 50, 70, 85, 100, 120, 150, 200 joules

**Energy Display:** Monitor display indicates both selected and delivered energy.

**Charge Time:** < 7 seconds to 200 J, typical

**Charge Controls:** Control on apex paddle and on device front panel.

**Paddles:** External anterior/anterior adult and pediatric. Adult paddles slide off to expose pediatric paddles.

Compatible with ZOLL external paddles (8000-1010-01), ZOLL internal paddles, and the Propaq MD multi-function therapy cable.

**Synchronized Mode:** Synchronizes defibrillator pulse to patient's R-wave. "SYNC" message displayed on monitor. Marker on display and on recorder paper identifies R-wave discharge point.

**Build-In Defibrillator Tester:** Tests defibrillator energy output and continuity of universal cable and paddles.

**Modes:** AED function with manual override, manual defibrillation.

### CPR Feedback Technology

**See-Thru CPR®:** Artifact filtering

**Real CPR Help®:** Real-time depth and rate feedback

**CPR Dashboard™:** Numeric readout of depth and rate, release indicator, perfusion performance indicator (PPI)

### External Pacer

**Type:** External transcutaneous pacing

**Pulse Types:** Rectilinear, constant current

**Pulse Width:** 40 ms ± 2 ms

**Pacer Rate:** 30 – 180 BPM ± 1.5%

**Output Current:** 0 – 140 mA ± 5% or 5 mA

**Modes:** Demand and Fixed

### Display

**Type:** Bright, Color, LCD TFT

**Brightness:** User adjustable

**Resolution:** 640 x 480 pixels

**Waveform Traces:** Up to 4 waveforms

**Display Modes:** Standard, High Contrast, NVG (night vision goggles) Friendly

**Waveform Display Width:** 11.5 cm

### ECG:

**Cable Detection:** Automatic 3-, 5-, 12-lead

**Input:** 3-lead cable, 5-lead cable, 12-lead cable, paddles, therapy cable

**Cable Compatibility:** Propaq Encore, Propaq CS

**Leads:** I, II, III, AVR, AVL, AVF, V1 – V6

**Bandwidth: (User Selectable)**

0.67 – 20 Hz Limited mode

0.67 – 40 Hz Monitor mode

0.25 – 40 Hz Filtered Diagnostic mode

0.05 to 150 Hz Diagnostic mode

**Heart Rate Range:** 30 – 300 BPM

**Heart Rate Accuracy:** ± 3 BPM or 3%

**Pacer detection and display**

**Electrosurgery interference suppression**

**ESU and defibrillation protected**

**ECG Sizes:** 0.125, 0.25, 0.5, 1, 2, 4 cm/mv, and auto-ranging

**Sweep Speed:** 25 mm/sec, 50 mm/sec

**Common Mode Rejection:** Complies with AAMI EC13-2002 section 4.2.9.10.

### Patient Modes:

**User Selectable:** Adult, Pediatric, Neonate.

Sets defaults for alarms, defibrillation energy, and NIBP settings.

### Trends (on screen)

**Tabular numeric format**

**All parameters trended/viewable**

**Trend Intervals:** 1, 5, 10, 15, 30, 60 minutes

**Duration:** 24 hours at 1-minute intervals

**Snapshots:** Minimum of 32 display data captures (12 seconds of pre- and post-button press)

**Quick Access Trend Display via Display Button**

### Printer

**Waveforms Printed:** 1, 2, or 3

**Print Speeds:** 25 mm/sec or 50 mm/sec

**Print Modes:** Manual or automatic (user configurable)

**On/Off Control:** Front panel or paddle

**Paper Delay:** 6 seconds

**Frequency Response:** Same as the monitor's settings

**Paper Width:** 80 mm

### Masimo® rainbow® SET SpO<sub>2</sub>

**Saturation Range:** 1 – 100%

**Saturation Accuracy:**

Oxygen saturation during no-motion conditions:

Adults, Pediatrics: 70 – 100%, ± 2 digits

0 – 69%, unspecified

Neonates: 70 – 100%, ± 3 digits

0 – 69%, unspecified

Oxygen saturation during motion conditions:

Adults, Pediatrics: 70 – 100%, ± 3 digits

0 – 69%, unspecified

Neonates: 70 – 100%, ± 3 digits

0 – 69%, unspecified

Oxygen saturation during low-perfusion conditions:

Adults, Pediatrics: 70 – 100%, ± 2 digits

0 – 69%, unspecified

Neonates: 70 – 100%, ± 3 digits

0 – 69%, unspecified

**Pulse Rate Range:** 25 – 240 bpm

**Pulse rate during no-motion conditions:**

Adults, Pediatrics,

Neonates: 25 – 240 ± 3 digits

**Pulse rate during motion conditions:**

Adults, Pediatrics,

Neonates: 25 – 240 ± 5 digits

**SpO<sub>2</sub> Average Time Setting:**

4, 8 (default), 16 seconds

### Masimo rainbow® SET SpCO®

**Range:** 0 – 99%

**Accuracy:** 1 – 40% ± 3 digits

### Masimo rainbow® SET SpMet®

**Range:** 0 – 99%

**Accuracy:** 1 – 15% ± 1 digits

### Masimo rainbow® SET SpHb®

**Measurement Range:** 0 – 25 g/dL

**Accuracy (Adults/Infants/Pediatrics):** 8 – 17 g/dL

± 1 g/dL

**Resolution (SpHb g/dL):** 0.1 g/dL

### Masimo rainbow® SET SpOC™

**Measurement Range:** 0 – 35 mL of O<sub>2</sub>/dL of blood

**Resolution:** 0.1 mL/dL

### Masimo Perfusion Index (PI)

**Measurement Range:** 0.02 – 20%

**Resolution:** 0.1%

### Masimo PVI Variability Index (PVI®)

**Measurement Range:** 0 – 100%

**Resolution:** 1%

### Noninvasive Blood Pressure (NIBP)

**Smartcuf® and SureBP® NIBP technology**

**Measurement Intervals:** 1-, 2-, 3-, 5-, 10-, 15-, 30-, and 60-minute, and manual

**Quick Action NIBP Start/Stop button**

**TurboCuf:** 5 min of repeated NIBP readings

**Systolic, diastolic, mean display**

**On-screen manometer, with large numerics**

**Cuff overpressure protection**

**Typical Measurement Time:**

30 – 45 secs (on deflation)

15 – 30 secs – SureBP (on inflation)

**Standard Cuff Sizes:** Neonate #1 – #5, Infant, Child,

Sm Adult, Adult Long, Lg Adult, Thigh

**Default Cuff Inflation Pressure:**

Adult: 160 mmHg

Pediatric: 120 mmHg

Neonatal: 90 mmHg

**Pressure Measurement Range:**

Systolic: 20 – 260 mmHg

Diastolic: 10 – 220 mmHg

Mean: 13 – 230 mmHg

**Maximum Cuff Inflation Pressure:**

Adult: 270 mmHg

Pediatric: 170 mmHg

Neonatal: 130 mmHg

### Microstream® etCO<sub>2</sub>

**Range:**

0 – 150 mmHg

**Accuracy (mmHg):**

0 – 38: ± 2 mmHg

39 – 150: ± 5% + .08% /mmHg >38

**Respiration Range:** 0 – 149 breaths per minute

**Respiration Rate Accuracy:**

0 – 70 BPM: ±1 BPM

71 – 120 BPM: ±2 BPM

121 – 149 BPM: ±3 BPM

**Flow Rate:** 50 ml/min -7.5 + 15 ml/min

### ECG Impedance Respiration

**User-Selectable Leads:** RA-LA, RA-LL

**Breath Rate Range:**

Adult/Pediatric modes: 2 – 150 RPM

Neonate mode: 3 – 150 RPM

**Respiration Rate Accuracy:** ± 2

breaths/min or ± 2%

**Sweep Speed:** 3.13, 6.25, 12.5 mm/sec

### Invasive Pressure

**Three channels**

**Pressure Range:** -30 – 300 mmHg

**Pulse Rate Measurement Range:** 25 – 250 BPM

**Formats:** S/D, S/D (M), (M) user selectable

**User-Selectable Labels:** P1, P2, P3, ABP, AO, ART, CVP, BAP, FAP, LAP, RAP, RAP, UAP, ICP

**Transducer Requirements:** 5 µV/V/mmHg

**Zero Adjustment:** ± 200 mmHg

**Numeric Pressure Accuracy:** ± 2 mmHg or 2% of

reading, plus transducer error

**Transducer Connector:** Standard 6 pin AAMI

### Temperature

**Two YSI 400/700 compatible channels**

**Range:** 0° – 50° C,

**Units:** °C or °F

**Display:** T1, T2, and Delta temp

**Accuracy:** ± 0.1° C

### Power

**Rechargeable, user replaceable, lithium-ion battery**

**Operating Time:** 6 hours (display

brightness at 30%, ECG, SpO<sub>2</sub>, EtCO<sub>2</sub>, IPx3,

Temp x2 and NIBP every 15 min, and 10 200-joule

shocks)

**Battery:**

**Size:** 182 mm x 95 mm x 31 mm

**Weight:** 1.36 lbs

**Battery Indicators:** 5 battery capacity LED

indicators, fault indicator, recalibration indicator

**Recharge Rate:** 4 hours to 100%

**AC Power Adapter:** 100-240 VAC 50, 60, 400 Hz

(@110V)

### General

**Weight:** 10.6 lbs. without paper and battery

11.7 lbs. with paper and battery

**Dimensions:** 8.9" x 10.4" x 7.9"

**With soft handle:** 8.9" x 8.75" x 7.9"

### Environmental

**Operating Temperature:** 0° – 50° C

**Operating Relative Humidity:** 15% – 95%, NC

**Operating Altitude:** Up to 15,000 ft

**Transport/Storage Temperature:** -30° – 70° C

**Shock:** IEC 60068-2-27, 100g, 6ms half sine

**Drop:**

1 meter per MIL STD 810G, Method 516-6, 26

drops,

EN 1789 30-inch functional drop,

2 meter per IEC 60601-1

**Vibration:** MIL STD 810G, Method 514.6

4.4.2 Procedure II,

EN ISO 9919 per (IEC 60068-2.64)

EN 1789 for ambulance RTCA/DO-160G (multiple

helicopter frequencies)

**Enclosure Protection:** (IEC 60529)

**Solid Foreign Object:** IP5X

**Water Ingress:** IPX5

Specifications subject to change without notice.

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