Philips HeartStart MRx Defibrillator

The **Philips Heartstart MRx** is a lightweight, portable monitor/defibrillator. with the capability to offer four different modes of operation; monitor, manual Defibrillate, AED, and pacing. The defibrillator was designed to provide both monitoring and resuscitation by using mutual-parameter functions, including algorithms and options for transferring data to, a full range of defibrillation therapies. The Heartstart MRx is fast and reliable with 12-lead ECG and advanced STEMI support. The MRx has a large 8-inch color screen that can display up to 4 waveforms and numerics. The Philips Heartstar MRx additionally monitors other parameters: arrhythmia detection, SpO2, NIBP, IBP, EtCO2, and temperature.

Features

- Easy to use Interface with a large color display
- Can Display 4 waveforms and numerics, or all 12 leads and numerics
- Screen views can be customized to fit the user's preferences
- Normal or high-contrast view of easy viewing in different lighting conditions
- Seamless data transmission for 12 lead ECGs with optimal wireless link
- 10 hours of monitoring with 2 fully charged batteries
- Ready-For-Use indicator
- optimal AC or DC battery options

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Specifications

Dimensions

Without External Paddles
Width: 12.4 in (313 mm)
Depth: 8.3 in (210 mm)
Height: 11.7 in (295 mm)

With External Paddles
Width: 13.4 in (340 mm)
Depth: 8.3 in (210 mm)
Height: 13.6 in (345 mm)

Weight

13.2 lbs. (6kg): Base unit with 1 battery, pads, and pads cable.

+4.1 lbs. (1.86 kg): With added carrying case.

+2.5 lbs. (1.1 kg): With added paddle tray and external standard paddles.

Environmental

Water Resistance: Meets IEC 60601-2-4

Solids Resistance: IP2X

Temperature
Operating: 32° - 113° F (0° - 45° C)
Storage: -4° - 158° F (-20° - 70° C)

Humidity: Operating: 0% to 95% relative

Safety: Meets EN 60601-1, UL 2601-1, CSA C22.2 No. 601-1-M90 CSA, EN 60601-2-4

Display

Dimensions: 8.4 in diagonal (128 mm x 171 mm)

Type: TFT color LCD

Resolution: 640 x 480 pixels (VGA)

Wave Viewing Time: 5 seconds (ECG)

Strip Chart Printer

Printer
Standard: 50 mm (paper width) thermal array printer.
Optional: 75 mm (paper width) thermal array printer.

Continuous ECG Strip: Prints primary ECG lead with event annotations and measurements in real-time or with 10-second delay.
Auto Printing: Printer can be configured to print marked events, charge, shock, and alarms.
Reports: Event Summary, 12-Lead, Vital Signs Trending, Operational Check, Configuration, Status Log, and Device Information.
Paper Size
1.97 in (50 mm) W by 100 ft. (30 m) L.
2.95 in (75 mm) W by 100 ft. (30 m) L.

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Specifications Continued

Defibrillator

Model: HeartStart MRx (M3535A)

Waveform: Biphasic Truncated Exponential. Waveform parameters adjusted as a function of patient impedance.

Output Energy: Manual (selected): 1-10, 15, 20, 30, 50, 70, 100, 120, 150, 170, 200 Joules maximum energy, limited to 50 Joules for internal defibrillation. AED Mode (single energy output): 150 Joules into a 50 ohm load.

Charge Time: Less than 5 seconds to 200 Joules with a new, fully charged lithium ion battery at 25° C.

Shock Delivery: Via multifunction defib electrode pads or paddles.

Quick Shock: Less than 10 seconds from cessation of CPR to shock delivery.

Patient Impedance Range
Minimum: 15 ohm (internal defibrillation); 25 ohm (external defibrillation).
Maximum: 150 ohm.

AED Mode: Shock advisory sensitivity and specificity meet AAMI DF-39 guidelines.

Battery

Type: 6.0 Ah, 14.8 V, rechargeable lithium ion.

Dimensions
Height: 6.5 in (165 mm)
Width: 3.8 in (95 mm)
Depth: 1.6 in (42 mm)

Weight: 1.6 lbs. (0.73 kg)

Charge Time: Approximately 3 hours to 100%, 2 hours to 80%.

Capacity
At least 5 hours of monitoring with ECG, SpO2, CO2, temperature and two invasive pressures monitored continuously, NBP measured every 15 minutes, and 20 200J discharges (with a new, fully charged battery, operating at room temperature, 25° C).
At least 3.5 hours of monitoring with ECG, SpO2, CO2, temperature and two invasive pressures monitored continuously, NBP measured every 15 minutes, and pacing at 180ppm at 160mA.

Battery Indicators
Battery gauge on battery, capacity indicator on display; flashing RFU indicator, chirp, and 'Low Battery' message appears on display for low battery condition, when 10 minutes of monitoring time and 6 maximum energy discharges remain (with a new battery at room temperature, 25° C).

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Specifications Continued

Data Storage

Internal: 12 hours of continuous ECG waveforms and events, maximum capacity of 55 event summaries.

Data Card: 60 event summary reports or 240 megabytes of patient data.

ECG and Arrhythmia Monitoring

Input

Up to 4 ECG waves displayed and up to 2 ECG waves print simultaneously.

Lead I, II, or III obtained through 3-lead ECG cable and separate monitoring electrodes. With 5-lead cable, obtain leads aVR, aVL, aVF, or V. Pads ECG obtained through 2 multifunction defibrillation electrode pads.

Lead Fault: 'Lead Off' message and dashed line displayed, if an electrode or lead wire becomes disconnected.

Pads Fault: Dashed line displayed if a pad becomes disconnected.

Heart Rate Display: Digital readout on display 15 to 300 bpm, accuracy ±10%.

Heart Rate . Arrhythmia Alarms: HR, Asystole, VFIB/VTACH, VTACH, extreme tachycardia, extreme bradycardia, PVC rate, Pacer not capture, Pacer not pacing.

ECG Size: 2.5, 5, 10, 20, 40 mm/mV, autogain.

Available Options

Non-Invasive Pacing: SpO2 pulse oximetry.

Non-Invasive Blood pressure: CO2 monitoring.

Invasive Blood Pressure (2 lines): Continuous temperature monitoring.

12-Lead Acquisition: 12-lead transmission.

Q-CPR Measurement and Feedback: Audio recording.

ACI-TIPI & TPI Predictive Instruments: Periodic clinical data transmission.

Batch/LAN Data Transfer

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