HEARTSTART MRx
ALS MONITOR

PRODUCT DESCRIPTION

The first thing you'll notice about the HeartStart MRx is its large, color display. Look further and you'll see that it has much more. This combination multi-parameter monitor, defibrillator, AED, and 12-Lead unites Philips' industry-leading monitoring and display technologies with superior diagnostic measurements and our patented resuscitation therapies.

Monitoring starts once a patient cable is connected to the device. Equipped for 3- and 5-Lead ECG monitoring with arrhythmia detection, and optional 12-Lead ECG, pulse oximetry, noninvasive blood pressure, and end-tidal CO2, HeartStart MRx is prepared for today's needs and upgradeable to meet tomorrow's.

Its therapies - manual and semi-automatic defibrillation and synchronized cardioversion - feature Philips' patented low-energy SMART Biphasic waveform, which is proven effective in emergency resuscitation and for minimizing post-resuscitation heart dysfunction. No other external defibrillation waveform is supported by more peer-reviewed clinical data. Transcutaneous pacing can be added and the MRx will pace in either demand or fixed mode.

HeartStart MRx logically displays measurements and patient care data on its easy-to-read, backlit, 8.4-inch screen --- the largest in its class!

Numerics and waveforms can be reconfigured, and the screen reorganized, enabling you to quickly locate the information you need most. With wide viewing angles, it displays an event timer, event markers, numeric vital signs, and up to four waves, as well as text prompts, alarms, and battery status indicators. On-screen menus simplify navigation for configuring data, setting and responding to alarms, and accessing additional functionality. And, automated self-tests, straight-forward operational checks, data collection, and two long-life batteries make the device easy to operate.

All of these features, measurements, and therapies, plus its compact size, low weight (13.2 pounds), and balanced shape mean that HeartStart MRx has the capabilities you need and the performance you demand for rapid intervention, thorough care, and positive patient outcomes --- that's the big picture.

M3536A

Features

Standard Features

- ST/AR Basic algorithm for arrhythmia detection
- ECG monitoring through monitoring electrodes and defibrillation pads
- Synchronized cardioversion
- Adjustable ECG size and autogain
- Manual and AED operation
- SMART Biphasic waveform for defibrillation therapy
- Large 4-wave color display
- Strip chart printer
- Individual, adjustable volume of QRS beeper, voice prompts, and alerts
- Event summary
- Configuration mode
- Service mode
- Operational checks
- Automated self-tests with "ready-for-use" indicator
- Lithium ion battery with capacity gauge
- ECG out capability

Optional Features

- SpO$_2$ with Fourier Artifact Suppression Technology (FAST)
- Noninvasive Blood Pressure
- Microstream™ EtCO$_2$
- Noninvasive Pacing
- 12-Lead ECG with Philips interpretation algorithm

Standard Accessories

- Lithium ion battery with capacity gauge
- Hands-free multifunction electrode cable
- 3-Lead ECG cable
- Disposable monitoring electrodes
- Strip chart recorder paper
- Carrying case

- Defibrillator test load
- Instructions for use (User's guide)
- Quick reference cards
- User training workbook
- Application notes

Package

M3536A	HeartStart MRx ALS Monitor

Ordering Option Information

A01	SpO$_2$
A02	SpO$_2$ and NBP
A03	SpO$_2$, NBP, and EtCO$_2$
A04	EtCO$_2$
B01	External Pacing
B02	12-Lead ECG acquisition
C02	Water Resistant External Paddles
C03	Data Card
C05	Additional Battery
C06	AC Power Module
C07	Barrel style Pad Cable (Replacement for Standard Pad Cable)
C15	5-Lead ECG Cable
LP1	Instructions for Use
LP2	User Training Video (English only)
LPK	Alternate Label Set, AED/Energy Select
SM1	Service Manual (English only)
SM3	Service Training Video (English only)

Upgrades/Supplies/Accessories

Upgrades

M3530A	SpO_2
M3531A	NBP
M3532A	$EtCO_2$
M3533A	Pacing
M3534A	12-Lead ECG
	Option B02 - Acquisition
	Option B03 - Transmission
	Option B04 - Wider Printer
M5527A	External Paddles with Paddle Tray
	Option C02 - Water Resistant Paddles

External Paddles

M3543A	Water Resistant External Paddles
M4745A	Sterilizable External Paddles

Internal Paddles

M1741A	7.5 cm Switchless
M1742A	6.0 cm Switchless
M1743A	4.5 cm Switchless
M1744A	2.8 cm Switchless
M4741A	7.5 cm Switched
M4742A	6.0 cm Switched
M4743A	4.5 cm Switched
M4744A	2.8 cm Switched
989803127121	Large Disposable Switched
989803127131	Medium Disposable Switched
989803127141	Small Disposable Switched
989803127151	Large Disposable Switchless
989803127161	Medium Disposable Switchless
989803127171	Small Disposable Switchless
M4740A	Internal Paddles Adapter Cable

Multifunction Electrode Pads

M3713A	Adult Plus
M3716A	Adult Radiolucent
M3717A	Pediatric Plus
M3718A	Adult Radiotransparent/Reduced Skin

Multifunction Electrode Pads

M3719A	Pediatric Radiotransparent/Reduced Skin

Pads Cable

M3508A	Defib Hands-free, plug style

ECG Monitoring Electrodes

M2202A	High-Tack Foam, 5 electrodes/pack (60 packs/case)

ECG Cables

12-Lead Cable Set

M3525A	10-lead ECG Trunk Cable, 12-pin Connector (for 3-Lead and 12-Lead use)
M3526A	3-lead ECG Set and Plug with Snap (AAMI)
M3527A	Add 7-lead ECG Set for 12-Lead use (AAMI)
M3528A	3-lead ECG Set and Plug with Snap (IEC)
M3529A	Add 7-lead ECG Set for 12-Lead use (IEC)
M1949A	10-lead ECG Patient Trunk Cable, 12-pin ECG Input Connector (for 5-Lead and 12-Lead use)
M1968A	10-electrode Cable Set, Extremities, Grabber (use with M1976A) (AAMI)
M1976A	10-electrode Cable Set, Chest, Grabber (use with M1968A) (AAMI)
M1971A	10-electrode Cable Set, Extremities, Grabber (use with M1978A) (IEC)
M1978A	10-electrode Cable Set, Chest, Grabber (use with M1971A) (IEC)

3-Lead Cable Set

M1500A	3-lead ECG Trunk Cable (AAMI)
M1605A	3-lead ECG Lead Set with Snaps (AAMI)
M1510A	3-lead ECG Trunk Cable (IEC)
M1615A	3-lead ECG Lead Set with Snaps (IEC)

5-Lead Cable Set

M1520A	5-lead ECG Trunk Cable (AAMI)
M1625A	5-lead ECG Lead Set with Snaps (AAMI)
M1530A	5-lead ECG Trunk Cable (IEC)
M1635A	5-lead ECG Lead Set with Snaps (IEC)

Sync Cables

M1783A	Sync Cable (8 ft.)
M5526A	Sync Cable (25 ft.)

SpO$_2$ Sensors/Cables

M1191A	Reusable SpO$_2$ Sensor - Adult Finger
M1192A	Reusable SpO$_2$ Sensor - Pediatric/Small Adult Finger
M1193A	Reusable SpO$_2$ Sensor - Adult Thumb
M1194A	Reusable SpO$_2$ Sensor - Adult Ear Clip
M1195A	Reusable SpO$_2$ Sensor - Infant
M1941A	SpO$_2$ Extension Cable, 2 m
M1943A	Nellcor SpO$_2$ Sensor Adapter Cable, 1 m (use with M1902/3/4B)

NBP

Interconnect Cable

M1598B	Adult Pressure (5 ft.)
M1599B	Adult Pressure (10 ft.)

Reusable Blood Pressure Cuffs

40400A	Reusable NBP Cuff Kit, 3 sizes (pediatric, adult, large adult)
40400B	Reusable NBP Cuff Kit, 5 sizes (infant, pediatric, adult, large adult, thigh)
40401A	Traditional Reusable NBP Cuff - Infant
40401B	Traditional Reusable NBP Cuff - Pediatric
40401C	Traditional Reusable NBP Cuff - Adult
40401D	Traditional Reusable NBP Cuff - Large Adult
40401E	Traditional Reusable NBP Cuff - Thigh
M4552A	Antimicrobial Reusable NBP Cuff - Infant
M4553A	Antimicrobial Reusable NBP Cuff - Pediatric
M4554A	Antimicrobial Reusable NBP Cuff - Small Adult
M4555A	Antimicrobial Reusable NBP Cuff - Adult
M4557A	Antimicrobial Reusable NBP Cuff - Large Adult
M4559A	Antimicrobial Reusable NBP Cuff - Thigh
M1572A	Multi-Patient Comfort Cuffs - Pediatric
M1573A	Multi-Patient Comfort Cuffs - Small Adult
M1574A	Multi-Patient Comfort Cuffs - Adult
M1575A	Multi-Patient Comfort Cuffs - Large Adult

NBP

Disposable Blood Pressure Cuffs

M4572A	Soft Single-Patient Disposable Cuff - Infant
M4573A	Soft Single-Patient Disposable Cuff - Pediatric
M4574A	Soft Single-Patient Disposable Cuff - Small Adult
M4575A	Soft Single-Patient Disposable Cuff - Adult
M4576A	Soft Single-Patient Disposable Cuff - Adult X-Long
M4577A	Soft Single-Patient Disposable Cuff - Large Adult
M4578A	Soft Single-Patient Disposable Cuff - Large Adult X-Long
M4579A	Soft Single-Patient Disposable Cuff - Thigh

EtCO$_2$

Intubated Circuits

M1920A	Filter Line Set - Adult/Pediatric (25 sets/case)
M1921A	Filter H Set - Adult/Pediatric (25 sets/case)
M1923A	Filter H Set - Infant/Neonatal (yellow, 25 sets/case)

Non-Intubated Dual Purpose Circuits (CO$_2$ + O$_2$)

M2520A	Smart CapnoLine - Pediatric
M2521A	Smart CapnoLine - Intermediate
M2522A	Smart CapnoLine - Adult

Non-Intubated Single Purpose Circuits (CO$_2$)

M2524A	Smart CapnoLine - Pediatric
M2525A	Smart CapnoLine - Intermediate
M2526A	Smart CapnoLine - Adult

Power

M3538A	Lithium Ion Battery with Capacity Gauge
M3539A	AC Power Module
M5529A	DC Power Module

Paper

40457C	50 mm Chemical Thermal, Gray Grid (10 rolls)
40457D	50 mm Chemical Thermal, Gray Grid (80 rolls)

Color Handle

M5521A	Green and color label set
M5522A	Blue and color label set
M5523A	Yellow and color label set
M5524A	Rose and color label set
M5525A	Gray and color label set

Miscellaneous

M3725A	Test Load for use with M3508A Pad Cable
M3541A	Carrying Case (includes 3 accessory pouches and shoulder strap)
M3545A	Data Card and Tray
M5528A	Vehicle Wall Mount

Specifications

General

Dimensions with pads: 12.4 in. (W) x 8.3 in. (D) x 11.7 in. (H)
(31.5 cm x 21.0 cm x 29.5 cm)
Dimensions with paddles: 13.4 in. (W) x 8.3 in. (D) x 13.6 in. (H)
(34.0 cm x 21.0 cm x 34.5 cm)
Weight: 13.2 lbs. including pads, pads cable, full roll of paper, and battery. Incremental weight of external standard paddles and paddle tray is 2.5 lbs. Additional battery weighs 1.6 lbs.

Defibrillator

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

Shock Delivery: Via multifunction defib electrode pads, or paddles

Delivered Energy Accuracy:

Selected Energy	Nominal Delivered Energy vs. Patient Impedance							Accuracy
	Load Impedance							
	25	50	75	100	125	150	175	
1J	1.2	1.3	1.2	1.1	1.0	0.9	0.8	±2J
2J	1.8	2.0	2.0	1.9	1.7	1.6	1.5	±2J
3J	2.8	3.0	3.0	3.1	3.0	2.9	2.7	±2J
4J	3.7	4.0	4.0	4.1	4.2	4.2	4.0	±2J
5J	4.6	5.0	5.1	5.1	5.2	5.2	5.0	±2J
6J	5.5	6.0	6.1	6.2	6.3	6.3	6.1	±2J
7J	6.4	7.0	7.1	7.2	7.3	7.3	7.1	±2J
8J	7.4	8.0	8.1	8.2	8.4	8.3	8.1	±2J
9J	8.3	9.0	9.1	9.3	9.4	9.4	9.1	±2J
10J	9.2	10	10	10	10	10	10	±2J
15J	14	15	15	15	16	16	15	±15%
20J	18	20	20	21	21	21	20	±15%
30J	28	30	30	31	31	31	30	±15%
50J	46	50	51	51	52	52	50	±15%
70J	64	70	71	72	73	73	71	±15%
100J	92	100	101	103	104	104	101	±15%
120J	110	120	121	123	125	125	121	±15%
150J	138	150	152	154	157	156	151	±15%
170J	156	170	172	175	177	177	172	±15%
200J	184	200	202	206	209	209	202	±15%

Charge Time: Less than 5 seconds to 200 Joules with a new, fully charged Lithium Ion battery pack at 25°C. Less than 15 seconds when operating without a battery, using the M3539A AC power module alone at 90% rated mains voltage

Patient Impedance Range:

Minimum: 15 Ohm (internal defibrillation); 25 Ohm (external defibrillation)
Maximum: 180 Ohm

Note: Actual functional range may exceed the above values.

Manual Mode

Manual Output Energy (Selected): 1-10, 15, 20, 30, 50, 70, 100, 120, 150, 170, 200 Joules

Controls: On/Off Therapy Knob, Charge, Shock, Sync, Print, Mark Event, ECG Lead Select, Alarm Pause, Event Review

Energy Selection Control: Front panel therapy knob

Charge Control: Front panel button; button on external paddles

Shock Control: Front panel button; buttons on external or switched internal paddles

Synchronized Control: Front panel SYNC button

Indicators: Text prompts, audio alerts, QRS beeper, battery status, Ready For Use, external power/battery charging, Sync mode

Armed Indicators: Charging tone, charged tone, flashing shock button, and energy level indicated on display

AED Mode

AED Energy Profile: 150 Joules nominal into a 50 Ohm test load

Text and Voice Prompts: Extensive text/audible messages guide user through configured protocol

AED Controls: On/Off, Shock

Indicators: Monitor display messages and prompts, voice prompts, battery status, Ready For Use, external power/battery charging

Armed Indicators: Flashing shock button, charged tone, and voice prompts

ECG Analysis: Evaluates patient ECG and signal quality to determine if a shock is appropriate and evaluates connection impedance for proper defibrillation pad contact

Shockable Rhythms: Ventricular fibrillation and certain ventricular tachycardias, including ventricular flutter and polymorphic ventricular tachycardia

Shock Advisory Algorithm Sensitivity and Specificity: Meets AAMI DF-39

ECG and Arrhythmia Monitoring

Inputs: Up to four (4) ECG waves may be viewed on display and up to 2 waves printed simultaneously. Lead I, II, or III is obtained through the 3-lead ECG cable. With a 5-lead cable, leads aVR, aVL, aVF, and V can also be obtained. Pads ECG is obtained through 2 multifunction defibrillation electrode pads.

Lead Fault: Leads Off message and dashed line appear on the display if an electrode or lead becomes disconnected. Lead Off indicator in wave sector

Pad Fault: Dashed line appears on the display if a pad becomes disconnected.

Heart Rate Display: Digital readout on display from 15 to 300 bpm, with an accuracy of ±10%

Heart Rate/Arrhythmia Alarms: HR, Asystole, VFIB/VTACH, VTACH, Extreme Tachy, Extreme Brady, PVC rate, Pacer not capture, Pacer not pacing

Hands Free Defibrillation Cable Length:

M3508A = 5 ft. (1.6 m)
M3507A = 7 ft. (2.2 m)

ECG Cable Length: 9 ft. (2.7 m)

Common Mode Rejection: Greater than 90 dB measured per AAMI standard for cardiac monitors (EC 13)

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

Frequency Response:

AC Line Filter: 60 Hz or 50 Hz
Pads ECG for Display: Monitor (0.15-40 Hz) or EMS (1-30 Hz)
Pads ECG for Printer: Monitor (0.15-40 Hz) or EMS (1-30 Hz)
Leads ECG for Display: Monitor (0.15-40 Hz) or EMS (1-30 Hz)
Leads ECG for Printer: Diagnostic (0.05-150 Hz) or Monitor (0.15-40 Hz) or EMS (1-30 Hz)

Patient Isolation (defibrillation proof):
ECG: Type CF
SpO_2: Type CF
$EtCO_2$: Type CF
NBP: Type CF
External Defib: Type BF
Internal Defib: Type CF

Display

Size: 8.4 in. diagonal (128 mm x 171 mm)

Type: TFT Color LCD

Resolution: 480 x 640 pixels (VGA)

Sweep Speed: 25 mm/s nominal (stationary trace; sweeping erase bar) for ECG and SpO_2; 6.25 mm/s for CO_2

Wave Viewing Time: 5 seconds (ECG)

Battery

Type: 6.3 Ah, 14.8 V, rechargeable, Lithium Ion

Dimensions: 6.5 in. (H) x 3.8 in. (W) x 1.6 in. (D) (165 mm x 95 mm x 42 mm)

Weight: 1.6 lb. (0.73 kg)

Charge Time: Approximately 3 hours to 100%. Approximately 2 hours to 80%, indicated by battery gauge indicator. Charging the battery at temperatures above 45ºC may degrade battery life.

Capacity: At least 5 hours of monitoring with ECG, SpO_2, and CO_2 monitored continuously and NBP measured every 15 minutes, or at least 50 200-joule shocks (on a new, fully charged battery at room temperature, 25º C). At least 3.5 hours while pacing at 180 ppm at 160 mA and monitoring as described above

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*

*Low battery condition triggered when 10 minutes of monitoring time and 6 maximum energy discharges remain (with a new battery at room temperature, 25º C)

Storage: Storing the battery for extended periods at temperatures above 40ºC will reduce battery capacity and degrade battery life.

Thermal Array Printer

Continuous ECG Strip: The Print key starts and stops the strip. The printer can be configured to run real time or with a 10-second delay. The strip prints the primary ECG lead with event annotations and measurements.

Auto Printing: The printer can be configured to automatically print on Marked Events, Charge, Shock, and Alarm. When an alarm condition occurs, the unit prints the primary ECG wave and the alarming wave, if configured.

Reports: The following can be printed: Event Summary, 12-Lead, Operational Check, Configuration, Status Log, and Device Information

Speed: 25 or 50 mm/s with an accuracy of ± 5%

Amplitude Accuracy: ± 5% or ± 40 uV, whichever is greater

Paper Size: 50 mm (W) by 30 m (100 ft.) (L)

Noninvasive Pacing

Waveform: Monophasic Truncated Exponential

Current Pulse Amplitude: 10 mA to 160 mA (5 mA resolution); accuracy 10% or 5 mA, whichever is greater

Pulse Width: 40 ms with ± 10% accuracy

Rate: 30 ppm to 180 ppm (10 ppm increments); accuracy ± 1.5%

Modes: Demand or Fixed Rate

Refractory Period: 340 msec (30 to 80 ppm); 240 msec (90 to 180 ppm)

SpO$_2$ Pulse Oximetry

Range: SpO2: 0-100%; pulse rate: 30 to 300 bpm

Resolution: 1%

Display Update Period: 1 sec. typical numeric update rate

Accuracy with:

M1191A sensor - 1 standard deviation 70% to 100%, ± 2.5%
M1192A sensor - 1 standard deviation 70% to 100%, ± 2.5%
M1193A sensor - 1 standard deviation 70% to 100%, ± 2.5%
M1194A sensor - 1 standard deviation 70% to 100%, ± 4.0%
M1195A sensor - 1 standard deviation 70% to 100%, ± 4.0%
NELLCOR sensors - 1 standard deviation 80% to 100%, ± 3.0%

Pulse Rate Accuracy: 2% or 1 bpm (whichever is greater)

Alarm Range:

Low Limit: 50 to 99% (Adult/Pediatric)
High Limit: 51 to 100% (Adult/Pediatric)

Alarm Delay: 10 seconds

Noninvasive Blood Pressure

Pressure Range:
Systolic: 40-260 mmHg
Diastolic: 20-200 mmHg
Initial Pressure: 160 mmHg (Adult); 120 mmHg (Pediatric)
Maximum Pressure: 280 mmHg
Overpressure Safety Limits: Maximum of 300 mmHg
Cuff Inflation Time: 50 second maximum (pediatric or adult)
Accuracy: ±3 mmHg
Alarm Range:
Systolic high limit: 35 - 270 (Adult), 35 - 180 (Pediatric)
Systolic low limit: 30 - 265 (Adult), 30 - 175 (Pediatric)
Diastolic high limit: 15 - 245 (Adult), 15 - 150 (Pediatric)
Diastolic low limit: 10 - 240 (Adult), 10 - 145 (Pediatric)
Mean high limit: 25 - 255 (Adult), 25 - 160 (Pediatric)
Mean low limit: 20 - 250 (Adult), 20 - 155 (Pediatric)
Rated Life: 50,000 measurement cycles (36/day for 2.3 years)
Auto Mode Repetition Time: 1, 2.5, 5, 10, 15, 30, 60, or 120 minutes
Measurement Time: Auto/manual mode: 30 seconds (average) @ HR > 60 bpm, 170 seconds (maximum)
Interconnect Tube Length:
M1598B Connect tubing (1.5 m)
M1599B Connect tubing (3 m)

End-Tidal Carbon Dioxide

Range: 0 to 99 mmHg
Resolution: 1mmHg (0.1 kPa)
Accuracy: For values between 0 and 38 mmHg: ±2 mmHg. For values between 39 and 99 mmHg: ± 5% of reading + 0.08% for every 1 mmHg (above 40 mmHg). Values read at sea level after ≥ 20 min. warm up
Alarm Range:
Low Limit: 10 to 94 mmHg (Adult/Pediatric)
High Limit: 20 to 95 mmHg (Adult/Pediatric)
Sample Size: 50 ml per min.

Airway Respiration Rate

Range: 0 to 150 rpm
Resolution: 1 rpm
Accuracy:
0 to 40 rpm ±1 rpm
41 to 70 rpm ±2 rpm
71 to 100 rpm ± 3%
101 to 150 rpm ±5%
Alarm Range:
Low Limit: 0 to 99 rpm (Adult/Pediatric)
High Limit: 10 to 100 rpm (Adult/Pediatric)

Apnea Alarm Time: 10-40 seconds, in increments of 5

Calibration Gas for CO_2 Measurement

Ingredients: 5% Carbon Dioxide, 21% Oxygen, 74% Nitrogen
Cylinder Size: BD
Method of Preparation: Gravimetric
Blend Tolerance: 0.03%
Accuracy: 0.03% absolute
Moisture: 10 PPM Maximum
Expiration Period: 2 years
Pressure: 144 PSIG, Volume: 1L

12-Lead ECG

Inputs: With a 10-Lead cable, leads I, II, III, aVR, aVL, aVF, V/C1-V/C6 can be obtained. All 12-Lead ECG waves can be viewed on the display simultaneously. All 12 leads can be printed on the strip chart printer in 3x4 format.

12-Lead ECG Transmission: Data card to a PC

Receiver Type: HeartStart Event Review Pro

Patient Data Storage

Internal Event Summary: 8 hours of continuous ECG waveforms and events AND 50 12-Lead ECG reports

Data Card Event Summary: 8 hours of continuous ECG waveforms and events AND 50 12-Lead ECG reports

Environmental

Temperature: 0° C to 45°C operating, -20° to 70°C storage

Humidity: Up to 95% relative humidity

Altitude:
Operating: 0 to 15,000 ft. (0 to 4,500 m)
Storage: 0 to 15,000 ft. (0 to 4,500 m)

Mechanical Shock:

Operating Impact: Half-sine waveform, duration < 3 ms, velocity change > 111 in/s ± 5% 3 times on all six faces (i.e., axes)

Non-operating Shipping: Trapezoidal waveform, acceleration ≥ 30 g, velocity change=742 cm/s ± 10% on all six faces (i.e., axes)

Bump: EN60068-2-29 Bump (Half-sine, 40 g peak, 6 msec duration, 1,000 bumps x 3 axes)

Free fall: IEC 68-2-32 Free fall. Drops on all faces onto a steel surface (excluding bed rail hook)
- ? in. (? cm) with carrying case
- ? in. (? cm) without carrying case
- ? in. (? cm) onto handle

Vibration:

Operating: MIL STD 810E 514.4 Category 6 Helicopter, General Storage, UH60

Non-Operating:
- IEC 68-2-6 Vibration (sinusoidal) (10-57 Hz, +/- 0.15mm; 58-150 Hz, 2g; 20 sweeps x 3 axes)
- IEC 68-2-64 Vibration, broad-band random (10-20 Hz, 0.05 g^2/Hz; 20-150 Hz, -3 dB/octave; 150Hz, 0.0065g^2/Hz; 1.5 hours x 3 axes)

Solids/Water Resistance: IP24. Water testing performed with patient cables connected to the device

EMC: Meets EN 60601-1-2:2001

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

Other Considerations: Device not suitable for use in the presence of concentrated oxygen or a flammable anesthetic mixture with air, oxygen, or nitrous oxide

Mode of Operation: Continuous

AC Line Powered:
Input: 100-240 VAC, 50-60 Hz, 1-0.46 A
Output: 18 V, 5 A, 90 W
Battery Powered: 14.8 V Rechargeable, Lithium Ion

Philips Medical Systems is part

of Royal Philips Electronics

UNITED STATES:

Philips Medical Systems
Cardiac and Monitoring Systems
3000 Minuteman Road
Andover, MA 01810
Tel: (800) 934-7372

CANADA:

Philips Medical Systems
2660 Matheson Blvd. E.
Mississauga, Ontario L4W 5M2
Tel: (800) 291-6743

EUROPE, MIDDLE EAST AND AFRICA:

Philips Medizinsysteme Böblingen GmbH
Cardiac and Monitoring Systems
Hewlett-Packard Str. 2
71034 Böblingen
Germany
Fax: (+49) 7031 463 1552

LATIN AMERICA HEADQUARTERS:

Philips Medical Systems
5200 Blue Lagoon Drive
9th Floor
Miami, FL 33126
Tel: (305) 267-4220

ASIA PACIFIC HEADQUARTERS:

Philips Medical Systems
26/F Hopewell Centre
17 Kennedy Road
Wanchai
Hong Kong
Tel: (+852) 2821 5888
Fax: (+852) 2527 7136

www.medical.philips.com