

HeartStart FRx defibrillator specifications

Defibrillator

Defibrillator family	Order 861304. Defibrillator, battery, SMART Pads II (1 set), Setup and Maintenance Guides, Owner's Manual, Quick Reference Guide, date sticker
HeartStart FRx Ready-Pack configuration	Order Option R01. Defibrillator, battery, carry case, SMART Pads II (1 pre-connected set, 1 spare set), Setup and Maintenance Guides, Owner's Manual, Quick Reference Guide, date sticker
Waveform	Truncated exponential biphasic; waveform parameters adjusted as a function of each patient's impedance
Therapy	Adult defibrillation: nominal peak current 32 A (150 J nominal into a 50-ohm load) Pediatric defibrillation with optional FRx Infant/Child Key installed: nominal peak current 19 A (50 J nominal into 50-ohm load)
Protocol	Device follows preconfigured settings; defibrillation and CPR protocol can be customized using HeartStart Event Review software

User interface

Instructions	Detailed voice prompts and visual icons guide responder through use of the defibrillator
CPR coaching	Voice coaching for adult and infant/child CPR provides instructions and audio cues for the appropriate number, rate, and depth of chest compressions, as well as for each breath
Controls	Green On/Off button, blue-lit i-button, orange Shock button, optional Infant/Child Key
Indicators	Ready light, blue-lit i-button, caution light, illuminated pads, icons; Shock button lights up when shock is advised

Physical

Size	6 cm x 18 cm x 22 cm (2.4" x 7.1" x 8.9") D x H x W
Weight	With battery and pads case: 1.6 kg (3.5 lbs.)

Environmental/physical requirements

Sealing	Waterjet-proof IPX5 per IEC60529 Dust-protected IP5X per IEC60529
Temperature	Operating/Standby: 32° – 122° F (0° – 50° C) Transient operating (for 20 minutes or less, after rapid transition from 68° F [20° C]): -4° to 122° F (-20 to 50° C); under non-condensing humidity conditions.
Altitude	-400 m to 4,572 m (-1312 ft to 15,000 ft)
Aircraft	Meets RTCA/DO-160G:2002 Section 21 (Category M - Radiated Emissions) and Section 20 (Category M - Conducted Immunity, and Category D - Radiated Immunity).
Crush	500 kg (1100 lbs)
Drop	Withstands 1.22 m (4 ft) drop on any edge, corner, or face of the device onto masonry surface.
Vibration	Operating: meets MILSTD 810G Fig. 5146E-1, random. Standby: meets MILSTD 810G Fig. 5146E-2, swept sine (helicopter).
EMI (radiated/immunity)	Meets CISPR 11 Group 1 Class B and IEC 61000-4-3

Data recording and transmission

Infrared	Wireless transmission of event data to a PC using the IrDA protocol
HeartStart Event Review software	Data management software (optional) for download and review of data retrieved through defibrillator's infrared data port
Data stored	First 15 minutes of ECG and the entire incident's events and analysis decisions

Patient analysis system

Patient analysis	Evaluates patient ECG to determine if a rhythm is shockable. Rhythms considered shockable are ventricular fibrillation (VF) and certain ventricular tachycardias (VT) associated with lack of circulation. For safety reasons, some VT rhythms associated with circulation will not be interpreted as shockable, and some very low-amplitude or low-frequency rhythms will not be interpreted as shockable VF.
Sensitivity/specificity	Meets AAMI DF80 guidelines and AHA recommendations for adult defibrillation
Shock advised	Able to deliver a shock as soon as the device indicates a shock is advised
Quick Shock	Able to deliver a shock after the last chest compression of a CPR interval, typically in 8 seconds
Shock-to-shock cycle time	Typically less than 20 seconds between shocks in a series
Artifact detection	Allows ECG analysis even in the presence of most pacemaker artifact and electrical noise sources; other artifacts are detected and corrective voice prompts issued

Battery (M5070A)

Item number(s)	Standard: M5070A Aviation: 989803139301 (TSO C-142, U.S. only)
Type	9 Volt DC, 4.2 Ah, lithium manganese dioxide, disposable long-life primary cell
Capacity	Minimum 200 shocks or 4 hours of operating time (EN 60601-2-4:2003)
Install-by date	Battery is labeled with an install-by date of at least five years from date of manufacture
Standby life	Four years typical when battery is installed by the install-by date (will power the AED in standby state within the specified standby temperature range, assuming one battery insertion test and no defibrillation uses)

SMART Pads II

Item number	989803139261
Active surface area	80 cm ² (12.4"²) each 85 cm ² (13.2"²) each
Cable length	121.9 cm (48")
Use-by date	Pads case is labeled with a use-by date of at least two years from date of manufacture
Infant/Child Key	Item # 989803139311

Training SMART Pads II

Item number	989803139271
Function	Special pads place HeartStart FRx into training mode and disable its energy delivery capability; features eight real-world training scenarios

Automated and user-activated self-tests

Daily automatic self-tests	Tests internal circuitry, waveform delivery system, pads, and battery capacity
Pads integrity test	Specifically tests readiness-for-use of pads (gel moisture)
Battery insertion test	Upon battery insertion, extensive automatic self-tests and user-interactive test check device readiness
Status indicators	Blinking green "Ready" light indicates ready for use; audible "chirp" indicates need for maintenance

* Refer to the HeartStart FRx Defibrillator Owner's Manual for detailed product instructions. All specifications based on 25° C unless otherwise noted. The defibrillator and its accessories are made of latex-free materials.