

# PHILIPS



For those who get there first



Philips HeartStart FRx Defibrillator  
Product information

**HEARTSTART**  
DEFIBRILLATORS

# Sudden cardiac arrest can anyone,



# happen to anytime, anywhere.

- The current national survival rate for SCA is less than five percent.
- The likelihood of successful resuscitation decreases by about 10% with every minute that passes.
- An additional 40,000 lives could be saved each year in the U.S. alone with widespread access to defibrillators.

## Power to save a life

Sudden cardiac arrest (SCA) is one of the leading causes of death in the United States, striking more than 340,000 victims each year.<sup>1,2,3</sup> More people die from SCA than from breast cancer, prostate cancer, house fires, hand guns, traffic accidents and AIDS combined.

SCA can happen to anyone, anytime, anywhere and sometimes in extreme conditions. Rely on the Philips HeartStart FRx Defibrillator to be up to the task. In the hands of those who get there first, it provides the power to save a life.



### Coming to the rescue

Often first on the scene of an emergency, police forces equipped with AEDs can cut defibrillator response time to SCA victims by three minutes.<sup>4</sup>



### Taking care of business

Thirteen percent of workplace fatalities reported in 1999 and 2000 were due to cardiac arrest.<sup>5</sup>



### Protecting kids, parents and teachers

An estimated 5,000-7,000 children in the U.S. succumb to sudden cardiac arrest annually,<sup>6</sup> many related to sporting events.

Introducing the Philips HeartStart

# FRx Defibrillator



For more than a century, Philips has pioneered technology that makes life better. Today, we're taking this commitment one step further; creating products that not only enhance life, but also preserve it. The Philips FRx Defibrillator is the newest member of the HeartStart family of defibrillators designed with new technological advancements to help in treating the most common cause of SCA.

The Philips HeartStart FRx Defibrillator is designed to be easy to use, rugged and reliable for those who get there first. On the scene with

law enforcement, on the field with student athletes or on the job with employees, the FRx Defibrillator is the solution for treating SCA from ventricular fibrillation in environments and conditions too demanding for many other defibrillators.

The HeartStart FRx Defibrillator carries innovation in its genes. Building on the successes of the other members of the HeartStart family of defibrillators, the FRx brings innovations to the treatment of SCA.

# Introducing the advancements of the Philips HeartStart FRx Defibrillator

## Preconnected SMART Pads II

Pads for all patients. Save valuable time in an emergency with preconnected pads for use on adults and children. SMART Pads II eliminate the expense of having to purchase different pads sets for different patient types.

## Wireless Data Transfer

A first in defibrillation technology, the FRx provides a mobile, wireless solution for data management using the Palm OS® platform. It features an infrared data port for easy transmission of information without cables or hardware compatibility issues.

## Infant/Child Key

Simply insert the Infant/Child Key into the FRx to signal to the device that you're treating an infant or a child. The defibrillator adjusts to provide special pads placement and CPR instructions. The pads icons also flash to show you the appropriate pads placement and the device reduces the shock energy to a level more appropriate for an infant or a child (less than 55 pounds or 8 years of age).

## CPR Coaching

Available only on HeartStart Defibrillators, CPR Coaching reminds the responder of CPR basics and provides options for both adults and children.



## SMART Technology, only from Philips

At the core of all HeartStart Defibrillators is SMART Biphasic technology. The HeartStart FRx Defibrillator's biphasic waveform delivers a highly effective defibrillation shock that is also gentle to the heart. No other external defibrillation therapy has been supported by more published clinical data.<sup>7</sup>

SMART Analysis, a proven Philips technology for heart rhythm assessment, ensures that the FRx Defibrillator only shocks when it should. SMART Analysis automatically assesses the

victim's heart rhythm and is designed not to deliver a shock unless the rhythm is determined to be shockable — even if the shock button is pressed. What's more, SMART Pads II enable the FRx to keep pace with the responder by adjusting to their actions.

## Designed for real world use

The Philips HeartStart FRx Defibrillator is exceptionally rugged. Designed to surpass rigorous testing requirements, the FRx withstands jetting water, loads up to 500 pounds and a one-meter drop onto concrete.

### Built on a platform of proven ease-of-use

The HeartStart FRx Defibrillator was designed to be as easy to use as the HeartStart OnSite Defibrillator and shares many of its features, including CPR Coaching and intuitive icon-driven operation. Although small and lightweight — just 3.5 pounds — the FRx is equipped to guide you through the resuscitation of a SCA victim.

The HeartStart FRx guides you through every step with clear, calm voice commands and descriptive visual icons. The FRx even reminds you to call emergency medical services (EMS). Pressing the blue i-button activates HeartStart CPR Coaching for assistance with CPR. The flashing icons and the Quick Reference Guide can be used to lead you through the defibrillation steps — even in situations where hearing voice instructions is a challenge.

Once EMS arrives, hand-off is fast and easy because the FRx is compatible with advanced defibrillators like the HeartStart MRx. With HeartStart adapters, our pads can be plugged into devices from other manufacturers to ensure continuity of care.

## Providing a complete, reliable solution

### Reliability backed by Philips

The HeartStart FRx Defibrillator is powered by an easy to install, long-life (four-year) battery, so you know the device is charged and ready. The device's automated daily, weekly and monthly self-tests check the pads readiness, and verify functionality and calibration of circuits and systems. With over 85 tests, the FRx is one of the most comprehensive self-testing devices on the market and is virtually maintenance-free.

The blinking green "Ready" light on the defibrillator is your assurance that the device is ready for use.

## Easy as 1-2-3 in an emergency



**1** Press the green on/off button, which activates voice instruction.



**2** Place the pads on the patient as directed.



**3** When instructed by the device, press the orange shock button.

### Philips HeartStart Essentials—The key to a successful early defibrillation program

Philips helps implement a comprehensive program with most everything you and your medical director will need to help save a life from sudden cardiac arrest. We'll get you started with pre-implementation consulting and site assessments. We can manage your everyday needs including medical direction from a licensed physician, web-based program management, data management software, and responder and instructor training. Philips offers ongoing support with a five-year warranty, optional extended warranty and continued customer support from supplies ordering to technical assistance.

# Philips HeartStart FRx Defibrillator

## Product specifications

Defibrillator	
Model	HeartStart FRx Defibrillator
Model Number	861304
How Supplied	Defibrillator, battery (1), SMART Pads II (1 set), Owner Manual, Quick Reference Guide
Waveform	Truncated Exponential Biphasic. Waveform parameters adjusted as a function of each patient's impedance
Energy	Single energy output: Adult: nominal 150 Joules into a 50-ohm load Infant/Child: nominal 50 Joules into a 50-ohm load
Protocol	Device follows preconfigured settings. Defibrillation and CPR protocol can be customized using HeartStart Event Review or HeartStart Configure 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 each breath, as well as the appropriate number, rate and depth of chest compressions.
Controls	Green on/off button, blue i-button, orange shock button, optional infant/child key
Indicators	Ready light, blue i-button, caution light, illuminated pads, icons, shock button lights up when shock is advised.

Physical	
Size	2.4 x 7.1 x 8.9 inches (6 x 18 x 22 cm) H x D x W
Weight	With battery and pads case: 3.5 lbs. (1.5 kg) Without battery or pads case: 2.6 lbs. (1.2 kg)

Environmental	
Sealing	Waterjet proof IPX5 per IEC60529 Dust protected IP5X per IEC60529
Temperature	Operating/Standby: 32° - 122° F (0° - 50° C)
Altitude	0 to 15,000 feet
Aircraft	Device: RTCA/DO-160D; 1997
Crush	500 pounds
Vibration	Operating: meets MILSTD 810F Fig. 514.5C-17, random; Standby: meets MILSTD 810F Fig. 514.5C-18, swept sine
EMI (Radiated/Immunity)	CISPR II Group I Class B, IEC 61000-4-3, and IEC 61000-4-8

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 (Circulation 1997;95:1677-1682)
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 CPR pause, typically in eight seconds

Shock-to-Shock Cycle Time	Typically less than 20 seconds between shocks in a series
Artifact Detection	Advanced signal processing allows accurate ECG analysis even in the presence of most pacemaker artifact and electrical noise sources. Other artifacts are detected and corrective voice prompts issued

Battery	
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
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 uses.)

SMART Pads II	
Item Number	989803139261
How Supplied	Disposable pads case containing adhesive multifunction defibrillator pads. HeartStart plug style connector clicks into device for preconnected pads solution
Active Surface Area	12.4 in <sup>2</sup> (80 cm <sup>2</sup> ) each
Cable Length	48 inches (121.9 cm)
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 Number	989803139311

Training Pads II	
Item Number	989803139271
Function	Special pads place HeartStart FRx into training mode and disable its energy delivery capability. Features 8 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 Indicator	Blinking green "Ready" light indicates ready for use

Data recording and transmission	
Infrared	Wireless transmission of event data to PC or palmOne™ PDA 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	Stores first 15 minutes of ECG and the entire incident's events and analysis decisions

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



## Philips — The trusted choice

- One of the world's largest medical products companies with annual revenue of over \$7 billion
- History of innovation. Philips introduced the medical X-ray tube in 1918, the audiocassette in 1963, the first VCR and created compact disc technology
- With over 250,000 automated external defibrillators installed, Philips has more AEDs on the job, in the air, in the classroom and in neighborhoods than anyone else<sup>8</sup>
- Over 5.5 billion HeartStart Defibrillator service hours logged, with an additional 2.7 million hours added every day
- Over 17% of Fortune 1000 companies, 8 out of 10 major airlines and 43 professional sports teams rely on Philips HeartStart Defibrillators

To learn more about the HeartStart FRx Defibrillator and Philips Medical Systems, visit [www.philips.com/heartstart](http://www.philips.com/heartstart) or call 1-800-934-7372.

## Philips Medical Systems is part of Royal Philips Electronics

### On the Web

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Palm OS is a registered trademark of PalmSource, Inc.

## References

<sup>1</sup>National Center for Health Statistics. National Vital Statistics Report, Hyattsville, Maryland: Public Health Services, 2000; 48(11).

<sup>2</sup>FEMA/United States Fire Administration. A Profile of Fire in the United States. Twelfth edition, 1989-1998.

<sup>3</sup>American Heart Association. 2004 Heart and Stroke Statistical Update. Dallas, Texas: American Heart Association, 2004

<sup>4</sup>Ibid.

<sup>5</sup>Occupational Safety & Health Association (OSHA). [www.osha.gov/dts/tib/tib\\_data/tib20011217.pdf](http://www.osha.gov/dts/tib/tib_data/tib20011217.pdf).

<sup>6</sup>Berger S, Dhaka A, Friedberg DZ. Sudden cardiac death in infants, children and adolescents. Pediatric Clinics of North America, Apr: 1999; 46 (2):221

<sup>7</sup>Philips Medical Systems. Smart Biphasic Studies, listed alphabetically by study author. [www.medical.philips.com/main/products/resuscitation/products/fr2plus/fr2plus\\_resources.html](http://www.medical.philips.com/main/products/resuscitation/products/fr2plus/fr2plus_resources.html)

<sup>8</sup>Frost and Sullivan