

# **LIFEPAK® AED** response system **Connected. Ready.**



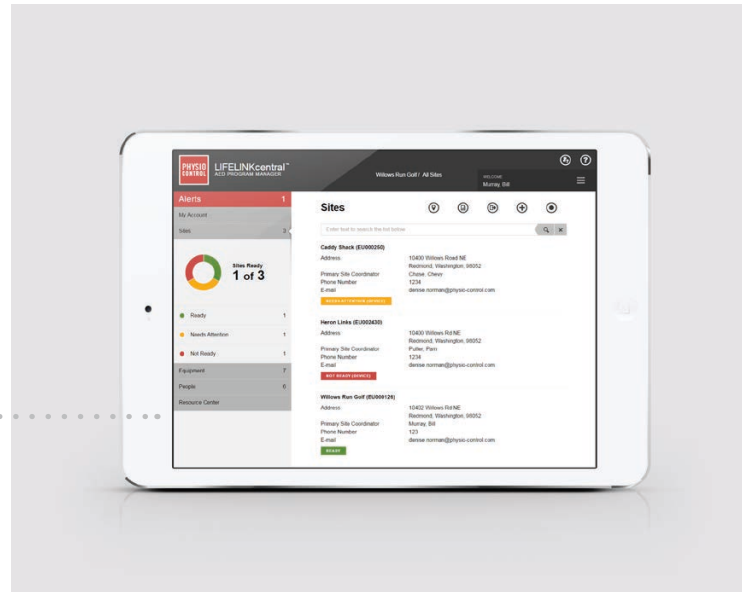
**LIFEPAK® CR2** defibrillator  
with **LIFELINKcentral™ AED** program manager

# A new approach to public access defibrillation.

Sudden cardiac arrest (SCA) can happen to anyone—anywhere. Immediate treatment is vital. A victim's chance of survival dramatically decreases for every minute without treatment.<sup>1</sup> That's why public access defibrillators are so important. They put lifesaving technology where it can do the most good. So when an emergency happens, you should have nothing less than the best.

Visualize a future where better technology enables better outcomes—and more lives saved. The groundbreaking LIFEPAK CR2 defibrillator with LIFELINKcentral AED program manager is at the heart of a complete AED response system. Everything and everyone involved are connected, reducing unnecessary delays when a SCA occurs. It's exactly the breakthrough technology you'd expect from the industry leader.







# Self-monitoring means you're emergency ready

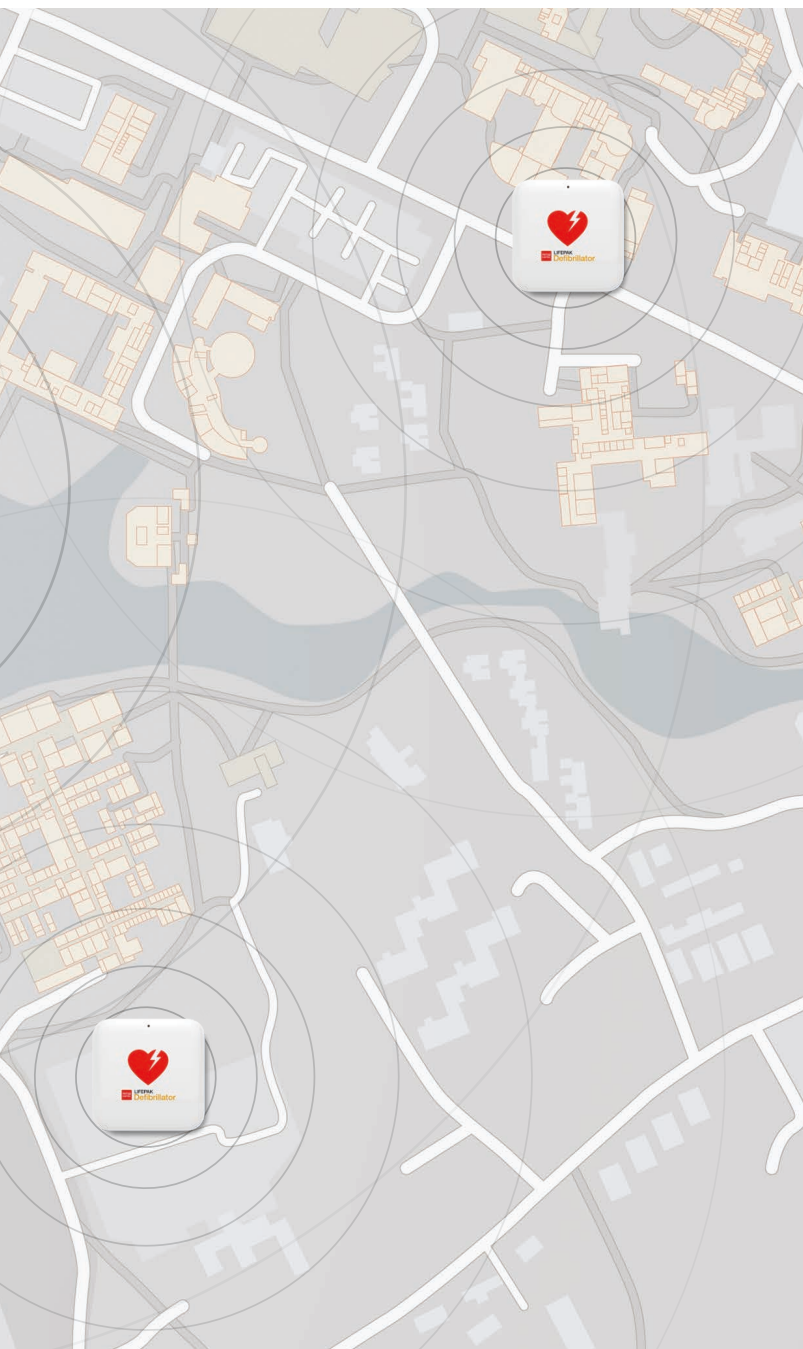
AEDs are effective only if they are close at hand and ready to work. Whether you have one AED, or 100 spread across the globe, now you can track the readiness status of each one. Ongoing system maintenance has been time-consuming and error-prone—until now.



The LIFELINKcentral AED program manager monitors each CR2 connected to a Wi-Fi® network and alerts you to anything that may affect device readiness—all automatically.

Battery not charged? You'll receive an alert through the LIFELINKcentral AED program manager, helping to greatly reduce the effort and expense of managing your AED program, while increasing your program's readiness and effectiveness.





## Connectivity is the foundation for better care.

Wi-Fi connectivity can give emergency responders equipped with LIFENET® AED event viewer a complete picture of each SCA event. So even before they arrive, they are better prepared for the patient, knowing details of shocks given, seeing the actual patient's ECG and more.

This continuity of care follows patients to the hospital as well, and carries over for providers connected to the LIFENET System. After an event, all information can be seamlessly sent via Wi-Fi network and integrated into one patient care record report, without having to download event data directly from the AED.

# Continuous CPR increases survival rates<sup>2</sup>

Every SCA response requires CPR. Every single one. Previously, CPR had to be interrupted for heart rhythm analysis, and older, competitive technologies require rescuers to pause for 10 seconds or more. Unfortunately, interrupting CPR adversely affects survival rates and the 2015 American Heart Association (AHA) Guidelines recommend minimizing pauses to increase the chance of a successful outcome.<sup>3</sup>

While other AEDs may offer CPR feedback through the use of an accelerometer or additional tool, the CR2 provides the right amount of instruction and includes new cprINSIGHT™ analysis technology. Once CPR begins, cprINSIGHT technology automatically analyzes and detects if a shock is needed. This significantly reduces pauses in chest compressions, even eliminating pauses if the rhythm is determined to be non-shockable. And more CPR means improved blood circulation and better odds of survival.<sup>3,4</sup>

The CR2 is the only AED that allows chest compressions during ECG rhythm analysis, thereby reducing pauses between CPR and defibrillation. In an AED comparison study, the CR2 helped lay responders deliver the highest overall CPR quality.<sup>5</sup> If a shockable rhythm is detected, the CR2 delivers shocks with powerful escalating energy, with no judgment call required on the part of the user. Proven superior by competitive testing, the CR2 will keep the rescuer focused on what really matters—saving a life.<sup>5</sup>







## **Fastest time to first shock.<sup>5</sup>**

Even minimally-trained users can quickly begin lifesaving care in just 2 steps:

1

Open lid and bare patient's chest.



2

Pull red handle and apply electrodes.



According to the AHA Guidelines, when bystanders provide CPR and use an AED to deliver a shock within 3-5 minutes of collapse or before emergency services arrive, survival rates can increase as high as 70%.<sup>3</sup>



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*We're in it for life.*

# Designed for user confidence

For a minimally trained responder, intervening in an unfolding emergency can be intimidating. Responders need the easiest possible AED to instill confidence.

While other AEDs may be difficult to use or require users to stop CPR during analysis, the LIFEPAK CR2 defibrillator uses simple graphics, audible instructions and automated features to help users remain focused. We've removed all the guesswork with proven better results.<sup>5</sup>

The CR2 was rated easiest to use, easiest to hear and highest in overall user confidence by AED users.<sup>5</sup>







1



## Saving a life can be easier than you think.

1-2

### **Layered design with easy to follow bold graphics**

Both trained and untrained AED users clearly know how to begin.



### **QUIK-STEP™ electrodes**

Peel directly off the base for faster side-by-side placement.



### **cprINSIGHT™ analysis technology**

Analyses for shockable rhythm during chest compressions with no need to pause.



### **Metronome and CPR coaching**

Sets an effective pace and audibly guides users, detecting and correcting technique as needed.



### **Child Mode**

Toggle to Child Mode for reduced energy and CPR guidance appropriate for children.



### **ClearVoice™ technology**

Enables prompts to be heard more clearly in noisy environments.



### **Highest available energy**

Up to 360J for more effective shocks as needed.



### **Bilingual**

Toggle between two pre-set languages when using the device.



### **LIFEPAK TOUGH™**

IP55 rating for challenging environments.

8yr

### **8-year warranty**

Backed by an 8-year warranty.

# Specifications

## Defibrillator

### Waveform: Biphasic Truncated

Exponential with voltage and duration compensation for patient impedance.

### Patient impedance range: 10 – 300 ohms

### Energy accuracy:

10% of the energy setting into 50 ohms  
15% of the rated energy output into 25 – 175 ohms

**Output energy sequence:** Multiple levels, configurable from 150 joules to 360 joules.

**Energy default:** 200J, 300J, 360J (adult)  
50J, 75J, 90J (pediatric)

**Shock Advisory System™:** An ECG analysis system that advises whether a shock is appropriate.

### cprINSIGHT™ analysis technology:

Enables the defibrillator to analyze the patient's heart rhythm while CPR is being performed.

**CPR coaching:** Instructions for adult and pediatric CPR, including feedback when no CPR is detected, rate and depth guidance, a metronome and instructions on hand placement.

### Time to shock at 360J after CPR (with cprINSIGHT enabled):

- **Semi-automatic:** < 7 seconds

- **Fully automatic:** < 13 seconds

**Charge time:** 0 seconds for first 150J or 200J shock (as device is pre-charged). With cprINSIGHT enabled, subsequent shocks will be charged during CPR and ready to shock at the end of the CPR period.

## Controls

**Lid release/ON-OFF:** Controls device power.

**Shock button, semi-automatic:** Delivers energy when button pressed by the user.

**Shock button, fully automatic:** Flashes prior to delivering shock without requiring user intervention.

**Child Mode button:** Allows operator to switch to Child Mode for reduced energy and CPR guidance appropriate for children.

**Language button:** Optional feature allows operator to switch between the primary and secondary languages for an optional multi-language configuration.

**Electrical protection:** Input protected against high voltage defibrillator pulses per IEC 60601-1/EN 60601-1.

**Safety classification:** Internally powered equipment. IEC 60601-1/EN 60601-1.

## User interface

**User interface:** The user interface includes voice prompts and audible tones.

**ClearVoice™ technology:** Detects background noise and adjusts audio and voice prompts to ensure they can be heard clearly in noisy environments.

**Device status indicators:** Visual and audible indicators indicating system readiness (device, pads and battery).

## Environmental

**Note:** All performance specifications defined assume the unit has been stored (two hours minimum) at operating temperature prior to operation.

**Operating temperature:** +32° to +122°F (0° to +50°C).

**Storage temperature:** -22° to +140°F (-30° to +60°C) with battery and electrodes, maximum exposure time limited to one week.

**Long term storage:** Always store the defibrillator within the recommended temperature range of 59° to 95°F (15° to 35°C).

**Altitude:** -1,253 to 15,000 ft (-382 to 4,572 m).

**Relative humidity:** 5 to 95% (non-condensing).

**Dust and water resistance:** IEC 60529/EN 60529 IP55 with electrodes connected and battery installed.

**Shock:** IEC 60068-2-27, (40g, 11 ms pulse, ½ sine each axis).

**Vibration:** MIL-STD-810G, method 514.6, helicopter – category 14 and ground vehicle – category 20.

## Physical characteristics

### With handle, including electrodes and battery:

- **Height:** 3.8 in (9.7 cm)

- **Width:** 8.9 in (22.6 cm)

- **Depth:** 10.8 in (27.4 cm)

- **Weight:** 4.5 lb (2.0 kg)

## Accessories

### Primary battery:

- **Type:** Lithium manganese dioxide (Li/MnO<sub>2</sub>), 12.0V, 4.7 amp-hours.

- **Capacity (at 20°C):** Will provide 166 200 joule shocks (with one minute of CPR between shocks) or 103 360 joules shocks (with one minute of CPR between shocks) or 800 minutes of operating time.

- **Standby life (assuming daily tests only):**

A new battery provides device power for 4 years if installed in device that is not used.

- **Replace battery indication:** At least 6 shocks and 30 minutes of operating time remain when first indicated.

- **Weight:** 0.7 lb (0.3 kg)

### Electrode pads:

- **Pads:** Can be used on both adult and pediatric patients.

- **Pads packaging:** User intuitive, rapid access electrodes.

- **Pads replacement:** Replace every 4 years or after each patient use.

## Data storage

**Memory type:** Internal digital memory (flash RAM).

**ECG storage:** Minimum 60 minutes of ECG stored for two patient episodes.

## Communications

**Communications:** USB, Wireless 802.11 b/g/n data transfer to LIFELINKcentral™ AED program manager or LIFENET® System.

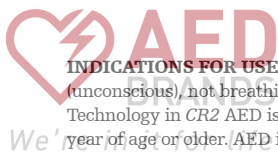
# Let's save more lives with the LIFEPAK AED response system

We are working on a future where better technology enables better outcomes—and more lives saved. When SCA strikes, you want the best for your employees, customers, students and the public. Designed by the trusted industry leader in emergency response technology, the LIFEPAK CR2 defibrillator with LIFELINKcentral AED program manager gives users the solution they need to effectively respond to an SCA emergency—all while maintaining its own readiness through self-monitoring, making AED program management nearly effortless.

## References

- 1 Graham R, McCoy M, Schultz A. Strategies to Improve Cardiac Arrest Survival, A Time to Act. Institute of Medicine Report, 2015.
- 2 Christenson J, Andrusiek D, Everson-Stewart S, et al. Chest compression fraction determines survival in patients with out-of-hospital ventricular fibrillation. *Circulation*. 2009;120:1241-1247.
- 3 Berg RA, Hemphill R, Abella BS, Et al. Part 5: Adult Basic Life Support: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*. 2010;122[suppl 3]:S694.
- 4 Brouwer T, Walker R, Chapman F, Koster, R. Association Between Chest Compression Interruptions and Clinical Outcomes of Ventricular Fibrillation Out-of-Hospital Cardiac Arrest. *Circulation*. 2015;132:1030-1037.
- 5 Physio-Control Internal Semi-Automatic AED Comparison Usability Study, August 2016.





## BRIEF SUMMARY OF INDICATIONS AND IMPORTANT SAFETY INFORMATION

**INDICATIONS FOR USE:** LIFEPAK CR2 AED is indicated for use on patients 1 year of age or older in cardiopulmonary arrest. The patient must be unresponsive (unconscious), not breathing normally, and showing no signs of circulation (for example, no pulse, no coughing, or no movement). cprCOACH™ Feedback Technology in CR2 AED is indicated for use on cardiopulmonary arrest patients and provides CPR guidance in accordance with AHA Guidelines for patients 1 year of age or older. AED is intended for use by personnel who have been trained in its operation. Users should have received training in basic life support/AED, advanced life support, or a physician-authorized emergency medical response training program. The LIFEPAK CR2 Defibrillator is indicated to be used with the QUIK-STEP™ Pacing/ECG Defibrillation Electrodes and the LIFEPAK CR2 Lithium Battery.

**CONTRAINDICATIONS:** LIFEPAK CR2 AED is not indicated for patients who are conscious and responsive.

**DANGER:** Do not use LIFEPAK CR2 in presence of flammable gases or anesthetics.

**WARNINGS:** LIFEPAK CR2 AED delivers up to 360 joules of electrical energy. Unless used properly by following AED's visual and audio prompts, this electrical energy may cause serious injury or death. • When instructed EVERYONE CLEAR, do not touch AED, patient, electrode pads or any material/fluid in contact with patient. Make sure no one is touching patient when AED shocks patient. • Do not immerse AED in water or other fluids. Avoid spilling fluids on AED or its accessories. • Do not store in presence of flammable gases, anesthetics or in direct contact with flammable material. Use care when operating close to oxygen sources. Turn off gas source or move it away from patient during defibrillation. • Equipment operating in close proximity may emit strong electromagnetic interference (EMI) or radio frequency interference (RFI) which could affect performance of AED. • Keep AED away from magnetic resonance imaging (MRI) equipment as it is unsafe. • AED should not be used adjacent to or stacked with other equipment. • Do not touch patient and USB connector on back of AED simultaneously. • Replace battery immediately when AED indicates battery is low. • Use only accessories specified by Physio-Control or Stryker. Using other manufacturers' accessories may cause AED to perform improperly and may invalidate safety agency certification. Contact authorized service personnel for repair. • QUIK-STEP electrode pads: Place pads so they adhere to skin completely. • Do not allow pads to touch each other or any material on patient's chest. • Do not use damaged, expired, or dried-out pads. Dried out or damaged pads may cause electrical arcing and skin burns during defibrillation. • Do not pull red handle to open electrodes until immediately before use. • QUIK-STEP electrodes provided with CR2 are not compatible with LIFEPAK 500 device. Emergency medical personnel should not connect these electrodes to LIFEPAK 500 device.

**CAUTIONS:** Damaged batteries may leak and cause personal injury or equipment damage; handle with extreme care. • Do not open device lid unnecessarily as this will reduce internal battery power.

**POTENTIAL ADVERSE EFFECTS (for example, complications):** Failure to identify shockable arrhythmia • Failure to deliver a defibrillation shock in presence of ventricular fibrillation (VF) or pulseless ventricular tachycardia, which may result in death or permanent injury • Inappropriate energy delivery which could cause failed defibrillation or post-shock dysfunction • Myocardial damage • Incorrectly shocking a pulse-sustaining rhythm and inducing VF or cardiac arrest • Bystander shock from patient contact during defibrillation shock • Interaction with pacemakers • Skin burns around electrode pad placement area • Allergic dermatitis due to sensitivity to materials used in electrode construction • Minor skin rash • Fire hazard in presence of high oxygen concentration or flammable anesthetic agents • EMI from AED impacting other devices especially during charge and energy transfers.

U.S. Federal law restricts this device to sale by or on the order of a physician.

Please consult Operating Instructions at [www.physio-control.com](http://www.physio-control.com) or call 800.442.1142 for complete list of indications, contraindications, warnings, cautions, potential adverse events, safety and effectiveness data, instructions for use and other important information.

If you purchased your LIFEPAK CR2 defibrillator from an authorized Stryker distributor or reseller, this distributor or reseller will have access to your LIFELINKcentral AED program manager account and may receive notifications prompted by the LIFEPAK CR2 defibrillator. Please note that this setting to notify your distributor or reseller can be disabled at ANY time: if you wish to disable this setting, please send a request to Stryker customer support to self-manage your site without notifications to your distributor or reseller.

**All claims valid as of December 2018.**

**Physio-Control is now part of Stryker.**

**For further information, please contact Stryker at 800.442.1142 or visit our website at [www.strykeremergencycare.com](http://www.strykeremergencycare.com)**

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