


**LIFEPAK CR<sup>®</sup> Plus** DEFIBRILLATOR



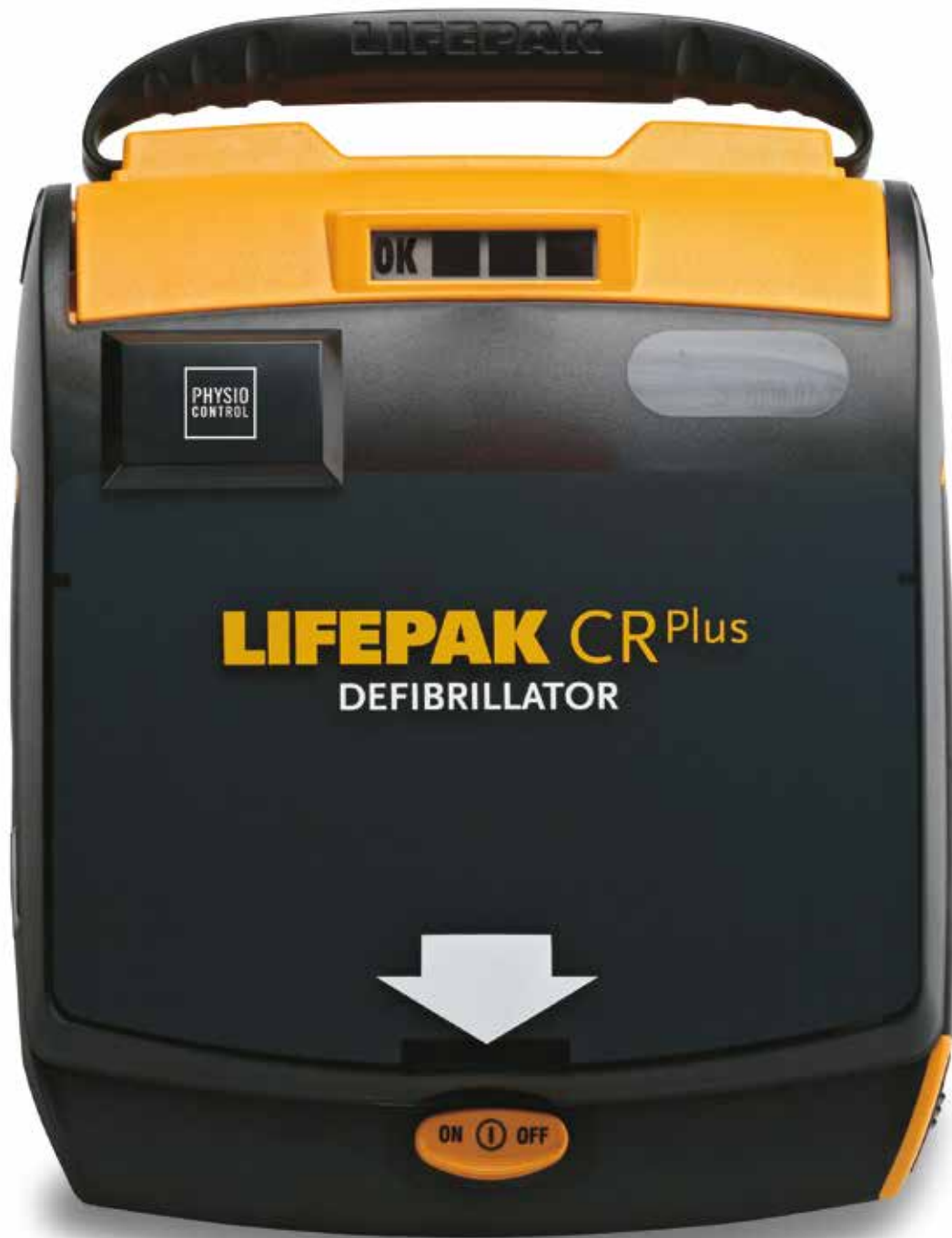
This is the face  
of confidence.

# This is why.

At Physio-Control, our reputation—and our mission—is built on confidence. The confidence that comes from over 50 years of innovation, a steadfast commitment to quality, and a position as the global leader in defibrillation. The confidence that comes from manufacturing the lifesaving equipment of choice for more EMS and hospital units around the world than any other brand. The confidence that comes from knowing that the LIFEPAK CR Plus defibrillator in your office, the airport, or your child's school can simply, safely, and effectively help someone save a life.

## **LIFEPAK CR<sup>®</sup> Plus** DEFIBRILLATOR

Featuring the same advanced technology trusted by emergency medical professionals—yet simple to use—the LIFEPAK CR Plus automated external defibrillator (AED) is designed specifically for the first person to respond to a victim of sudden cardiac arrest (SCA). Unlike AEDs with complex prompts and limited energy for defibrillation, the fully automatic LIFEPAK CR Plus AED combines an easy two-step operation, just the right level of guidance, and the capability to escalate to 360 joules when needed.



# Confidence is knowing you will be ready.

“I figured if I could find AEDs in airports and shopping plazas, then the risk must be low because average folks have to be able to use these things. And when I looked into program maintenance before I brought the *CR Plus* into our organization, I found out they were zero maintenance except for changing out the batteries and pads.”

— **David Lauer, Manager**  
**Environmental Health & Safety, B. Braun**

## **A safer place to live, work, and play.**

Whether its victims are young or old, at the office or in class, worshipping, exercising or just walking to an airport gate, sudden cardiac arrest (SCA) knows no boundaries. But no matter where or when it strikes, early use of a defibrillator can help save lives. In fact, it's proven to be the only effective treatment for ventricular fibrillation (VF), a potentially fatal heart rhythm associated with SCA. With the simple, powerful, Guidelines-consistent *CR Plus* and an emergency response plan, you'll be creating a safer environment.<sup>1</sup>

## **At hand. At the ready.**

Having an AED in place is no comfort if you can't be sure it will work when it's needed. The LIFEPAK CR Plus AED conducts weekly and extended monthly automatic self-tests, initialization tests each time it is powered on, and a series of concurrent tests throughout the time the device is in operation. A visible Readiness Display with four clear indicators allows you—and anyone who uses it—

to know it's ready to do its job. And unlike AEDs that run off of external batteries that degrade over time, the SafeGuard Power System—unique in the industry—offers a dual layer of security as the CHARGE-PAK™ battery charger keeps the robust internal battery at its optimum level during the life of the unit.

## **It's never been simpler to be prepared.**

The LIFEPAK CR Plus AED is easy for you to manage. The battery charger and electrodes have a synchronized replacement cycle that makes your maintenance program efficient and affordable. Of course, you hope the LIFEPAK CR Plus AED will never be needed in a lifesaving situation, but when it is, you can be confident that your staff is as ready as the AED. AED users should be trained in CPR and use of the AED. We offer a variety of training options to continually educate your response team, from onsite instruction and a LIFEPAK CR Plus AED training unit to online AED/CPR refresher training, videos, and quick reference cards.

<sup>1</sup> The LIFEPAK CR Plus AED provides defibrillation and CPR guidance as recommended by the current American Heart Association Guidelines.





# Confidence is knowing it will be safe to use.

“Everyone was really nervous and upset. Once our nurse put the pads on the way the *CR Plus* prompted us, we were all calmed by it doing just what we were trained it would do. We didn’t have to choose what to do—it won’t shock anyone who doesn’t need it.”

— **Debbie Harrelson, Responder**  
*Principal, Lovelady Elementary/Middle School*

## **An AED for all of us.**

Chances are you’re not an EMS technician. Not a surgeon or a lifeguard or a firefighter. Yet, with the right resources at hand, each of us has the power to save a human life—the life of a friend, colleague, student, or a passerby with sudden cardiac arrest. Although not everyone can be saved, studies show that early defibrillation can dramatically improve survival rates. Simple, effective, and at the ready, the LIFEPAK CR Plus AED provides that critical resource and the guidance to use it whenever necessary. It’s there for you and for them.

## **Saving a life. Not endangering one.**

Can an AED shock a victim who doesn’t need it? Will it shock me while I try to help? The unknown can be frightening, but with the LIFEPAK CR Plus AED, that fear can become confidence. The *CR Plus* is designed to deliver a shock only if it determines a heart needs it. The device then communicates clear, calm, step-by-step instructions—delivered via our ClearVoice™ technology—that let responders know without question when a victim is about to be shocked.

## **How does an AED work?**

*During sudden cardiac arrest, the normally organized electrical impulses that initiate cardiac contraction (heartbeats) discharge chaotically, and the heart muscle twitches spasmodically. An AED applies a brief pulse of electrical current to a heart, allowing the heart’s normal electrical system to resume control.*

## **We stand by our products.**

*At Physio-Control, we stand by the quality of our lifesaving products. We even offer an 8-year warranty on the LIFEPAK CR Plus AED—the longest in the industry.*









# Confidence is a simple, two-step process.

Two steps: turning the device on and applying the electrode pads to the victim. That's all it may take to make the difference between death from sudden cardiac arrest and a better chance for survival. The fully automatic *CR Plus* then takes over, giving ClearVoice prompts and delivering the shock—up to an industry-leading 360 joules—without anyone pushing a button. A recent study shows that safety is not compromised when untrained rescuers use a fully automatic AED compared to a semi-automatic AED.<sup>2</sup>

**Step 1:** Turn it on

**Step 2:** Apply the electrode pads



<sup>2</sup> T. Hosmans, I. Maquoi, C. Vogels, A. Courtois, J. Micheels, M. Lamy, K. Monsieurs. *Resuscitation*. "Safety of fully automatic external defibrillation by untrained lay rescuers in the presence of a bystander." Volume 77, Issue 2, Pages 216–219, 2008.

# Confidence is knowing it's the brand the pros use.

“Anytime anyone in the community is using an AED it’s great. When you have a compatible brand—where the AED and monitors match—it’s a huge time save. We just unplugged their *CR Plus* and plugged their pads right into our LIFEPAK 12. It was a seamless integration.”

— **Mark Mankins, Professional Responder**  
*EMS Coordinator, Worthington Ohio Fire Department*

## **Losing time can mean losing lives.**

There is no time to spare when responding to a victim of SCA. Even with successful defibrillation, precious minutes often have passed by the time emergency medical help arrives, and transferring to EMS or fire department equipment can take even more time. But with the compatibility of the LIFEPAK CR Plus AED, time is saved. More EMS units around the world use LIFEPAK equipment than any other brand, and the electrodes on the *CR Plus* are fully compatible with all other LIFEPAK defibrillators and monitors. That means a faster transfer and more time spent on lifesaving than equipment.

## **Familiar. Compatible. Trusted.**

Professional responders have chosen high-quality, rigorously tested solutions from Physio-Control for decades. For today’s EMS units and fire departments, standardizing on LIFEPAK products from first-on-scene through handoff to professional care helps minimize delays in treatment, but it also ensures continuous collection of patient data that local systems can easily download post-event.



# Confidence is maximizing chances for survival.

“In the past two years the machines have successfully saved the lives of two members. Due to quick thinking and training the AED was on-site within minutes. By the time the emergency services arrived, the member had regained consciousness. After two successful saves, I am convinced that we made the right decision and that we made the right choice of machines. What price can you put on a life?”

— **Terry Jermy**, General Manager  
**Fitzwilliam Lawn Tennis Club**  
**Ireland**

## Simple enough. Strong enough.

If your life were at risk from sudden cardiac arrest—if you needed the help of a colleague, friend, or passerby—what lifesaving equipment would you want nearby? Certainly an AED that is easy to use by a non-professional responder. But what about an AED that could escalate in power if the standard shock level was ineffective at restarting your heart? The LIFEPAK CR Plus AED has the capability to deliver a shock at 360 joules, the highest available power level in the industry.

## Why 360 joules?

A joule (J) is a unit of energy used as the measurement of shock strength provided by an AED. An initial shock from the LIFEPAK CR Plus AED is delivered at 200 joules (200 J), which has been shown to be effective at defibrillating the heart of a

majority of sudden cardiac arrest victims. However, some patients are more difficult to defibrillate than others, and an ineffective shock can leave them in VF longer and increase costly interruptions in CPR. Physio-Control only offers AEDs with a full range of energy, with default escalating settings of 200 J, 300 J, and 360 J. A recent study has shown a statistically significant benefit for higher escalating shocks compared to fixed lower-energy shocks in patients with VF who required more than one defibrillation shock.<sup>3</sup> In addition, the American Heart Association has provided guidance on the importance of coordinating good CPR with defibrillation to minimize interruptions in chest compressions.<sup>4</sup>

Simply put, we believe the capacity for 360 joules gives patients a better opportunity for a better outcome.

<sup>3</sup> IG. Stiell, RG. Walker, LP. Nesbitt, et al. *Circulation* 2007. “Biphasic trial: A randomized comparison of fixed lower versus escalating higher energy levels for defibrillation in out-of-hospital cardiac arrest.” 115:1511-1517.

<sup>4</sup> The LIFEPAK CR Plus AED provides defibrillation and CPR guidance as recommended by the current American Heart Association Guidelines.





# Confidence

is lifesaving made simple.

## **LIFEPAK CR<sup>®</sup> Plus** DEFIBRILLATOR

Simple to use. Simple to manage. Simple to transfer care to professionals. And effective in saving the life of a victim of sudden cardiac arrest.



Sudden cardiac arrest is a leading cause of death in Europe, with approximately 275,000 arrests each year.<sup>5</sup> Many of these fatalities occur in the workplace.<sup>6</sup> If the presence of AEDs can save even some of these precious lives, then the choice to implement them is clear. And with the advantages of the LIFEPAK CR Plus AED, the choice of which AED to implement becomes even clearer.

The time is now. The choice is the LIFEPAK CR Plus AED from Physio-Control.

**For further information please contact your local Physio-Control representative or visit our website at [www.physio-control.com](http://www.physio-control.com)**

<sup>5</sup> Atwood C, Eisenberg MS, Herlitz J, Rea TD. Incidence of EMS-treated out-of-hospital cardiac arrest in Europe. *Resuscitation* 2005;67:75-80.

<sup>6</sup> www.OSHA.gov; Technical Information Bulletin (TIB) 01-12-17.





# LIFEPAK CR Plus AED

at a glance





## Defibrillator

**Waveform:** Biphasic truncated exponential, with voltage and current duration compensation for patient impedance.\*

**Output Energy Sequence:** Multiple levels, configurable from 150 joules to 360 joules (200 joules min for Japan). Factory default settings of 200J, 300J, 360J.

**Output Energy Accuracy:** ±10% into 50 ohms, ±15% into 25 to 100 ohms.

**Shock Advisory System:** An ECG analysis system that advises whether a shock is appropriate; meets rhythm recognition criteria specified in DF39.

The device charges for shock only when the Shock Advisory System advises defibrillation.

### Device Capacity:

**Typical:** Thirty (30) full discharges or 210 minutes of "on time" with a fully charged device.

**Minimum:** Twenty (20) full discharges or 140 minutes of "on time" with a fully charged device.


**Shock Charge Time:** Charge times with a fully charged device: 200 joules in less than 9 seconds, 360 joules in less than 15 seconds.

**System Recharge Times:** Recharge times with a fully discharged device: Able to deliver 6 shocks or provide 42 minutes of operating time after 24 hours of recharge time and 20 shocks or 140 minutes of operating time after 72 hours of recharge time with a new CHARGE-PAK at temperatures above 15° C (59° F).

### Controls:

Lid Release/ON-OFF—Controls device power.

SHOCK button (semi-automatic version)—delivers defibrillation energy. After electrodes are attached to a patient, the fully automatic version of the device delivers a shock, if appropriate, not requiring operator intervention.

**Electrical Protection:** Input protected against high voltage defibrillator pulses per IEC60601-1/EN60601-1. 

**Safety Classification:** Internally powered equipment. IEC60601-1/EN60601-1.

## User Interface

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

**Readiness Display:** The readiness display shows the device status.

**OK Indicator:** Shows "OK" when the last self-test was completed successfully. When the "OK" indicator is visible, all other indicators are not visible. The "OK" indicator is not displayed during device operation.

**CHARGE-PAK Indicator:** When displayed, replace the CHARGE-PAK™ battery charger.

**Attention Indicator:** When first displayed, at least six (6) discharges or 42 minutes of operating time remain.

**Service Indicator:** Service required when displayed

## Environmental

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

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

**Storage Temperature:** -40° to +70° C (-40° to +158° F) with CHARGE-PAK and electrodes, maximum exposure time limited to one week.

**Atmospheric Pressure:** 760 mmHg to 429 mmHg, 0 to 15,000 feet above sea level.

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

**Water Resistance:** IEC60529/EN60529 IPX4 "Splash proof" with electrodes connected, CHARGE-PAK installed.

**Shock:** MIL-STD-810E, Method 516.4, Procedure 1, (40g, 6-9 ms pulse, 1/8 sine each axis).

**Vibration:** MIL-STD-810E, Method 514.4, Helicopter - category 6 (3.75 Grms) and Ground Mobile - category 8 (2.85 Grm)

## Physical Characteristics

**Height:** 10.7 cm (4.2 in).

**Width:** 20.3 cm (8.0 in).

**Depth:** 24.1 cm (9.5 in), excluding handle.

**Weight:** 2.0 kg (4.5 lb) with CHARGE-PAK and electrodes.

## Default Settings

**Energy Sequence:** Energy sequence is set to 200J, 300J, 360J.

**Motion Detection:** The motion detection system is set to on during analysis.

**Energy Protocol:** The energy protocol is set to increase energy only after a lower energy shock was unsuccessful.

**Stack Shocks:** Stack shocks option is set to off.

**Turn-On Prompt:** The turn-on prompt is set to provide voice prompts upon power on.

**CPR Time:** The CPR Time is set to 120 seconds.

**Voice Prompt Volume:** The voice prompt volume is set to high.

## Accessories

### CHARGE-PAK Battery Charger

**Type:** Li/SO<sub>2</sub>Cl<sub>2</sub> Lithium Sulfuryl Chloride, 11.7V, 1.4 amp-hours.

**Replacement:** Replace the CHARGE-PAK battery charger and QUIK-PAK™ electrodes packet after using the defibrillator, if the CHARGE-PAK symbol appears in the readiness display or when the Use By date is reached (typically 2 years).

**Weight:** 80.5 grams (0.18 lb).

### QUIK-PAK Electrode Pads

**Pads:** ECG is received from disposable defibrillation electrodes, standard placement (anterior-lateral).

**Pads Packaging:** User intuitive, rapid release QUIK-PAK electrodes allow the electrode pads to be preconnected to the device and protected under a top cover.

**Pads Replacement:** Replace every two (2) years.

**Infant/Child Reduced Energy Defibrillation Electrodes:** For use on infants and children less than 8 years of age or less than 55 lbs (25 kg).

## Data Storage

**Memory Type:** Internal digital memory.

**ECG Storage:** Dual patient data storage. Minimum 20 minutes of ECG stored for the current patient, summarized data stored for the previous patient.

### Report Types:

- Continuous ECG – A continuous patient ECG report.
- Continuous Summary report – A summary of critical resuscitation events and ECG waveform segments associated with these events.
- Event Log report – A report of time stamped markers, which reflect operator and device activity.
- Test Log report – A device self-test activity report.

**Capacity:** Minimum 200 time-stamped event log markers.

**Communications:** Wireless transfer to a personal computer.

**Data Review:** Physio-Control provides an array of tools to meet customer needs for data viewing and analysis.

\* The specifications apply from 25 to 200 ohms. Voltage compensation is limited to the voltage that would result in delivery of 360 joules into 50 ohms.

All specifications are at 20° C unless otherwise stated.

# The Physio-Control family of products

## Defibrillators/Monitors

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### **LIFEPAK CR® Plus Automated External Defibrillator**

Featuring the same advanced technology trusted by emergency medical professionals—yet simple to use—the fully-automatic LIFEPAK CR Plus AED is designed specifically for the first person to respond to a victim of sudden cardiac arrest.

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### **LIFEPAK® 1000 Defibrillator**

The LIFEPAK 1000 Defibrillator is a powerful and compact device designed to treat cardiac arrest patients and provide continuous cardiac monitoring capabilities. Built-in flexibility allows the 1000 to be programmed for use by first responders or professionals and enables care providers to change protocols as standards of care evolve.

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### **LIFEPAK® 15 Monitor/Defibrillator**

The LIFEPAK 15 monitor/defibrillator is the new standard in emergency care for ALS teams who want the most clinically innovative, operationally effective, and LIFEPAK TOUGH device available today.

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### **LIFEPAK® 20e Defibrillator/Monitor**

Clinically advanced and packed with power, the LIFEPAK 20e defibrillator/monitor is highly intuitive for first responders, and also skillfully combines AED function with manual capability so that ACLS-trained clinicians can quickly and easily deliver advanced therapeutic care.

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## CPR Assistance

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### **LUCAS® Chest Compression System**

Designed to provide effective, consistent, and uninterrupted compressions according to AHA Guidelines, LUCAS can be used on adult patients in out-of-hospital and hospital settings.

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## Information Management

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### **LIFENET® System**

The LIFENET System provides EMS and hospital care teams with reliable, quick access to clinical information through a secure, web-based platform, helping to improve patient care flow and operational efficiency.

### **CODE-STAT™ 9.0 Data Review Software**

CODE-STAT 9.0 data review software is a retrospective analysis tool that provides easy access to data, reports, and post-event review.

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# LIFEPAK CR Plus AED

Lifesaving made simple.™

[www.physio-control.com](http://www.physio-control.com)

For further information please contact your local Physio-Control representative or visit our website at [www.physio-control.com](http://www.physio-control.com).

All information including comparative statements is valid as of October 2012.

The quotes in this brochure come from actual LIFEPAK CR Plus AED customers, however, the pictured people are not the actual customers.



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