Make Lifesaving Simple

With over 50 years of innovation, a steadfast commitment to quality and a position as the global leader in defibrillation, Physio-Control brings you the LIFEPAK CR Plus automated external defibrillator. The CR Plus is designed specifically for the first person to respond to a victim of sudden cardiac arrest and incorporates the same trusted technology used by more EMS and hospital units around the world than any other brand.

Although not everyone can be saved from sudden cardiac arrest, studies show that early defibrillation can dramatically improve survival rates.

Simple to Use

- Simple to turn on
- Simple to find, remove and place electrodes correctly
- Simple to deliver therapy—no shock button to push
- Simple to increase the chance for survival by automatically escalating energy up to 360 joules if needed*  

Simple to Own

- The CR Plus comes ready to use: Initial purchase includes carry case, extra electrodes, CHARGE-PAK™ battery charger and Ambu® Res-Cue Mask® Kit
- Lowest total cost of ongoing ownership in the AED industry
- Simple transition to EMS teams who also use LIFEPAK products

Simple to Maintain

- One of the longest warranties in the industry at 8 years
- Synchronized CHARGE-PAK battery charger and electrode replacement cycle

Simply put...

The LIFEPAK CR Plus automated external defibrillator from Physio-Control is the effective, safe and affordable choice.

AED users should be trained in CPR and the use of an AED. LIFEPAK AEDs require a prescription in the U.S. Please consult your physician.
SPECIFICATIONS

DEFFRILLATOR

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.


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

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). Device operation.

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


Shock: MIL-STD-810E, Method 514.4, 1, (40g, 6-9 ms pulse, 1/2 sine each axis).

Vibration: MIL-STD-810E, Method 514.4, Helicopter - category 6 (5.75 Grms) and Ground Mobile - category 8 (2.85 Grms).

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.

ACCESORIES

CHARGE-PAK Battery Charger
Type: Li/SO2/C12 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 User 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 (25kg).

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.

All claims valid as of October 2012.
SafeGuard™ Power System

The unmatched technology of the SafeGuard Power System in the LIFEPAK CR® Plus AED was designed to make device maintenance efficient, reliable and affordable.

How it Works

Many AEDs are powered by external batteries that lose capacity over time. The SafeGuard Power System offers a dual layer of security inside the CR Plus as the internal battery is kept to its optimal power level via the CHARGE-PAK™ battery charger.

Benefits of the SafeGuard Power System

• The CR Plus comes with an internal, rechargeable battery that lasts the life of the product.
• The CHARGE-PAK battery charger and electrode replacement cycles are synchronized to expire on the same date, minimizing maintenance management.
• The CHARGE-PAK battery charger and electrode replacement kit are the lowest cost of any on the market.

All claims valid as of December 2011.
Time to First Shock: The LIFEPAK CR Plus AED Advantage

Designed to reduce delays in treatment

Fully automatic AEDs help a rescuer deliver lifesaving therapy safely and quickly. But that is only part of the story. An AED must provide you with the easiest options for turning the device on, correctly placing the electrodes and delivering a shock. The LIFEPAK CR Plus AED is designed to make these three crucial steps quick and easy for all rescuers.

1. **Easy to turn on**
   The simple white arrow is designed to point users to the “ON” button, directing the rescuer to focus and push the button, automatically opening the lid and powering up the device.

2. **Easy to find and place electrodes**
   After powering the device on, the user is quickly prompted to pull the red handle away from the device which opens the electrode pouch.

3. **Easy to deliver a shock**
   Fully automatic AEDs have been shown to be safer than semi-automatic when used in the presence of bystanders. A fully automatic AED helps rescuers to commit fewer errors than a semi-automatic AED while eliminating the stressful step of physically pushing the shock button.

**Time to Shock: LIFEPAK CR Plus AED vs. ZOLL® AED Plus**

The CR Plus is designed to provide you with the easiest options for turning the device on, correctly placing electrodes and delivering a shock. In the study summarized below, only 50% of rescuers using the ZOLL AED Plus were successful at placing the electrodes, one of the crucial steps that CR Plus users were 100% successful in completing.

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<thead>
<tr>
<th>Time to Shock (minutes)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td><strong>Time</strong></td>
<td>1:33</td>
<td>3:30</td>
<td></td>
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<tr>
<td>LIFEPAK CR Plus AED</td>
<td>93 sec</td>
<td>210 sec</td>
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<td></td>
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<tr>
<td>ZOLL AED Plus</td>
<td>93 sec</td>
<td>210 sec</td>
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<tr>
<td><strong>Successful Completion</strong></td>
<td>100%</td>
<td>100%</td>
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<td>Data not available</td>
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**Saving two minutes in time to first shock could mean up to 20% increase in chance of survival.**
LIFEPAK AEDs require a prescription in the U.S. Please consult your physician.
AED users should be trained in CPR and in the use of the AED.

For further information, please contact Physio-Control at 800.442.1142 (U.S.), 800.895.5896 (Canada) or visit our website at www.physio-control.com.
Improving Shock Success

Each year, more than 300,000 people die from Sudden Cardiac Arrest (SCA). More people die from SCA than breast cancer, lung cancer and AIDS combined. Unfortunately, those who experience a witnessed SCA have a very low chance of survival—the national average is about 5%. Early defibrillation can play a critical role in survival. Shock success during this stage can be influenced by a number of important factors, including improving time to first shock, reducing CPR pauses, and the availability of higher levels of energy.

Improving Time to First Shock

Although not everyone can be saved from sudden cardiac arrest, studies show that early defibrillation can dramatically improve survival rates. Early defibrillation combined with CPR can improve survival rates to as high as 74% when defibrillation is provided within three minutes of collapse. For every minute that elapses between sudden cardiac arrest and defibrillation, the chance of survival decreases 7 to 10%.

Many factors influence time to first shock, including determining an AED is needed, retrieving the AED, turning the AED on, applying the pads, and then delivering a shock. Determining an AED is needed and retrieving an AED can vary based on the event and location. However, the time between device retrieval and first shock is largely influenced by the AED used.

Usability studies have shown that AEDs differ dramatically in their ease of use and subsequent time to first shock. In a study of untrained bystanders, Dr. Andre et al. found the LIFEPAK CR® Plus AED had the shortest average time to shock of four leading AEDs studied. Time to shock was defined as the time rescuers entered the room until the time a shock was delivered. Other AEDs had considerably longer average time to shock intervals.

<table>
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<tr>
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<th>Time to Shock (sec)</th>
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<tbody>
<tr>
<td>Physio-Control®</td>
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<tr>
<td>LIFEPAK CR Plus AED</td>
<td>93</td>
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<tr>
<td>Philips®</td>
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<tr>
<td>Heartstart Onsite</td>
<td>99</td>
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<tr>
<td>Cardiac Science™</td>
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<tr>
<td>PowerHeart G3 Plus</td>
<td>132</td>
</tr>
<tr>
<td>ZOLL®</td>
<td></td>
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<tr>
<td>AED Plus</td>
<td>210</td>
</tr>
</tbody>
</table>

The goal of public access defibrillation (PAD) programs is to reduce time between onset of SCA and shock delivery. A general rule of thumb for PAD programs is to place AEDs within three minutes of locations where cardiac arrests are likely to occur. Assuming it takes three minutes to retrieve an AED, we can predict the following time to first shock using the data from the Andre study.

Reducing CPR Pauses

Minimizing pre-shock pauses in CPR improves the chances of shock success and patient survival. There are a number of AED design features that can influence pre-shock CPR pauses, including:

- Reducing the time required for analysis and charging.
- Eliminating the need to push the shock button. The LIFEPAK CR Plus AED is one of the few fully automatic AEDs available. A fully automatic AED will give a shock automatically, if needed, without the rescuer having to push a button to deliver that shock. This type of AED is designed to help responders who may hesitate in cardiac arrest emergencies.
- Enabling a pre-shock CPR interval. The LIFEPAK® 1000 Defibrillator is the only AED available that offers unique CPRMAX™ technology, allowing you to provide compressions until the moment of shock.

Availability of Higher Energy Levels

Clinical data suggests that higher energy levels are associated with higher shock success rates. 360 joule (J) biphasic defibrillators have successfully resuscitated patients that were not resuscitated by
other defibrillators with energy limited to 200J. The FDA is investigating 14 reports of events in which a 200J biphasic defibrillator was ineffective and a subsequent shock from a different 360J biphasic defibrillator resulted in immediate defibrillation/cardioversion. All Physio-Control defibrillators deliver a full range of energy up to 360J — the most energy available in the industry today.

The End Result

The LIFEPAK CR Plus AED compares favorably against the competition on a number of key features associated with improved shock success and higher survival, including time to first shock, reduced CPR pauses, and availability of a higher level of energy. Investing in an AED program is a commitment to protect the lives of those in your community. Why not invest in the best?

REFERENCES

5. 2010 American Heart Association Guidelines for CPR and ECC, Volume 122, Issue 18_suppl_3; November 2, 2010; S641.

AED users should be trained in CPR and use of the AED. LIFEPAK AEDs require a prescription. Please consult your physician. All information including comparative statements are valid as of March 2013.

For further information, please contact Physio-Control at 800.442.1142 (U.S.), 800.895.5896 (Canada) or visit our website at www.physio-control.com
Water Protection Test

All Automatic External Defibrillators (AEDs) have an IEC 529 Ingress Protection (IP) rating for water protection. The more vigorous the testing method, the higher the rating earned and the more durable the product in wet conditions. Below is a comparison between the water protection rating method for Philips HeartStart OnSite and the Physio-Control LIFEPAK CR Plus AED.

Philips® HeartStart® OnSite Defibrillator, IPX1

IPX1 Test Method

Water is dripped on the top of the defibrillator for 10 minutes to achieve IPX1 rating for Philips HeartStart OnSite AED.

- Only the upper areas of the device are exposed to vertical falling drops of water.
- Parts may be susceptible to water penetration from different angles.
- IPX1 is generally accepted as the minimum standard for defibrillators used indoors.

Physio-Control® LIFEPAK CR® Plus AED, IPX4

IPX4 Test Method

Water is sprayed in all directions for five minutes to achieve IPX4 rating for LIFEPAK CR Plus AED.

- Much more stringent and demanding than IPX1.
- All areas from top to bottom are completely exposed to water penetration from all angles.
- Simulates being in a heavy, driving rainstorm.

* Philips HeartStart OnSite Defibrillator brochure dated Jan 2007, posted on website as of March 2010
Although not everyone can be saved, studies show that early defibrillation can dramatically improve survival rates.

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