LIFEPAK CR® Plus Defibrillator

The LIFEPAK CR Plus defibrillator is designed for safe and simple use by the first person at the scene of a sudden cardiac arrest. An internal computer analyzes the heart rhythm and guides the user step-by-step with clear, calm voice prompts. The *CR Plus* is a fully-automated device designed to automatically deliver a shock only if it determines one is needed.

QUIK-PAK™ electrodes are easy to use and connect with all Medtronic defibrillators, which allows for smooth transition of the patient from the scene of a cardiac arrest to the ambulance and into the hospital.

Infant/Child Reduced Energy Defibrillation Electrodes make therapy available to even the youngest victims of sudden cardiac arrest.

The rugged design and ease of use make the *CR Plus* an excellent choice where the first responders will be minimally trained; the advanced technology and features make it the device of choice for many professional responders. The *CR Plus* uses the latest ADAPTIV™ biphasic technology, which automatically adjusts the shock waveform based on the person's need. The device provides additional shocks of up to 360 joules if the heart doesn't respond to the first shock.

The lightweight, cost-effective power system requires little maintenance and is easy and quick to recharge. The battery system uses an easy-to-change CHARGE-PAK™ battery charger; replacement dates for the battery charger and electrodes are synchronized, cutting required maintenance efforts in half.

The device stores ECG data for wireless transmission through an infrared IrDA port to a personal computer (PC) which eliminates the need for data cards. User-friendly, PC-based software allows easy download, annotation and review of both ECG and event data.

- **AHA/ERC Guidelines 2005 consistent**
- **Fully automatic configuration allows user to focus on patient**
- **Clear, calm voice guides user one step at a time**
- **Highly visible readiness indicator**
- **Infant/Child Electrode capability**
- **Lightweight, compact and durable**
- **Simplified maintenance**
- **Compatible with EMS and hospital technology**
- **Soft carry case and extra set of electrodes included**

DEFIBRILLATOR

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

Output Energy Sequence: Multiple levels, user configurable from 150J to 360J (<200J not available in all countries).

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 AAMI DF39.

The device allows for a defibrillation shock only if 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 six (6) shocks or provide 42 minutes of operating time after 24 hours of recharge 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. After electrodes are attached to a patient, the device is designed to deliver 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 instructions, audible tones and graphical 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 and electrode pads.

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 charger 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 and CHARGE-PAK charger installed.

Shock: MIL-STD-810E, Method 516.4, Procedure 1, (40g, 6-9 ms pulse, 1/2 sine each axis).

Vibration: MIL-STD-810E, Method 514.4, Helicopter – category 6 (3.75 g rms) and Ground Mobile – category 8 (2.85 g rms).

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 lbs) with CHARGE-PAK and electrodes

SETUP OPTIONS

AHA/ERC 2005 Guidelines Consistent: Setup options support the latest guidelines released by the American Heart Association and European Resuscitation Council.

Energy Sequence: Energy settings, 150J to 360J (<200J not available in all countries).

Energy Protocol: Increase energy after every shock or only after lower energy shock was unsuccessful.

Stack Shocks: Allows a single shock or three consecutive shocks protocol.

Turn on prompt: "Call for help now" voice prompt option.

Voice Prompt Volume: Medium or high volume options.

CPR Time: 15-180 seconds; can be set to match local protocol.

Pulse Check: Can be set to Never, after every no shock decision, after second no shock or Always.

Pulse Prompt: Per customer order; Check Pulse, Check Breathing or Check Circulation.

Motion Detection: The motion detection system can be set to off or on during analysis.

Time/Date: The time and date can be changed.

Device ID: A unique identifier for each defibrillator.

ACCESSORIES

CHARGE-PAK Battery Charger

Type: Li/SO_2Cl_2 Lithium Sulfuryl Chloride, 11.7V, 1.4 amp-hours.

Replacement: Replace after each use, after 30 minutes of accumulated "on" time, or when CHARGE-PAK indicator is visible, typically after two (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) or anterior-posterior placement.

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 (typical).

Infant/Child Reduced Energy Defibrillation Electrodes: Intended for use with any *CR Plus* defibrillator on children up to 8 years of age or 25kg (55 lbs).

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

Capacity: Minimum 200 time-stamped event log markers.

Communications: Wireless transfer to a personal computer.

Data Review: Medtronic 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 (68°F) unless otherwise stated.

AED users should be trained in CPR and use of the AED. Please consult a physician. A prescription is required.

For further information please call Medtronic at 1.800.442.1142 or visit www.medtronic-ers.com

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