

# Lifeline **ARM**

**WHEN  
SECONDS COUNT  
TECHNOLOGY  
MATTERS**



# REVOLUTIONIZING THE WAY YOU DELIVER CPR

With an innovative and elegant design, the Lifeline ARM is an automated solution for providing victims of sudden cardiac arrest high-quality and continuous CPR that is associated with better survival outcomes.<sup>1</sup> Easy to deploy and use, the device delivers compressions, with complete chest recoil, at the depth and rate recommended by the AHA/ERC cardiopulmonary resuscitation (CPR) guidelines. Using a proprietary algorithm that compensates for variability in patient chest resistances, the Lifeline ARM delivers precise compressions, an important factor for effective CPR.<sup>2</sup>



The Lifeline ARM is engineered for the ruggedness and durability demands of professional first responders and healthcare providers responding to SCA emergencies.

## HIGHLY VISIBLE & PORTABLE

Time is of the essence in a rescue, and equipment needs to be easy to carry, deploy, and pack up. The lightweight Lifeline ARM comes with a red canvas carrying case designed for backpack portability. Inside the structured case is a custom foam insert that perfectly contours the Lifeline ARM components for easy access and repacking.



## BUILT TO WITHSTAND DEMANDING ENVIRONMENTS

The structural design of the frame and backboard, and the housing of the compression module, combine to contribute to its extreme durability, strength, and impact resistance, making it one tough unit. Designed to be reliable and rugged, the Lifeline ARM is protected against ingress and fluid spray, and it meets military standards for vibration.

<sup>1</sup>Kleinman ME, et al: 2015 American Heart Association guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Part 5: Adult Basic Life Support & CPR Quality. *Circulation* (2015); 132:S414-S435.

<sup>2</sup>Nagao K et al: Duration of Prehospital Resuscitation Efforts After Out-of-Hospital Cardiac Arrest *Circulation*. 2014; 130: A120

<sup>3</sup>Wik L, et al: Quality of Cardiopulmonary Resuscitation during Out-of-Hospital Cardiac Arrest. *JAMA*. 2005;293(3):299-304. doi:10.1001/jama.293.3.299.

## REMOVABLE COMPRESSION MODULE

The removable compression module is unique to the Lifeline ARM. Its modularity facilitates easy deployment and makes it much more convenient to use and service. The module houses a software controlled motor and the compression piston. In conjunction with the frame and backboard, the compression module delivers chest compressions at a consistent depth and rate without undue frame deflection or distortion, both of which impact CPR efficacy.<sup>3</sup>



## UNMATCHED OPERATING TIMES

Prolonged CPR efforts may benefit some patients.<sup>2</sup> With the Lifeline ARM's longer battery life, it is especially suited for extended periods of uninterrupted CPR accommodating long transports to, or lengthy treatments in a hospital.



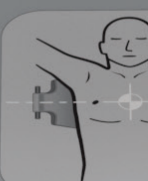
By design, the Lifeline ARM, with its advanced battery technology and flexible power options, may be operated using the rechargeable battery pack or the external AC power adapter, which even during use is capable of recharging the battery pack

- ✓ Fastest in-unit recharge time
- ✓ Higher number of charge/discharge cycles
- ✓ Rapid battery pack swapping
- ✓ Battery pack can be inserted in multiple orientations

## MAXIMUM PATIENT ACCESSIBILITY

Self-centering and self-locking latches on the frame make it easy to match up with, and securely snap into, the backboard.

- ✓ Two sets of wide release levers, located on each side of the frame, provide multiple frame release options
- ✓ Purposeful redundancy of release levers enables easy detachment of both sides of the frame, or one side at a time
- ✓ Integrated patient lift handles
- ✓ Simultaneous defibrillation is possible





## INTUITIVE USER INTERFACE WITH REAL-TIME CPR PROTOCOL SELECTION

The Lifeline ARM's extremely simplified control panel requires just two steps to initiate mechanical CPR:

1. Adjust the compression piston's height relative to the patient's chest using the Up / Down buttons.
2. Select from two rescue protocols by pressing the corresponding softkey: Chest compressions only (no breaths), or chest compressions with rescue breaths.

- ✓ With real-time CPR protocol selection, you can switch between the two protocols during the rescue
- ✓ The compressions with breaths protocol has timed pauses programmed into the compression cycle to allow for rescue breaths
- ✓ At any time, compressions may be stopped (paused), or resumed

## INCREASED STRUCTURAL INTEGRITY

For superior performance during compressions, a rigid frame and backboard enable operation without unwanted flex.

- ✓ Single-piece design of the frame enhances usability during deployment and use
- ✓ Stiff structure provides consistent compression depth, an important element for patient survival
- ✓ Accommodates a broad range of adult patient sizes (weight is not a factor)
- ✓ Provides high quality CPR delivery during transport
- ✓ Well-balanced and lightweight



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# AUTOMATED CHEST COMPRESSION DEVICE FOR PROFESSIONALS



## EASY TO MAINTAIN & EASILY SERVICEABLE

The removable compression module makes it much more convenient to use, maintain, perform updates, and ship-in for service.

- ✓ A USB port on the module supports data recovery of event data for post event review
- ✓ Software updates may be performed making the Lifeline ARM adaptable to future resuscitation requirements
- ✓ Scheduled preventive maintenance is only needed every 18 months

## SUPERIOR VALUE-ORIENTED SOLUTION

Acquiring and maintaining the Lifeline ARM results in a better price/performance ratio because of exclusive design features such as the removable compression module, long life batteries, and affordable accessories. These, along with much longer intervals between scheduled periodic maintenance, result in easy serviceability and lower per patient costs.

## CORPORATE FOCUS AND COMMITMENT

The Defibtech tradition of excellence continues to provide superior value, award winning design, and technical innovation in products with powerful features, functions, and ease of use. The results are truly useful products for helping to save lives.

**Be it on the ground, in an ambulance cot, a moving vehicle, or intra-hospital transport, the Lifeline ARM is your solution for uninterrupted CPR.**

# Lifeline ARM Automated Chest Compression Device

## RMU-1000 TECHNICAL SPECIFICATIONS†

### COMPRESSIONS

#### COMPRESSION MODES

Continuous Compressions;  
Compressions with Breathing  
(30:2, 30 compressions with  
3-second pause for ventilation)  
factory default; future protocols  
via field updates

#### COMPRESSION DEPTH

2.1 inches  $\pm$ 0.1 inches  
(5.3 cm  $\pm$ 0.3 cm)  
from start position  
(nominal patient)

#### COMPRESSION FREQUENCY

101  $\pm$ 1 compressions  
per minute

#### COMPRESSION DUTY CYCLE

50%  $\pm$ 5%

### PHYSICAL

#### SIZE (assembled)

23.5 x 20.75 x 9 inches  
(59.7 x 52.7 x 22.9 cm)

#### SIZE (in carrying case)

24 x 18 x 10 inches  
(61.0 x 45.7 x 25.4 cm)

#### WEIGHT (with battery pack)

15.9 lbs (7.1 kg)

#### ADULT PATIENT RANGES

Adult patients that fit into  
the ACC:

- Chest width –  
18 inches (45.7 cm) max
- Chest height –  
6.5 to 11.8 inches  
(16.5 to 30 cm)

Use of the RMU-1000 is not  
restricted by patient weight

### AC POWER ADAPTER

#### MODEL NUMBER

RPM-1000

#### RATED OUTPUT

24.0VDC ( $\pm$ 5%)

#### INPUT VOLTAGE

100 - 240VAC,  
50/60Hz nominal

#### INPUT CURRENT

1.5A

This product has CE mark approval.

### ENVIRONMENTAL

#### OPERATING / MAINTENANCE TEMPERATURE

0 to 40°C (32 to 104°F)

#### STANDBY / STORAGE / TRANSPORT TEMPERATURE

-20 to 70°C (-4 to 158°F)

#### HUMIDITY

5% to 95% (non-condensing)

#### VIBRATION

MIL-STD-810G 514.6  
Category 20 (Ground)

#### SEALING / WATER RESISTANCE

IEC 60529 class IP43  
(battery pack installed)

#### DEVICE CLASSIFICATION

Internally powered Class II  
(with external power source)

#### DESIGN STANDARDS

Meets applicable requirements of:

- IEC 60601-1
- ANSI/AAMI ES60601-1
- CAN/CSA C22.2 60601-1
- IEC 60601-1-2

#### ELECTROMAGNETIC COMPATIBILITY (EMISSIONS & IMMUNITY)

- IEC/EN 60601-1-2:2014
- RTCA/DO-160G  
Environmental Conditions  
and Test Procedures  
for Airborne Equipment,  
Sections 20 and 2
  - » Radiated susceptibility  
(category S, T)
  - » Radiated emissions  
(category M, L)
  - » Conducted emissions  
(category L, M, and H)

#### ALTITUDE

Up to 2000m

#### ATMOSPHERIC PRESSURE

99 kPa

### BATTERY PACK

#### MODEL NUMBER

RBP-1000

#### BATTERY TYPE

18.0V, 5600 mAh, Lithium-ion.  
Rechargeable, recyclable.

#### OPERATION TIME

1 hour (nominal patient)\*

#### BATTERY PACK CHARGE TIME

Less than 3 hours in ACC\*  
Less than 2 hours if charging  
one battery pack in optional  
external battery pack charging  
station (less than 3 hours if  
charging two battery packs)\*

#### BATTERY PACK USEFUL LIFE

Recommended to replace  
battery pack every 3 years  
or if battery pack indicator  
displays a replace battery  
pack condition (~300 charge/  
discharge cycles\*\*)

#### BATTERY PACK OPERATING / CHARGING TEMPERATURES

0 to 40°C (32 to 104°F)  
ambient

#### BATTERY PACK STORAGE TEMPERATURE

0 to 40°C (32 to 104°F);  
-20 to 60°C (-4 to 140°F)  
short-term <1 month

#### SEALING / WATER RESISTANCE

IEC 60529 class IP44

\*typical, new battery, at 25°C

\*\*one charge/discharge cycle  
is defined as charging and  
discharging the full capacity of  
the battery pack

†Specifications subject to change without notice