



# Lifeline **ARM**

When Seconds Count  
Technology Matters™



## **Defibtech's Latest Advancement – The Lifeline ARM Automated Chest Compression (ACC) Device for Professionals**

Precise operation of the Lifeline ARM helps to ensure high-quality and continuous cardiopulmonary resuscitation (CPR) associated with better survival for victims of sudden cardiac arrest (SCA)<sup>1</sup>



**defibtech**  
Life-Saving Technology Within Reach

# 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>2</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>3</sup>



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

## 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>1</sup>



- The module provides high quality CPR (recommended depth and rate) with full chest wall recoil without interruptions according to AHA/ERC Guidelines
- A proprietary algorithm ensures consistent depth and rate of the compressions across a wide range of patient chest resistances
- A custom designed brushless DC motor drives the compression piston delivering smooth and consistent operation



<sup>1</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.

<sup>2</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>3</sup> Nagao K et al: Duration of Prehospital Resuscitation Efforts After Out-of-Hospital Cardiac Arrest Circulation. 2014; 130: A120

## 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<sup>1</sup>
- Accommodates a broad range of adult patient sizes (weight is not a factor)
- Provides high quality CPR delivery during transport
- Well-balanced and lightweight



## 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

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

# 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 toggle 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

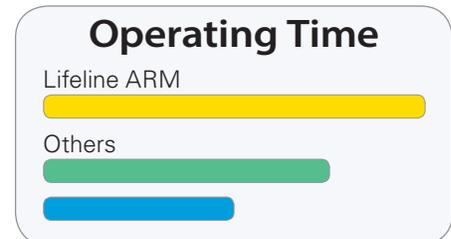
## Unmatched Operating Times

 Prolonged CPR efforts may benefit some patients.<sup>3</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



## 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.

*The ARM is intended for use by qualified medical personnel, certified to administer CPR, as an adjunct to manual CPR when effective manual CPR is not possible (e.g., during patient transport, or extended CPR when fatigue may prohibit the delivery of effective/consistent compressions to the victim, or when insufficient personnel are available to provide effective CPR).*



## Easy to Maintain & Field Serviceable

 **The removable compression module makes it much more convenient to use, maintain, perform field 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 in the field 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.

# 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)

20 x 20 x 10 inches  
(50.8 x 50.8 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

24.0V  $\pm$ 5% @ 4.2A

#### INPUT VOLTAGE

85 - 264VAC  
(100 - 240VAC nominal)

#### INPUT FREQUENCY

47 - 63Hz

#### INPUT CURRENT

<2.3A rms

#### OPERATING TEMPERATURE

0 to 40°C (32 to 104°F)  
full load

#### STORAGE TEMPERATURE

-40 to 85°C (-40 to 185°F)

#### ELECTROMAGNETIC COMPATIBILITY (EMISSIONS & IMMUNITY)

IEC 60601-1-2

### 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)

#### ELECTROMAGNETIC COMPATIBILITY (EMISSIONS & IMMUNITY)

IEC 60601-1-2:2007/AC: 2010

#### DESIGN STANDARDS

Meets applicable requirements of:

- IEC 60601-1
- UL 60601-1
- CAN/CSA C22.2  
60601-1
- IEC 60601-1-2

#### DEVICE CLASSIFICATION

Internally powered Class II  
(with external power source)

### BATTERY PACK

#### MODEL NUMBER

RBP-1000

#### BATTERY TYPE

18.5V, 5300 mAh, Lithium-ion.  
Rechargeable, recyclable.

#### OPERATION TIME

1 hour (normal patient)\*

#### BATTERY PACK CHARGE TIME

Less than 3 hours in ACC\*  
Less than 2 hours in external  
battery pack charging station\*

#### 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 TEMPERATURE

0 to 40°C (32 to 104°F)  
ambient

#### CHARGING TEMPERATURE

0 to 40°C (32 to 104°F)  
ambient

#### 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, with new battery at 25° C

†Specifications subject to change without notice

**USA** Rx ONLY



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