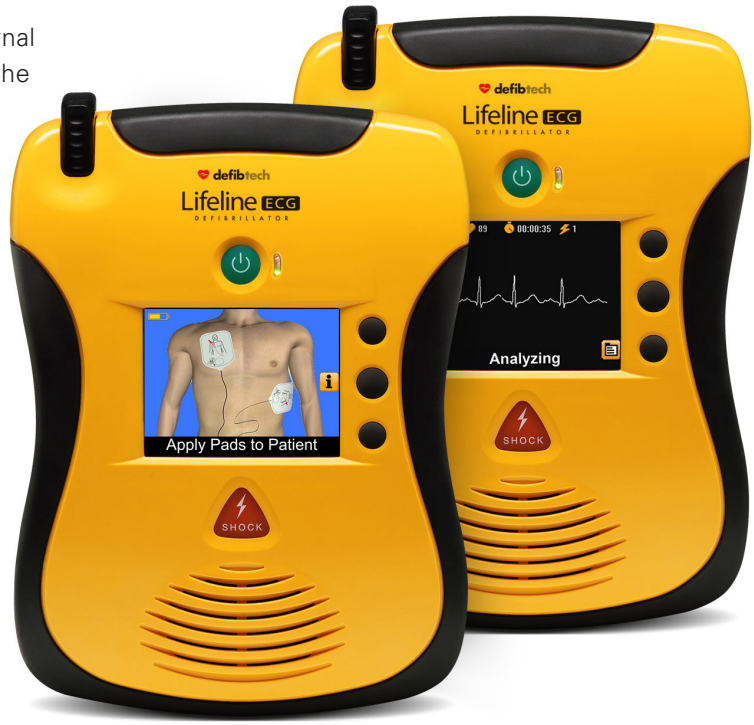
# Lifeline ECG

defibtech
Life-Saving Technology Within Reach

## The AED with Features Healthcare Professionals Demand

Defibtech offers value-oriented automated external defibrillators (AEDs) sophisticated enough to meet the needs of the most demanding professional rescuers and health care providers while also providing ease of use for lay persons. Defibtech's Lifeline ECG AED is ideal for use by organizations that incorporate a public access response element. When a trained responder arrives on the scene, the touch of a button can change the unit's display from AED to ECG waveform display in real-time.




Such flexibility makes this AED well suited for a wide variety of applications within Emergency Medical Services (EMS) and Healthcare Facility environments. Depending on where they will be deployed, units can be configured into either the AED mode, or the ECG waveform display mode. When the AED is used for public access, the non-rechargeable battery, with its stand-by life of 4 years, is a conventional configuration. The optional rechargeable battery pack may be a preference in locations where AED programs also support dedicated personnel and maintenance protocols. Examples include office complexes, transportation systems, educational institutions, sports and entertainment venues, airports, emergency vehicles (including police cars and fire departments), and hospitals (e.g., cafeterias, intra-hospital transport, crash carts).

In addition to being easy to use for public access applications, Defibtech's Lifeline ECG reasonably and economically augments the number of defibrillators that need to be kept on hand for use by lay users, basic and advanced life support (BLS/ALS) personnel, and code team members.

### Defibtech's Lifeline ECG is a multi-mode AED for professionals with these powerful features:

- AED mode with full color video shows step-by-step animated instructions
- ECG mode displays patient's ECG data and event information
- One-Touch Status Screen gives you up to the minute information regarding the device and its components
- Real-Time Protocol Selection enables you to switch between rescue protocols on demand
- <3 lbs., IP55, daily and automatic self-tests, field upgradable on-site when CPR guidelines change

# defibtech Lifeline AEDs

## Offering the Best Selection for Saving a Life

Defibtech is a leader and innovator in the design and manufacture of automated external defibrillators (AEDs), mechanical chest compressors, and other life-saving resuscitation products. By using advanced design and manufacturing techniques, Defibtech provides value-oriented, easy-to-use solutions with high quality and reliability.

### Life-Saving Design

Defibtech's technologically advanced devices include the Lifeline™ family of fully featured AEDs with distinctive yellow hourglass shapes, roomy handles, and rubberized surfaces. Sophisticated enough to meet the needs of the most demanding first responders, they are also incredibly easy for the untrained to use. Virtually anyone can be a lifesaver with a Lifeline AED as it leads the user through a rescue step-by-step.

The Lifeline AED product line includes a semi–automatic defibrillator, a fully–automated defibrillator that analyzes heart rhythms and automatically delivers a shock, an AED capable of an ECG waveform display at the touch of a button, and the first AED with full–motion color video.

Built to exacting medical standards as well as to U.S. Military specifications, Defibtech's Lifeline AEDs are lightweight, robust, dust protected, spray and water resistant, and meet "shock and drop" specifications for use in tough environments. They are also easily maintained and field upgradable, on-site, when CPR guidelines change.

### A Trusted Industry Leader

Defibtech has drawn accolades and won numerous awards for its record of innovative sleek product designs, revenue growth, and commitment to quality and service excellence. Deployments include workplaces, government buildings, airports and aircraft, rail stations and trains, educational institutions, emergency vehicles, resorts, arenas, and waterway vessels.

Headquartered in Guilford, Conn., all life-saving products are conceived and developed in-house, and built in the United States in state-of-the-art facilities. For more information about Defibtech and its products, visit www.defibtech.com.

# Defibtech Lifeline ECG Automated External Defibrillator with ECG Display

TECHNICAL SPECIFICATIONS†

## OPERATING MODES

**AED WITH VIDEO DISPLAY**
High-resolution LCD displays full-motion animated instructions with CPR coaching.

**AED WITH ECG DISPLAY**
High-resolution LCD displays patient's ECG data and event information using defibrillation pads.

## DEFIBRILLATOR

**TYPE**
Semi-automatic external defibrillator

**MODEL**
DDU-2450

**WAVEFORM**
Impedance Compensated Biphasic Truncated Exponential

**ENERGY***
Adult: 150 Joules
Child / Infant: 50 Joules

**CHARGE TIME**
4 seconds or less (from shock advised)**

**CONTROLS**
Lighted On/Off button
Lighted Shock button

**DISPLAY**
High-resolution color LCD

**VIDEO PROMPTS**
Full motion video
On-screen text prompts

**CPR COACHING**
Video and voice coaching
On-demand video help

**VOICE PROMPTS**
Extensive voice prompts guide user through operation of the unit

**RESCUE PROTOCOL**
AHA/ERC (default); supports protocol updates by the user (password protected)

*Nominal into 50 ohm load
**Typical, with new battery, at 25°C

## PATIENT ANALYSIS SYSTEM

**PATIENT ANALYSIS**
Automatically evaluates patient impedance for proper pad contact. Monitors signal quality and analyzes patient ECG for shockable/non-shockable rhythms.

**SENSITIVITY/SPECIFICITY**
Meets or exceeds IEC-60601-2-4 requirements; meets AAMI DF80 requirements and AHA recommendations

## EVENT DOCUMENTATION

**INTERNAL EVENT RECORD**
Critical ECG segments and rescue event parameters are recorded (greater than 60 minutes) and can be downloaded to a removable data card

**PC-BASED EVENT REVIEW**
ECG with event tag display, and audio playback when available

**REMOVABLE STORAGE**
(optional) Up to 30 hours of ECG and event data storage (no audio option) or up to 3 hours of audio (audio option). ECG and event storage on a removable data card. Actual length of storage is dependent on card capacity.

**USB PORT**
Event download and maintenance operations

## PHYSICAL

**SIZE**
7.3 x 9.5 x 2.3 inches
(18.5 x 24 x 5.8 cm)

**WEIGHT (with battery)**
Less than 3 lbs (1.4 kg)

! USA Rx ONLY

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CE 0197

†Specifications subject to change without notice

## SELF TESTS

**AUTOMATIC**
Automatic daily, weekly, monthly and quarterly circuitry tests

**BATTERY INSERTION**
System integrity test on battery insertion

**PAD PRESENCE**
Pads preconnected tested daily

**USER-INITIATED**
Unit and battery pack system test initiated by the user

**STATUS INDICATION**
Visual & audible indication of unit status

**STATUS SCREEN**
Unit self-test results
Pads and battery information (status and expiration)

## DEFIBRILLATION / MONITORING PADS

**MODEL**
Adult: DDP-2001
Child / Infant: DDP-2002

**SURFACE AREA***
Adult: 12 inches$^2$ (77 cm$^2$)
Child / Infant: 7.75 inches$^2$ (50 cm$^2$)

**TYPE**
Pre-connected, single-use, non-polarized, disposable, self-adhesive electrodes with cable and connector

*Nominal, each pad

## BATTERY PACKS

### NON-RECHARGEABLE

**MODEL**
DBP-2003, DBP-2013 (aviation)

**POWER**
12V, 2800 mAh

**TYPE**
Lithium/Manganese Dioxide
Disposable, recyclable
Non-rechargeable

**CAPACITY***
125 shocks or 8 hours continuous operation

**STANDBY LIFE***
4 years

**LOW BATTERY INDICATORS**
Visible & Audible

### RECHARGEABLE

**MODEL**
DBP-2009

**POWER**
11.1 VDC, 2.0 Ah, 22.2 Wh

**TYPE**
Lithium Ion (Li-ON)
Recyclable, Rechargeable

**CAPACITY***
12 hours of operation in ECG monitoring mode or min. 250 shocks

**STANDBY LIFE***
3 months

**LOW BATTERY INDICATORS**
Visible & Audible

**CHARGING TIME***
Less than 3 hours

**USEFUL LIFE**
Replacement recommended every 3 years (~300 charge/discharge cycles)

*Typical, with new battery, at 25°C

## ENVIRONMENTAL

**TEMPERATURE**
Operating: 0 to 50°C (32 to 122°F)

One Hour Operating Temperature Limit (extreme cold): –20°C (–4°F)*

Standby: 0 to 50°C (32 to 122°F)

**RELATIVE HUMIDITY**
Operating / Standby: 5%-95% (non-condensing)

**ALTITUDE**
-500 to 15,000 ft (-150 to 4500 m) per MIL-STD-810F 500.4 Procedure II

**VIBRATION**
Ground (MIL-STD-810F 514.5 Category 20)

Helicopter (RTCA/DO-160D, Section 8.8.2, Cat R. Zone 2, Curve G)

Jet Aircraft (RTCA/DO-160D Section 8, Cat H, Zone 2, Curves B & R)

**SHOCK / DROP ABUSE TOLERANCE**
MIL-STD-810F 516.5 Procedure IV
48 inches (1.2 meters), any edge, corner, or surface, in standby mode

**SEALING / WATER RESISTANCE**
IEC 60529 class IP55;
Dust Protected, Protected against water jets (Battery pack installed)

**ESD**
IEC 60601-4-2: (Open air up to 15kV or direct contact up to 8kV)

**EMC (Emission)**
CISPR 11 Group 1 Level B and FCC Part 15

**EMC (Immunity)**
IEC 61000-4-3 and IEC 61000-4-8

*From room temperature to tempertaure extreme, one hour duration, updated specification for DDU-2000 Series AEDs running software revision 2.4 or above

# Brief Summary of Indications, Contraindications and Other Important Safety Information

*When should the Defibtech Automated External Defibrillator (AED) be used - what are its indications?*

Lifeline/ReviveR VIEW DDU-2300 and Lifeline/ReviveR ECG DDU-2450 Automated External Defibrillators (AEDs) are indicated for use on victims of sudden cardiac arrest (SCA) who are:

• Unconscious and unresponsive

• Not breathing or not breathing normally

Lifeline/ReviveR VIEW DDU-2300 and Lifeline/ReviveR ECG DDU-2450 AEDs may be used with Defibtech adult defibrillation pads (model number DDP-2001). For patients under 8 years old, or weighing less than 55 lbs (25 kg), use Defibtech child/infant defibrillation pads (model number DDP-2002), if available.

*When should the Defibtech AED not be used - what are its contraindications?*

Lifeline/ReviveR VIEW DDU-2300 and Lifeline/ReviveR ECG DDU-2450 Automated External Defibrillators (AEDs) should not be used if the victim is responsive or conscious.

*What other information is important about using the AED?*

Do not delay therapy to determine exact age or weight. If pediatric pads are not available, apply adult pads in the position as shown for a child/infant and use the AED.

*What are the potential adverse health effects of using an AED?*

The potential adverse effects (e.g., complications) associated with use of an automated external defibrillator include, but are not limited to, the following: • Failure to identify shockable arrhythmia. • Failure to deliver a defibrillation shock in the presence of VF or pulseless VT, which may result in death or permanent injury. • Inappropriate energy, which could cause failed defibrillation or post-shock dysfunction. • Myocardial damage. • Fire hazard in the presence of high oxygen concentration or flammable anesthetic agents. • Incorrectly shocking a pulse sustaining rhythm and inducing VF or cardiac arrest. • Bystander shock from patient contact during defibrillation shock. • Interaction with pacemakers. • Skin burns around the defibrillation pads placement area. • Allergic dermatitis due to sensitivity to the materials used in the defibrillation pads construction. • Minor skin rash.

*What are some of the relevant warnings related to the AED?*

• Hazardous electrical output. This equipment is for use only by qualified personnel.

• Possible fire or explosion. Do not use in the presence of flammable gases or anesthetics. Use care when operating this device close to oxygen sources (such as bag-valve-mask devices or ventilator tubing). Turn off gas source or move source away from patient during defibrillation, if necessary.

• The DDU-2000 Series AED has not been evaluated or approved for use in hazardous locations as defined in the National Electric Code standard. In compliance with IEC classification, the DDU-2000 Series AED is not to be used in the presence of flammable substance/air mixtures.

• Improper maintenance can cause the DDU-2000 Series AED not to function. Maintain the DDU-2000 Series AED only as described in the User Manual and Operating Guide. The AED contains no user-serviceable parts — do not take the unit apart.

• Do not open sealed pads package until pads are to be used. The packaging should be opened only immediately prior to use, otherwise the pads may dry out and become non-functional.

• Do not touch the patient during defibrillation. Defibrillation current can cause operator or bystander injury.

• The defibrillation pads are intended for one-time use only and must be discarded after use. Reuse can lead to potential cross infection, improper performance of the device, inadequate delivery of therapy, and/or injury to the patient or operator.

• CPR during analysis can cause incorrect or delayed diagnosis by the patient analysis system.

• User-initiated and automatic self-tests are designed to assess the DDU-2000 Series AED's readiness for use. However, no degree of testing can assure performance or detect abuse, damage, or a defect that occurred after the most recent test is completed.

• Even if defibrillation occurs, the sudden cardiac arrest event may not result in survival.

*What are some of the relevant cautions related to the AED?*

• Follow all battery pack labeling instructions. Do not install battery packs after the expiration date.

• Follow all defibrillation pad label instructions. Use defibrillation pads prior to their expiration date.

• Use and store the DDU-2000 Series AED only within the range of environmental conditions specified in the technical specifications.

Caution: Federal (U.S.A) law restricts this device to sale by or on the order of a physician.

Please refer to the Operating Guide provided with your AED for user instructions, complete list of warnings and cautions, operator training requirements, summary of primary clinical studies, technical specifications, and other important information. The Operating Guide, for concise guidance on set-up, use, maintenance and technical specifications, and User Manual, for comprehensive training on set-up, use and maintenance; and source for complete technical specifications, are also available at www.defibtech.com/support.

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