Specifications

DEFIBRILLATOR

All specifications are at 20° C unless otherwise specified.

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

Energy Sequence: User configurable, 150 joules–360 joules. Default energy output settings are 200, 300, 360 joules. 360 joules for every shock thereafter.

Charge Time: With new, nonrechargeable battery pack; 200 joules in less than 7 seconds (360 joules in less than 12 seconds)

3-wire (Lead II) monitoring capability: (if ECG display option purchased) Requires purchase of 3-wire (Lead II) monitoring cable and LIFE-PATCH® electrodes

Device Software: Field upgradeable

Infant/Child Reduced Energy Defibrillation Electrodes: Reduces selected energy by a factor of 4. Intended for use only with children up to 8 years of age or 25kg (55 lbs).

Safety Classification: Internally powered equipment IEC 60601-1

Electrical Protection: Input protected against high voltage defibrillator pulses per IEC 60601-1

*Voltage compensation is limited to the voltage that would result in delivery of 360 joules into 50 ohms.

DEVICE SETTINGS

Modes:

- **AED** – Provides operating capability for basic users
- **Manual** – Provides operating capability for advanced users
- **ECG** – Provides ECG display capability with 3-wire ECG cable
- **Setup** – Allows user to configure the device
- **Data Transfer** – Allows user to transfer patient data
- **Auto Test** – Provides daily automatic tests of hardware and software

Controls: On/Off, Shock, Menu, Two (2) configurable soft keys

User Defined Options:

- **Device ID** – Assigns unique identifier to particular device
- **Energy Sequence** – User configurable from 150 to 360 joules
- **Flexible Energy** – Increases only after a lower energy was unsuccessful
- **Auto Analyze** – User can configure device to auto analyze, auto analyze after first shock, or prompt user to push analyze key before each analysis period
- **CPR Time** (post shock or after no shock advised) – User configurable - 15, 30, 45, 60, 90, 120, 180 seconds
- **Device Date/Time**
- **Voice Prompt Volume** – Allows user to change speaker volume
- **ECG Display** (if option purchased) – Turns display on/off for AED mode
- **Motion Detection** – User defined On/Off (default On)
- **Service Alert** – Audio alarm if the device needs servicing. Configurable on/off
- **Manual Access** (if ECG display option purchased) – Devices configured with an ECG display may be set up to allow user to initiate a charge and shock without analysis

cprMAX Technology Settings:

- **Initial CPR** – User defined time for CPR after first analysis regardless of analysis decision. Can be set to OFF, 15, 30, 45, 60, 90, 120 and 180 seconds.
- **Pre-shock CPR** – Allows for CPR while device is charging. Can be set to OFF, 15 or 30 seconds.
- **Confirmation Analysis** – Confirms shockable rhythm after completion of Initial CPR or Pre-shock CPR periods and prior to Push to Shock prompt (default Off)
- **Stacked Shocks** – (ON/OFF) When Off, allows for provision of CPR after each shock
- **Pulse Check** – (Always, After Every NSA, Never) Allows device to prompt for a pulse check either after each shock, after every NSA, or never prompt for a pulse check (default Never)

DISPLAY

Backlit LCD displays number of shocks delivered, elapsed time, text and graphics of heart rhythm and optional ECG

Size: 120 mm (4.7 in) x 89 mm (3.5 in)

Frequency Response: 0.55 Hz to 21 Hz (-3 dB), nominal

ECG option:

- **Waveform Sweep Speed** – 25 mm/sec for ECG, nominal
- **Waveform Viewing Time** – Minimum 4 seconds
- **Waveform Amplitude** – 1 cm/mV, nominal
- **Heart Rate** – 20 to 300 BPM digital display, Display "---" if heart rate is less than 20 bpm. Heart symbol flashes for each QRS detection.

ECG information is received from the adult and Infant/Child electrodes in anterior-lateral or anterior-posterior positions. A 3-wire cable can be used for ECG monitoring (Lead II).

ENVIRONMENTAL

One Hour Operating Temperature (from room temperature to temperature extreme, one hour duration): -20 to 60˚C (-4 to +140˚F)

Operating Temperature: 0 to 50˚C (32 to 122˚F)

Storage Temperature: -30 to 60˚C (-22 to +144˚F) with battery and electrodes (maximum exposure limited to 7 days)

Atmospheric Pressure: 575 hPa to 1060 hPa (4572 to -382 meters; 15,000 to -1253 feet)

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

Dust/Water Resistance: IP55 with battery and REDI-PAK™ electrodes installed (IEC 60529/EN 60529)

Bump: 15 g, 1000 bumps (IEC 600-68-2-29)

Shock: 40 g peak, 15 - 23 ms, 45 Hz cross over frequency

Drop: 1 meter drop on each corner, edge and surface (MIL-STD-810F, 516.5, Procedure IV)

Vibration: Random vibration test - MIL-STD-810F, Method 514.5, Category 20; Ground vehicle 3.15 g rms 1 hour per axis

EMI:

- **Radiated** - IEC 60601-2-4, IEC60601-1-2, CISPR 11 Class B Group 1
- **Immunity** - IEC 60601-2-4, IEC 60601-1-2; IEC 61000-4-2 (Level 4), IEC 61000-4-3, IEC 61000-4-6, IEC 61000-4-8

EVENT DOCUMENTATION AND COMMUNICATION

Memory Capacity: Dual patient storage. Minimum 40 minutes ECG for current patient. Summarized data for previous patient.

Report Types: Continuous ECG, summary (critical resuscitation events and associated ECG waveforms), event log report (report of time stamped entries reflecting operator and device activity), test log report (self test activity report)

Capacity: Minimum 100 time stamped event log entries

Data Review: CODE-STAT™ Suite 6.1 Medical Informatics System, LIFENET® DT Express 2.1 Information Management System or higher

Communications: Infrared wireless transfer to personal computer

BATTERY AND READINESS DISPLAY

Note: See operating instructions for information on battery care

Primary Battery (nonrechargeable battery with status indicator):

- **Type** – Lithium Manganese Dioxide (Li/MnO_2), 12.0V, 4.5 amp-hours
- **Capacity** – Typically will provide 440 200 joule shocks or 1030 minutes of operating time with a new battery (370 200 joule shocks or 900 minutes of operating time at 0°C)
- **Weight** – 0.45 Kg (1.0 lb)
- **Shelf Life** – After the battery is stored for 5 years at 20˚C to 30˚C, the device will provide 48 months of standby life
- **Standby life** (assuming daily tests only) – A new battery provides device power for 5 years
- **Low battery indication** – At least 30 shocks or 75 minutes of operating time remain when low battery is first indicated

PHYSICAL CHARACTERISTICS

Height: 8.7 cm (3.4 in)

Width: 23.4 cm (9.2 in)

Depth: 27.7 cm (10.9 in)

Weight: 3.2 kg (7.1 lbs) with one set of REDI-PAK electrodes and one nonrechargeable battery