E SERIES®

real CPR help®   **see-thruCPR™**

Street Smart. Street tough.

A street-tough defibrillator for ALS with advanced capabilities.

ZOLL®

Advancing Resuscitation. Today.®

ZOLL E Series

- EasyRead Tri-Mode Display™ for maximum readability, whether in pitch dark or direct sunlight

- Unique GPS clock provides complete time accuracy every time the defibrillator is used

- Rapid Cable Deployment System™ helps manage your wires and eliminates the "spaghetti"

- Protocol Assist Code Markers™ for rapid event documentation

- Battery flexibility with low-cost sealed lead acid or rechargeable lithium ion means more choices to meet your needs

- One-piece or two-piece pad. Have it your way. Choose one-piece **CPR-D•pad z**® or two-piece CPR **stat•pad z**®.

- Optional roll-cage design or soft pack carry case

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Rugged design, advanced capabilities

No other full-featured defibrillator was designed specifically for the rigors of your EMS environment. Documentation is made easy when combined with data transfer options that take the "paper" away.

real CPR help®

Chest compression rate and depth is measured in real-time, and both visual and optional audible feedback are provided. All CPR data can be recorded and reviewed using RescueNet® Code Review software.
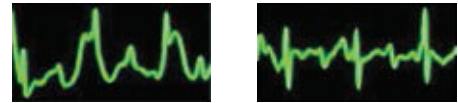
see-thru CPR™

ECG signal processing extracts CPR artifact from the ECG so you can see organized rhythms without interrupting compressions.

The EasyRead Tri-Mode Display provides three screen options: high resolution color, black on white, or white on black.

Depth and rate versions of the Real CPR Help Screen

Unfiltered ECG signal during CPR   Signal filtered by See-Thru CPR

E Series Specifications

ECG Monitoring

Patient Connection: 3-lead, 5-lead or 12-lead ECG cable, paddles or MFE pads, selectable by front panel switch.

Input Protection: Fully defibrillator protected. Special circuit prevents distortion of ECG by pacer pulse (Pacer version only.)

Implanted Pacemaker Spike Display: Dedicated circuitry detects most implanted pacemaker spikes and provides standard display marker of spike on ECG trace.

Bandwidth: 0.5-1 Hz (-3 dB) standard/0.05-150 Hz diagnostic 1 Hz - 21 Hz user-configurable..

Lead Selection: Displayed on monitor.

ECG Size: 0.5, 1, 1.5, 2, 3 cm/mV — displayed on monitor.

Heart Rate: Digital display 0-300 bpm ±5%.

Heart Rate Alarm: Screen icon indicates activated/deactivated status. User- selectable, tachycardia 60-280 bpm, bradycardia 20-100 bpm.

1 Volt ECG Out: 1.0 volt/cm of deflection on strip chart recorder. <25 ms delay from patient ECG input.

Display Format: Non-fade moving bar display.

SmartAlarms™: Beeper/voice prompts indicate shockable rhythm.

Display

Screen Type: High-resolution color liquid crystal display (LCD).

Screen Size: 5.63 inches (14.3cm).

Sweep Speed: 25 mm/sec.

Viewing Time: 4 seconds.

Channels: 2.

Messages: Heart rate, lead/pads, alarm on/off, SpO₂, EtCO₂, AED functions and prompts, defibrillator test function, error corrections and faults, pacer functions (optional), code markers, alarm selection and limits, delivered energy.

Defibrillator

General:

Waveform: ZOLL Rectilinear Biphasic™.

Charge Time: Less than 6 seconds with a new fully charged battery (first 15 charges to max energy). Depleted batteries will result in a longer defibrillator charge time.

Energy Display: Monitor display indicates both selected and delivered energy.

Multi-Function Electrode (MFE) Pads: Specifically designed anterior/posterior pre-gelled ZOLL **stat•pad z**® Multi-Function Electrodes packaged in pairs.

Built-In Defibrillator Tester: Provides verification of the defibrillator charging and discharging without removing paddles from storage wells or verification of unit configured with Multi-Function cable.

Multi-Function Electrode Impedance Measurement Range: 0-250 ohms ±10% or 5 ohms, whichever is greater..

Manual (Adult Mode):

Energy Selection: Selectable at 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 30, 50, 70, 85, 100, 120, 150, 200 Joules. (Delivered into 50 ohm load.) Selected using controls on sternum paddle or device front panel.

Synchronized Mode: Synchronizes defibrillator pulse to patient's

R-wave. "SYNC" message displayed on monitor. Marker on display and recorder paper identifies R-wave discharge point.

Paddles: Standard apex/sternum adult and pediatric. Adult paddles slide off to expose pediatric paddles.

Charge Controls: Control on apex paddle and on device front panel.

Advisory:

Advisory Function: Single analysis or programmable auto re-analyze x3 with programmable auto energy level selection and screen prompts.

Shockable Rhythms: Ventricular fibrillation with amplitude >100 µV and wide complex ventricular tachycardia with rates greater than 150 bpm.

Charge Controls: Control on device front panel.

Energy Selection: Automatic, pre-set shock 1, 2, 3 energy levels — user-configurable. 120, 150, 200 Joules biphasic default. Selected using controls on device front panel.

Pacemaker (Pacer Version Only)

Type: VVI demand; asynchronous (fixed rate) when used without ECG leads or in ASYNC pacing mode.

Pulse: Rectilinear, constant current; 40 milliseconds ±2%; amplitude variable 0 to 140 mA ±5% or 5 mA, whichever is greater; digitally displayed on the monitor (increments or decrements by a value of 2 mA); rate variable from 30 to 180 ppm ±1.5% (increments or decrements by a value of 2 ppm).

Output Protection: Fully defibrillator protected and isolated.

Multi-Function Electrode (MFE) Pads: Specifically designed pre-gelled ZOLL **stat•pad z** Multi-Function Electrodes packaged in pairs.

Recorder

Paper: 80 mm thermal (grid width). 90 mm (paper width).

Speed: 25 mm/sec.

Annotations: Time, date, defib energy, heart rate, pacer output (pacer version only), QRS sync marker, ECG size, lead, alarm, defib test OK/Fail, analyze ECG, pads off, analysis halted, noisy ECG, shock advised, no shock advised, ECG too large, ECG too small and diagnostic bandwidth.

Printing Method: High-resolution, thermal array print head.

Printout Modes: Manual or automatic — user-configurable.

On/Off Control: Front panel and paddle.

Automatic Function: 15-second recording initiated by alarm activation or defibrillator discharge.

Voice Prompts

"Attach pads," "Check pads," "Check patient," "Stand clear," "Press shock," "No shock advised," "Check pulse," "Press analyze," "If no pulse, perform CPR."

Visual Prompts

"Press analyze," "Shock adv," "No shock adv," "Joules selected," "Charging," "Press shock," "Check patient,""If no pulse do CPR".

PCMCIA Card Slots

Accepts two standard series Type II Flash Cards, 2, 4, 16, and 32 MB: Fax modem card capability in slot 1, data cards in slot 2.

PCMCIA Card

Records continuous ECG and device data; optionally records digitally compressed audio data.

Battery Packs

Type: Sealed lead acid. Lithium ion.

Recharge Time: Sealed lead acid: 4 hours or less with integral charger. Lithium ion: 7 hours or less with integral charger.

Operating Time: Sealed lead acid: For a new, fully-charged battery pack at 20°C; 40 discharges at maximum energy or 2.75 hours of continuous ECG monitoring, or 2.25 hours of continuous ECG monitoring/pacing at 60mA, 80 beats/min. Lithium ion: 100 defibrillator discharges at maximum energy (200J), or 4.25 hours of continuous ECG monitoring, or 3.75 hours of continuous ECG monitoring/pacing at 60mA, 80 beats per minute. Additional parameters will effect operating time: consult your Operator's Guide.

General

Size: 5.75 in. (14.6 cm) high x 13.1 in. (33.3 cm) wide x 10.5 in. (26.7 cm) deep.

Weight: 13.2 lb. (6.0 kg) without roll cage or battery; 15.4 lb. (7.0 kg) with sealed lead acid battery; 14.6 lb. (6.6 kg) with lithium ion battery.

Design Standards: Meets or exceeds UL 60601-1, AAMI DF-80, IEC 60601-2-4, EN 60601-2-25, and EN 60601-2-27.

Patient Safety: All patient connections are electrically isolated.

Environmental: Temperature: Operating: 0°C to 55°C (32°F to 131°F). Storage Temperature: -20° to 60°C (-4°F to 14°F).

Note: The E Series device may not perform to specification when stored at the upper or lower extreme limits of storage temperature and immediately put into use.

Humidity: 5 to 95% relative humidity, non-condensing. Vibration: Mil-Std-810F, Minimum integrity test. Shock: IEC 68-2-27, 100 g 6 mS half sine. Operating pressure: 594 to 1060 mBar. Material Ingress: IP34 per EN 60601-1. Electromagnetic Compatibility (EMC): CISPR 11 Class B - Radiated and Conducted Emissions, CISPR 11 Class A - Radiated and Conducted Emissions (dc input only). Electromagnetic Immunity: AAMI DF-80, IEC 61000-4-3 to 10V/m. Electrostatic discharge: AAMI DF-80, IEC 61000-4-2. Conducted Susceptibility: IEC 6100-4-4,IEC 61000-4-5, IEC 6100-4-6.

AC Power: Meets all IEC, UL and AAMI safety requirements.

Options: Roll cage with cable management side pouches or soft case with side pouches.

Communications

Serial Communication: RS232 port, data transfer cable to PC.

Integrated Bluetooth®: Sends 12-lead and vitals from the E Series to Fax or Email via Bluetooth-enabled PDA phone or laptop running ZOLL Data Relay. ZOLL RescueNet® Code Review server directs 12-lead and vitals to specified destinations.

Fax Modem Card: For transmission of 12-lead ECG to Group 3 fax machines.

Bluetooth Pod Option: For sending 12-lead ECG via Bluetooth-enabled cell phone to Fax or GE MUSE System.

ZOLL®
Advancing Resuscitation. Today.®