ZOLL M2™

Technical Specifications

From monitoring at-risk patients to resuscitation with high-quality CPR, the ZOLL M2™ embodies proven, reliable ZOLL® core technology to ensure optimal patient care.

More Support

The ZOLL M2 helps you deliver high-quality resuscitation care to adult and pediatric patients by offering an array of life-saving features, including CPR feedback, cardioversion and pacing, and AED mode for adults and children.

More Trusted Technology

The ZOLL M2 aligns with ZOLL's proven portfolio of resuscitation products that promote consistent, high-quality CPR and provide high-current defibrillation and constant current pacing for adults and children.

More Value

Designed for clinicians, hospital staff, and emergency responders to offer high-quality patient care, the ZOLL M2 incorporates proven, best-in-class technology – all for a lower total cost of ownership.

More Scalable

From a simple shock box to the most complex patient management challenges, the ZOLL M2 offers a variety of options for all patient resuscitation needs, including SpO2, 12-Lead*, EtCO2*, NIBP*, Temperature (2 channels)*, and Impedance Pneumography.

ZOLL M2™ Technical Specifications

Impedance Pneumography

Displayed Data: Numeric breath rate, Impedance waveform

Breath Rate Range: Adult, Pediatric: 2 to 150 breaths/minute and no breath

Breath Rate Accuracy: ± 2 breaths/minute (brpm) for breath rate below 100 brpm. ±3% breaths/minute (brpm) for breath rate above 100 brpm.

Displayed Breath Rate: Average of last 5 breath-to-breath rates

Leads: Lead I (RA – LA)

Sweep Speed: 6.25, 12.5, 25 mm/sec

Alarm Settings: High, low, and no breath rate alarm

$ETCO_2$

Range: 0-150 mmHg

Accuracy: 0 – 40mmHg: ± 2 mmHg
41 – 70mmHg: ± 5%
71 – 100mmHg: ± 8%
101-150mmHg: ± 10%

Respiration range: 0 – 100 bpm ± 1 bpm
101 – 150 bpm ± 2 bpm

Flow rate: 50 ml/min ± 10 ml/min

Maximum response time: < 500ms (Mainstream) / < 3 sec (Sidestream)

Warm-up time: 2 min (Mainstream) / 30 sec (Sidestream)

Temperature

Number of Channels: 2

Range: 0 – 50°C (32 – 122°F)

Units: °C or °F

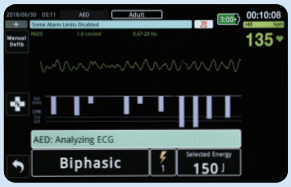
Display: T1, T2, and Delta temp

Accuracy: ± 0.1° C not including probe, ± 0.2° C including probe, from 15° C to 50° C
± 0.2° C not including probe, ± 0.3° C including probe, from 0° C to 15° C

Minimum Measurement Time: <80s (per EN 12470-4)

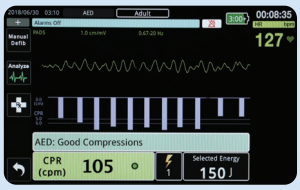
Transient Response Time: <60s (per ISO 80601-2-56)

ZOLL®



Rectilinear biphasic defibrillation

ZOLL's high-current waveform has been proven most effective in treating high-impedance patients.



CPR Feedback

ZOLL's CPR feedback helps clinicians worldwide deliver high-quality CPR.

Patented 40 msec pacing waveform

ZOLL's patented 40 msec pacing has the highest capture rate at the lowest average current required for efficacy and patient comfort.

Reusable hands-free soft paddles

ZOLL's trusted technology replaces external paddles and allows safer shock delivery with Real CPR Help® included.

For more information on ZOLL M2, visit
info.zoll.com/m2

ZOLL Medical Corporation
Worldwide Headquarters
269 Mill Road
Chelmsford, MA 01824, USA
978-421-9655
800-804-4356

For subsidiary addresses and fax numbers, as well as other global locations, please go to www.zoll.com/contacts.

Non-Invasive Blood Pressure (NIBP)

Technique: Non-invasive oscillometric method

Measurement Intervals: Automatic 2.5-, 5-, 10-, 15-, 20-, 30-, 45-, 60-, 90-, and 120-minute intervals and manual quick-action NIBP Start/Stop button

STAT Measurements: 5 min of repeated NIBP readings

Display: Systolic, diastolic, mean

Typical Measurement Time: 30 – 45 sec (on deflation)

Standard Cuff Sizes: Pediatric, Small Adult/Child, Adult, Large Adult, Adult Thigh

Default Cuff Inflation Pressure:
Adults: 160 mmHg
Pediatrics: 120 mmHg

Pressure Measurement Range:
Systolic: 20 – 265 mmHg(Adult)
Systolic: 20 – 240 mmHg (Pediatric)
Diastolic: 10 – 220 mmHg (Adult)
Diastolic: 10 – 180 mmHg (Pediatric)
Mean: 13 – 235 mmHg (Adult)
Mean: 13 – 200 mmHg (Pediatric)

Maximum Cuff Inflation Pressure:
Adults: 280 mmHg
Pediatrics: 260 mmHg

NIBP Accuracy:
Per EN ISO 81060-2

General

Size: Without handle: 264.7 x 231.3 x 223.6 mm; With handle: 264.7 x 231.3 x 274.6 mm

Weight: 5.8 kg without battery and paper; 6.5 kg with battery and paper

Power Sources: AC Mains: 100 - 240 V, 50/60 Hz, 200 VA; Battery: Rechargeable lithium ion battery pack.

Low Battery Indicator: A "LOW BATTERY" message appears on the monitor when there are less than 30 minutes of ECG monitoring

Design Standards: Meets or exceeds applicable requirements of EN 60601-1, EN 60601-2-4, EN 60601-2-27, EN1789

Patient Safety: All patient connections are electrically isolated

Environmental

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

Vibration: EN ISO 80601-2-61 (per IEC 60068-2-64), EN 1789 for ambulance

Shock: IEC 60068-2-27, 100g, 6 ms half sine

Bump: IEC 60068-2-29

Atmospheric Pressure: 620 mbar to 1060 mbar (-381 m to 4000 m)

Temperature: 0 to 50° C

Free Fall: EN 1789, 0.75m functional drop

Storage and Transport: Temperature: -30 to 70°C, Humidity: 5% to 95% RH (non-condensing), Shock/vibration: ISTA 2A

Safety Classification: Class I and internal power per EN/IEC 60601-1

Enclosure Protection (EN/IEC 60529):
Particle Water Ingress: IP44

Defibrillator

Waveform: Rectilinear Biphasic™
Patient Impedance Range: 15 to 300 ohms
Energy Selections: 1 to 10, 15, 20, 30, 50, 70, 85, 100, 120, 150, and 200 joules selected using controls on front of the defibrillator or sternum paddles

Smart Step Energy Levels: Automatically escalates energy through a configured adult or pediatric protocol

Energy Display: Shown on monitor for both selected and delivered

Charge Time: Less than 7 seconds with a new, fully charged battery (first 15 charges to 200 joules); longer charge times may result with a depleted or older battery.

Synchronized Mode: Synchronizes defibrillator discharge to the patient's R wave. SYNC is indicated on the display with R wave markers above the ECG waveform on the screen and stripchart. Less than 60 ms from R-wave peak to defibrillator discharge.

Charge Control: Control from front of defibrillator or apex paddle

Paddles: External apex/sternum paddles; adult plates slide off to expose pediatric electrode surface.

ECG Monitoring

Patient Connection: 3-lead ECG cable, 5-lead ECG cable, 12-lead ECG cable, paddles, multifunction electrodes

Input Protection: Fully defibrillator protected. Circuits designed to prevent distortion of ECG signal by pacer pulse

Implanted Pacemaker Spike Display: Circuits designed to detect most implanted pacemaker spikes and display a marker on the ECG trace

Bandwidth: Pads/Paddles: 0.67 to 20 Hz or 0.67 to 40 Hz (configurable)
3/5/12-lead Monitoring (configurable): 0.67 to 20 Hz or 0.67 to 40 Hz (configurable)
0.525 to 40 Hz Diagnostic mode

Lead Selection: Paddles (Pads), I, II, III, aVR, aVL, aVF, V1-V6

ECG Size: 0.125, 0.25, 0.5, 1.0, 1.5, 2.0, 3.0 cm/mV and auto

Heart Rate Display: 0,20 to 300 bpm. +/- 3% or +/- 3 BPM, whichever is greater

Heart Rate Alarm: User selectable

CPR Dashboard™ Featuring Real CPR Help®

Activated when ZOLL CPR electrodes are connected.

Detection Technology: Accelerometer

Compression Depth: Detected between 1.9 cm and 7.6 cm, with an accuracy of ±0.6 cm

Compression Rate: Detected between 50 and 150 compressions per minute

Feedback: Configurable audio and visual prompts for rate and depth issues when compressions fall outside of AHA/ERC recommendations

Display

Screen Type: Color LCD, 800X480 pixels.

Screen Size: 17.8 cm/7.0 inch diagonally

Sweep Speed: 12.5 mm/sec, 25 mm/sec, 50 mm/sec (user selectable)

Channels: 4

Information: Heart Rate, Leads/Pads, Alarm On/Off, Selected Energy, Delivered Energy, User Prompts and Warnings, SpO_2*, NIBP*, $EtCO_2$*, Pacer Functions, Code Markers, CPR Dashboard

Battery Packs

Type: 10.8 V (nominal) rechargeable lithium ion

Capacity: 5.8 amp hours

Weight: 0.77 kg

Recharge Time: 100% in 5 hours

Operating Time: At least 4 hours of continuous ECG monitoring and 20 x 200J shocks; 100 discharges at maximum shock energy (200J); 3.5 hours of ECG monitoring and pacing at 180 ppm and 140 mA.

Recorder

Technology: High-resolution thermal array, 80 mm paper width

Speed: 25 mm/sec, 50 mm/sec, 6-second delay

Printing Modes: Manual and automatic (user-configurable)

Annotations: Time, date, ECG lead, ECG gain, ECG frequency response, heart rate, defibrillation and pacing parameters and treatment summary events

Communications

USB: 1

WiFi Capable: 802.11 a/b/d/e/g/h/i/n

AED

Shock Advisory Function: Evaluates ECG rhythm to determine if shock delivery is required

Shockable Rhythms: Ventricular fibrillation with amplitudes >100 µV, and wide-complex ventricular tachycardia with rates >150 bpm for adults or >200 bpm for pediatric applications. Refer to Operator's Manual for details on sensitivity and specificity performance.

Protocol Configurations: Configurable for either CPR or shock-first-driven protocols. Energy sequences can be configured for single or multiple shocks with fixed or escalating energy levels. The CPR interval length is configurable in 1-minute increments up to 4 minutes.

External Pacing

Type: External transcutaneous pacing, VVI demand or asynchronous (fixed rate)

Pulse: Rectilinear, constant current

Pulse Width: 40msec ± 2msec

Pacer Rate: 30 - 180 bpm ± 2 bpm

Output Current: 0 - 140mA ± 5% or 5mA (whichever is greater)

Output Protection: Fully defibrillator protected and isolated

Pulse Oximetry (SpO_2)

Saturation Range: 0% - 100%, with a resolution of 1%

Pulse Rate Range: 25 - 240 bpm, with a resolution of 1 bpm

Saturation Accuracy: 70 - 100 ± 2%, Adult/ Pediatric

Pulse Rate Accuracy: ± 3% of the reading or 2 bpm, whichever is greater, Adult/ Pediatric

Specifications subject to change without notice.

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