

X Series™



Technical Specifications:

Xtremely Small, Light, and Powerful

- At less than 12 pounds/6 kilograms, the X Series is about half the size and weight of other full-featured devices.
- Its large, bright screen allows for simultaneous viewing of four traces, all 12 ECG leads, or static and dynamic 12-lead views on a “split screen.”
- The device also incorporates the latest, most advanced and most complete monitoring capabilities, including “gold standard” Masimo® rainbow® SET Pulse CO-Oximetry and Welch Allyn’s Rapid NIBP technology to improve accuracy and reliability.

CPR with Confidence

- CPR Dashboard™ provides real-time numeric depth and rate values and has a CPR timer that switches to an idle timer when compressions are stopped. The release indicator and the perfusion performance indicator (PPI) also help maximize CPR performance.
- See-Thru CPR® (unique to ZOLL®) helps minimize the duration of interruptions by filtering out artifact, allowing you to see organized underlying rhythms during CPR.

Unsurpassed 12-lead Data Collection and Communications Capabilities

- The X Series is the first monitor/defibrillator with integrated WiFi. Bluetooth® and USB cellular modem capabilities are standard as well.
- The X Series is designed to work in conjunction with the new RescueNet® Link EMS communications system.* With RescueNet Link, patient data can be automatically uploaded and streamed to remote displays in ambulances, hospitals, and communication centers while the rescuer cares for the patient on scene and in transit.
- The X Series acquires, stores, and transmits 12-leads to ZOLL's easy-to-use and economical RescueNet 12-Lead and RescueNet MedGate 12-Lead management systems.

General

Weight: 11.7 lbs. (5.3 kg) with battery and paper
Dimensions: 8.9 in (22.6 cm) x 10.4 in (26.4 cm) x 7.9 in (20.1 cm)
Enclosure Protection: Solid Foreign Object: IEC 60529, IP5X
 Water: IEC 60529, IPX5
Operating Temperature: 0 to 50°C
Humidity: 15 to 95% RH (non-condensing)
Vibration: MIL-STD 810G, Method 514.6, 4.4.2 Procedure II
 EN ISO 9919 (per IEC 60068-2.64)
 EN 1789 for ambulance. RTCA/DO-160G (multiple helicopter frequencies)
Shock: IEC 60068-2-27, 100g, 6 ms half sine
Drop: EN 1789, 30-inch functional drop, IEC 60601-1, tested at 2 meters
Altitude: -170 m to 4572 m (-557 feet to 15,000 feet)

Monitor/Display

Size: 6.5 in (16.56 cm) diagonal
Input: 3-lead, 5-lead, or 12-lead patient cable, paddles, or multifunction electrodes
Type: Color LCD, 640 x 480 pixels, 800 MCD
Sweep Speed: 25 mm/sec or 50 mm/sec (user selectable)
Lead Selections: Paddles (Pads), I, II, III, AVR, AVL, AVF, V1-6
Frequency Response: (user selectable)
 0.67 – 20 Hz Limited mode
 0.67 – 40 Hz Monitor mode
 0.25 – 40 Hz Filtered diagnostic mode
 0.05 – 150 Hz Diagnostic mode

Defibrillator

Waveform: Rectilinear Biphasic™
Energy Selections: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 30, 50, 70, 85, 100, 120, 150, 200 joules
Energy Display: Display indicates selected and delivered energy
Charge Time: Less than 7 seconds with a new, fully charged battery
Charge Controls: Front panel and on apex paddle
Pads/Paddles: Hands-free pads and external adult and pediatric paddles. Adult paddles slide off to expose pediatric paddles.
Synchronized Mode: Synchronizes defibrillator pulse to patient's R wave. "SYNC" message displayed on monitor and markers shown on both monitor and recorded ECG. Meets Clause 104 of AAMI DF80.

Patient Modes

User Selectable: Adult, Pediatric, Neonate. Automatically sets configurable defaults for alarm limits, defibrillation energy, and NIBP settings.

Trends (on-screen)

Tabular numeric format
 All parameters trended/viewable
Trend Intervals: 1, 5, 10, 15, 30, 60 minutes
Duration: 24 hours at 1-minute intervals
Snapshots: Minimum of 32 (12 seconds of pre- and post-button press)
 Quick-access trend display via quick-access button

Memory Capacity

A combination of 24 hours of trends at 1-minute intervals, 1000 time-stamped events, and 32 snapshots, including monitor, defibrillator, pacer, and treatment snapshots

Pacer

Type: External transcutaneous pacing
Pulse Types: Rectilinear, constant current
Pulse Width: 40 ms ± 2 ms
Pacer Rate: 30 – 180 bpm ± 1.5%
Output Current: 0 – 140 mA ± 5% or 5 mA, whichever is greater
Modes: Demand and Fixed

CPR

CPR Feedback Technology

See-Thru CPR®: Artifact filtering
 Real CPR Help®: Real-time depth and rate feedback
 CPR Dashboard™: Numeric readout of depth and rate, release indicator, perfusion performance indicator (PPI)

ECG

Cable Detection: Automatic 3-, 5-, 12-lead ECG
Input: 3-lead cable, 5-lead cable, 12-lead cable, paddles, therapy cable
Leads: I, II, III, AVR, AVL, AVF, V1 – V6
Heart Rate Range: 30 – 300 bpm
Heart Rate Accuracy: ± 3 bpm or 3%
Pacer Detection and Display
ECG Sizes: 0.125, 0.25, 0.5, 1, 2, 4 cm/mV, and auto-ranging
Sweep Speed: 25 mm/sec, 50 mm/sec

Masimo® SET SpO₂

Saturation Range: 1 – 100%
Saturation Accuracy:
 Oxygen saturation during no-motion conditions:
 Adults, Pediatrics: 70 – 100%, ± 2 digits
 0 – 69%, unspecified
 Neonates: 70 – 100%, ± 3 digits
 0 – 69%, unspecified
 Oxygen saturation during motion conditions
 Adults, Pediatrics: 70 – 100%, ± 3 digits
 0 – 69%, unspecified
 Neonates: 70 – 100%, ± 3 digits
 0 – 69%, unspecified

Oxygen saturation during low-perfusion conditions:

Adults, Pediatrics: 70 – 100%, ± 2 digits
 0 – 69%, unspecified
 Neonates: 70 – 100%, ± 3 digits
 0 – 69%, unspecified

Pulse Rate Range:

25 – 240 bpm
 Pulse rate during no-motion conditions:
 Adults, Pediatrics,
 Neonates: 25 – 240 ± 3 digits
 Pulse rate during motion conditions
 Adults, Pediatrics,
 Neonates: 25 – 240 ± 5 digits
SpO₂ Average time setting:
 4, 8 (default), 16 seconds

Masimo rainbow® SET SpCO

Range: 0 – 99%
 Accuracy: 1 – 40% ± 3 digits

Masimo rainbow® SET SpMet®

Range: 0 – 99%
 Accuracy: 1 – 15% ± 1 digits

Non-Invasive Blood Pressure (NIBP)

Smartcuf® and Sure BP® NIBP technology
Measurement Intervals: Automatic 1-, 2-, 3-, 5-, 10-, 15-, 30-, 60-minute, and manual quick-action NIBP Start/Stop button
TurboCuf: 5 min of repeated NIBP readings
Display: Systolic, diastolic, mean. Viewable on-screen with large numerals.

Cuff Overpressure Protection

Typical Measurement Time:

30 – 45 sec (on deflation)
 15 – 30 sec – Sure BP (on inflation)

Standard Cuff Sizes: Neonate #1 – #5, Infant, Small Child, Small Adult, Adult Long, Large Adult, Thigh

Default Cuff Inflation Pressure:

Adults: 160 mmHg
 Pediatrics: 120 mmHg
 Neonates: 90 mmHg
 Pressure Measurement Range:
 Systolic: 20 – 260 mmHg
 Diastolic: 10 – 220 mmHg
 Mean: 13 – 230 mmHg
 Maximum Cuff Inflation Pressure:
 Adults: 270 mmHg
 Pediatrics: 170 mmHg
 Neonates: 130 mmHg

EtCO₂

Range: 0 – 150 mmHg
Accuracy:
 0 – 38: ± 2 mmHg
 39 – 150: ± 5% + .08% mmHg >38
Respiration Range: 0 – 149 breaths per minute
Respiration Rate Accuracy:
 0 – 70 bpm ± 1 bpm
 71 – 120 bpm ± 2 bpm
 121 – 149 bpm ± 3 bpm
Flow rate: 50 ml/min -7.5 + 15 ml/min
Typical response time: 2.9 seconds
Maximum response time: 3.9 seconds

Impedance Pneumography

Displayed Data: Numeric breath rate, Impedance waveform
Breath Rate Range: Adult, Pediatric: 2 to 150 breaths/minute. Neonates: 3 to 150 breaths/minute.
Breath Rate Accuracy: 2% or ± 2, whichever is greater
Displayed Breath Rate: Average of last 10 breath-to-breath rates
Leads: Lead I (RA – LA), Lead II (RA – LL)
Sweep Speed: 3.13, 6.25, 12.5 mm/sec
Alarm Settings: High, low, and no breath rate alarm

Invasive Pressure

Three Channels

Pressure Range: -30 – 300 mmHg

Pulse Rate Measurement Range:

25 – 250 bpm
Formats: S/D, S/D (M), (M) user selectable
User-Selectable Labels: P1, P2, P3, ABP, AO, ART, CVP, BAP, FAP, LAP, PAP, RAP, UAP, UVP, ICP

Transducer Requirements:

5M μV/V/mmHg
Zero Adjustment: ± 200 mmHg
Numeric Pressure Accuracy: ± 2 mmHg or 2% reading, whichever is greater of reading, plus transducer error
Transducer Connector: Standard 6-pin AAMI

Temperature

Two YSI 400/700 series-compatible channels
Range: 0 – 50°C (32 – 122°F)
Units: °C or °F
Display: T1, T2, and Delta temp
Accuracy: ± 0.1°C (± 0.06°F) from 10 – 50°C (50 – 122°F) ± 0.2°C (± 0.11°F) from 0 – 10°C (32 – 50°F)

Printer

Type: High-resolution thermal array
Annotation: Time, date, ECG lead, ECG gain, heart rate, defibrillation, and pacing parameters and treatment summary events
Paper Width: 80 mm
Paper Speed: 25 mm/sec, 50 mm/sec
Delay: 6 seconds
Frequency Response: Automatically set to monitor's frequency response

Record Modes: Manual and automatic (user configurable)

Print Option Single waveform or a combination up to 3, on alarm, snapshots, treatment summary report, and trend summary

Battery

Type: Rechargeable lithium-ion, 11.1 Vdc, 6.6 Ah, 73 Wh
Capacity: With a new, fully charged battery operating at room temperature: At least 6 hours of continuous monitoring of ECG, SpO₂, CO₂, 3 invasive pressure channels, and 2 channels of temperature, with NIBP measurements every 15 minutes and 10 200-joule shocks. 300 shocks at 200 joules with fully charged new battery at room temperature. At least 3.5 hours pacing, with ECG, SpO₂, CO₂, three invasive pressures, temperature, NIBP every 15 minutes and pacing at 180 ppm, and 140 mA.

AC Power Adapter: 100 – 240 VAC 50, 60 Hz, 2A 100 – 115 VAC 400Hz, 2A

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*This functionality will be available in future updates.

This product is not available for distribution in Canada as it has not been reviewed and cleared by Health Canada.

Specifications subject to change without notice.

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