X Series®

Technical Specifications:

Because Medics Carry More These Days
• At less than 12 pounds/6 kilograms, the X Series is up to 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 latest, most advanced and most complete monitoring capabilities, including gold standard Masimo® full rainbow® SET and Welch Allyn’s Rapid NIBP technologies can be added.
• Trauma-specific parameters deliver insight on occult hemorrhage (SpHb™), fluid responsiveness (PVI™), and oxygenation status (SpOC™).

Because CPR Is a Focus for Cardiac Arrest
• 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.

Simplify Charting with Advanced Communication
• The X Series is the first monitor/defibrillator with integrated WiFi. Bluetooth® and USB cellular modem capabilities are standard as well.
• With the push of a button, medics can now directly send X Series files to your system. With RescueNet CaseReview, access to case files is as fast as opening your web browser.
• 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.
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/visible
Trend Intervals: 1, 5, 10, 15, 30, 60 minutes
Duration: four 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, pacemaker, and treatment snapshots

Pacer
Type: External transcutaneous pacing
Pulse Types: Rectilinear, constant current
Pulse Width: 40 ms x 2 ms
Pacer Rate: 30 – 180 bpm ± 1.5
Output Current: 0 – 140 mA at 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 x 3 digits
Pulse rate during motion conditions
Adults, Pediatrics
Neonates: 25 – 240 x 5 digits

Masimo rainbow SET SpCO®
Range: 0 – 99%
Accuracy: 1 – 40% ± 3 digits

Masimo rainbow SET SpMet®
Range: 0 – 99%
Accuracy: 1 – 15% ± 1 digits

Masimo rainbow SET SpHb®
Measurement Range: 0 – 25 g/dL
Accuracy (Adults/Infants/Pediatrics): 8 – 17 g/dL
Resolution (SpHb g/dL): 0.1 g/dL

Masimo rainbow SET SpO2CM
Measurement Range: 0 – 35 mL of O2/dL of blood
Resolution: 0.1 mL/dL

Masimo Perfusion Index (PI®)
Measurement Range: 0 – 100%
Resolution: 1%

Non-Invasive Blood Pressure (NIBP)
Smart cuff® and Sure BP® technology
Quick action NIBP Start/Stop button
TurboCuf®: 5 min of repeated NIBP readings
Display: Systolic, diastolic, mean. Viewable on-screen with large numerics.

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, Large Adult, Large 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

Microstream® etCO2
Range:
0 – 150 mmHg
Accuracy:
0 – 38: ± 2 mmHg
39 – 150: ± 5% ± 0.88 mmHg >38
Respiration Range: 0 – 148 breaths per minute
Respiration Rate Accuracy:
0 – 70 bpm ± 1 bpm
71 – 120 bpm ± 2 bpm
121 – 148 bpm ± 3 bpm
Flow rate:
50 mmHg ± 7.5 ± 15 mmHg
Typical response time: 2.5 seconds
Maximum response time: 3.9 seconds

Impedance Pneumography
Displayed Data: Numeric breath rate, Impedance waveform
Breath Rate Range: Adult, Pediatric:
2 to 162 breaths/minute, Neonates: 3 to 150 breaths/minute

Breath Rate Accuracy:
2% or ± 2, whichever is greater

Display 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), IM user selectable
User-Selectable Labels: P1, P2, P3, ABP, A0, AVL, CVP, BAP, FAP, LAP, PAD, RAP, UAP, UVP, ICP
Transducer Requirements:
514 μV/V/mmHg
Zero Adjustment: ± 200 mmHg

Numeric Pressure Accuracy:
± 2 mmHg or 2%, whichever is greater of reading, plus transducer error

Transducer Connector: Standard 6-pin MS connector

Temperature
Two YSI 300/700 series-compatible channels
Range: 0 – 50°C (32 – 122°F)
Units: °C or °F
Display: T1, T2, and Delta temp
Accuracy: ± 0.1°C (± 0.18°F) from 10 – 50°C
(50 – 122°F) ± 0.2°C (± 0.36°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 Switch 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 8 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-juke 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 bpm, and 140 mA.

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