

Technical Specifications

Display

15.6" TFT Touch screen
Resolution: 1366 x 768
Number of traces: 12 waveforms

I/O

LAN: 1 standard RJ45 port
WLAN: IEEE 802.11b/g/n
USB: 2 USB connectors
VGA/HDMI: 1 VGA/HDMI socket
Output: 1 connector for Nurse call, Defib Sync Analog

ECC

Lead type: 3-lead/5-lead/12-lead
ECG waveform: 2 channels/7 channels, 12 channels
Display sensitivity:
2.5mm/mV ($\times 0.25$), 5mm/mV ($\times 0.5$),
10mm/mV ($\times 1.0$), 20mm/mV ($\times 2.0$)
Wave sweep speed:
6.25mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s
Bandwidth

Diagnostic mode: 0.05Hz-100Hz
Monitor mode: 0.5Hz-40Hz
Surgery mode: 1Hz-20Hz
Strong filter mode: 5Hz-20Hz

CMRR: >100dB
Notch: 50/60Hz notch filter can be set to on or off
Differential input impedance: >5M Ω
Electrode polarization voltage range: ± 400 mV
HR range: 15 - 350 bpm
Baseline recovery time: <3s after defibrillation (in monitor and surgery mode)
Calibration signal: 1mV (peak - peak), accuracy $\pm 3\%$

RESP

Measurement method: Thoracic electrical bioimpedance
Measuring lead: Lead I, II
Wave gain: $\times 0.25$, $\times 0.5$, $\times 1$, $\times 2$
Respiratory impedance range: 0.5-5 Ω
Respiration range: 0 - 150bpm
Baseline impedance: 500-4000 Ω
Gain: 10 grades
Scan speed: 6.25mm/s, 12.5 mm/s, 25mm/s

TEMP

Accuracy: $\pm 0.1^{\circ}\text{C}$ or $\pm 0.2^{\circ}\text{F}$ (without probe)
Measurement range: 0-50 $^{\circ}\text{C}$ (32-122 $^{\circ}\text{F}$)
Channel: Two channels
Resolution: 0.1 $^{\circ}\text{C}$

SpO2

Measurement range: 0-100%
PI display
Resolution: 1%
Accuracy: $\pm 2\%$ (70-100%, Adult/Pediatric);
 $\pm 3\%$ (70-100%, Neonate);
0-69%, unspecified
Refreshing Rate: 1s

Masimo SET[®] SpO2(Optional)

Measurement range: 0-100%
Resolution: 1%
Accuracy: $\pm 2\%$ (70-100%, Adult/Pediatric, non-motion, low perfusion);
 $\pm 3\%$ (70-100%, Neonate, non-motion);
 $\pm 3\%$ (70-100%, motion);
0-69%, unspecified
Refreshing Rate: 1s

Pulse Rate

Range: 30-300 bpm
Resolution: 1bpm
Accuracy: ± 2 bpm (non-motion)
 ± 5 bpm (motion)
Refreshing rate: 1s

NIBP

Measurement method: Automatic oscillometric method
Operating mode: Manual, automatic, continuous
Measurement unit: mmHg/kPa selectable
Typical measurement time: 20-40s
Measurement type: Systolic, Diastolic, Mean
Measurement range (mmHg)
Range of Systolic pressure: Adult 40-270
Pediatric 40-200
Neonatal 40-135
Range of Diastolic pressure: Adult 10-210
Pediatric 10-150
Neonatal 10-95
Range of Mean pressure: Adult 20-230
Pediatric 20-165
Neonatal 20-105

Measurement accuracy
Maximum average error: ± 5 mmHg
Maximum standard deviation: 8mmHg
Resolution: 1mmHg
Interval: 1,2,3,4,5,10,15,30,60,90,120,180,240,480minutes
Overpressure protection: Software and hardware, double safety protection
Cuff pressure range: 0-300mmHg

IBP(Optional)

Channel: 2-channel or 4-channel
ART: 0 to 300 mmHg
PA: -6 to 120 mmHg
CVP/RAP/LAP/ICP: -10 to 40 mmHg
Measurement range: P1/P2 -50 to 300 mmHg
Resolution: 1mmHg
Accuracy:
 $\pm 2\%$ or ± 1 mmHg, whichever is greater (without sensor)
Sensitivity: 5uV/mmHg/V
Impedance range: 300 to 3000 Ω

C.O.(Optional)

Method: Thermodilution
Range: C.O.: 0.2 to 20 L/min
TB: 23 to 45 $^{\circ}\text{C}$
TT: -1 to 27 $^{\circ}\text{C}$
Accuracy: C.O.: $\pm 5\%$ or ± 0.1 L/min, whichever is greater
TB, TT: $\pm 0.5^{\circ}\text{C}$ (without sensor)

Mainstream CO2(Optional)

Measurement range: 0-19.7%, 150mmHg, or 0-20kPa
Resolution: 0.1mmHg
Measurement accuracy
0 - 40 mmHg: ± 2 mmHg
41 - 70 mmHg: $\pm 5\%$ of reading
71 - 100 mmHg: $\pm 8\%$ of reading
101 - 150 mmHg: $\pm 10\%$ of reading
Respiration rate: 3-150 bpm
Respiration rate accuracy: 1% ± 1 bpm
Warm-up time: 97% within 8s, full accuracy within 20s

Sidestream CO2(Optional)

Measurement range: 0-20% (0 - 150mmHg)
Accuracy: < 5.0% CO₂ ± 2 mmHg
> 5.0% CO₂: < 6% of reading
Respiration rate: 2 - 150 BPM
Respiration rate accuracy: 1% ± 1 BPM
Warm-up time: 97% within 45s, full accuracy within 10 min
Rate times: (10-90%): About 100ms, when flow is 100 ml/min, adult water trap, 1.5m sampling tube
Delay time: <3sec when flow is 100 ml/min, adult water trap, 1.5m sampling tube

Recorder (Optional)

Built-in Thermal dot array
Horizontal resolution: 18 dots/mm (25 mm/s paper speed)
Vertical resolution: 8 dots/mm
Paper speed: 25 mm/s, 50 mm/s
Number of waveform channels: 3

Masimo ISA[™] Sidestream CO2 (Optional)

Warm-up time: Full accuracy within 10 seconds
Sampling flow rate: 50ml/min/ ± 10 /min
Measurement Range: 0 - 25%
Accuracy: 0-15% ($\pm 0.2\%$ of the reading)
15-25%, unspecified
Rise time: 200ms, typical at 50ml/min flow rate
Total response time:
within 3 seconds (with 2 m MomoLine sampling line)
AWRR Range: 0-150bpm
AWRR Accuracy: ± 1 breath

Masimo IRMA[™] Mainstream CO2 (Optional)

Measurement Range: 0 - 25%
Accuracy: 0-15% ($\pm 0.2\%$ of the reading)
15-25%, unspecified
Warm-up time: Full accuracy within 10 seconds
AWRR Range: 0-150bpm
AWRR Accuracy: ± 1 breath

Masimo Multi-gas ISA AX + Mainstream CO2 (Optional)

Gas: CO₂, N₂O, HAL, ISO, ENF, SEV, DES with automatic identification
Warm-up time: Full accuracy within 20 seconds for IRMA AX+ CO₂ Accuracy: 0-10%: ($\pm 0.2\%$ + 2% of the reading)
0-15%: ($\pm 0.3\%$ + 2% of the reading)
N₂O Accuracy: 0-100%: ($\pm 2\%$ + 2% of the reading)
HAL, ISO, ENF: 0-8%: ($\pm 0.15\%$ + 5% of the reading)
SEV: 0-10%: ($\pm 0.15\%$ + 5% of the reading)
DES: 0-22%: ($\pm 0.15\%$ + 5% of the reading)
Agent identification time: < 20s (typical < 10s)
AWRR range: 0-150bpm
AWRR accuracy: ± 1 bpm
Apnea time: 20-60s

Aspect BISx module(Optional)

Parameter Measurement:
BC: 0-30 (Only limited to the combined use of an external sensor with a BIS module)
EMG: 30-55dB (bar chart) with intensity between 30dB and 80dB (tendency chart)
BIS: 0-100
SQI: 0%-100%
SR: 0%-100%
SEF: 0.5Hz-30Hz
TP: 40-100DB
EEG Measurement:
Input impedance: >5M Ω
Noise (RTI): ± 2 uV (0.25-50Hz)
Input signal range: ± 1 mV
EEG bandwidth between: 0.25Hz-110Hz

NMT (Optional)

Microprocessor-controlled
Stimulation Mode: TDF, TDFS, PTC, 1Hz Twitch, 0.1Hz Twitch, DBS DBS3 and 3.2(Double Burst), Tetanic
Stimulation (Burst), Ss - 50Hz or 100Hz
Output (accuracy $\pm 5\%$ of full scale value)
Surface electrodes:
Constant current: 0-60mA (0-12/18uCi) up to 5KOhm.
Monophasic, 200us or 300us pulse width

Needle electrodes:
Constant current: 0-6mA (0-0.24uCi) up to 5KOhm.
Monophasic, 40us pulse width
Acceleration transducer: Accuracy: 5% of full scale value
Temperature sensor: Range 20.0-41.5 $^{\circ}\text{C}$ (accuracy $\pm 5^{\circ}\text{C}$)

Operation Environment

Power: AC 100-250V, 50/60Hz
Temperature: 5-40 $^{\circ}\text{C}$
Humidity: < 80%
Patient Range: Adult, Pediatric, Neonate

ABM
ACER BIOMEDICALS



Multipara Modular Monitor-X-5
Critical Care Patient Monitor

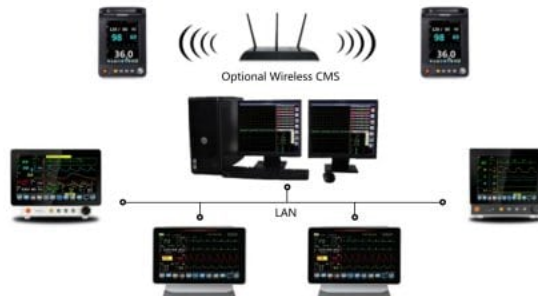


- 15.6" High resolution TFT LCD Touch screen
- 10 waveform display, up to 12-lead ECG analysis
- Powerful calculation (Hemodynamic, Dose, Oxygenation, Ventilation)
- Pacemaker detection
- ST & arrhythmia analysis
- SpO2 support PVI and PI, low perfusion 0.2%
- Alarm is visible from 360 degrees

- Aspect BISx module, NMT module optional
- Wired/Wireless CMS, support HL7 protocol to HIS
- SpO2 pulse-tone modulation (Pitch Tone)
- HDMI support external display
- Graphical & tabular trend review (120 hours)
- 48 hours full disclosure wave review for each patient

Easy access to view the historical data

- 120 Hours long trend
- 60 Min short trend
- 1000 NIBP measurement
- 200 alarm event



Central Monitoring System

Up to 64 beds
 Net work is compatible to wired or wireless CMS
 Auto adaptable to different screen resolution

Configuration

5-lead ECG, SpO2, NIBP, TEMP, Resp, PR; Li-ion battery

Optional

12-Lead ECG, Masimo/Nellcor SpO2, Suntech NIBP, 2-IBP, C.O., EtCO2, Multi-gas, BIS, NMT; HDMI, Barcode Scanner, Thermal Recorder, Wired/Wireless CMS



Masimo SET+ SpO2
 Measure-through Motion and Low Perfusion pulse oximetry delivers accurate and reliable oxygenation



Bispectral Index™ by Aspect
 Monitor the level of consciousness of the patient under general anesthesia or sedation. provides BIS, SQI, EMG, SR, SEF, TP, PC value and EEG wave.



Masimo Gas Technology
 IRMA™ Mainstream & ISA™ Sidestream Analyzers
 Allows selection of the modality best suited to the application



NMT
 Neuromuscular monitoring



IBP
 2-4 Channel, support IBP waveform overlapping display



C.O.
 Cardiac Output



12-Lead ECG



4 channel IBP



OxyCRG screen



Dynamic trends