ZONE MEDICAL

NORTHERN MEDITEC

Committed to Excellence

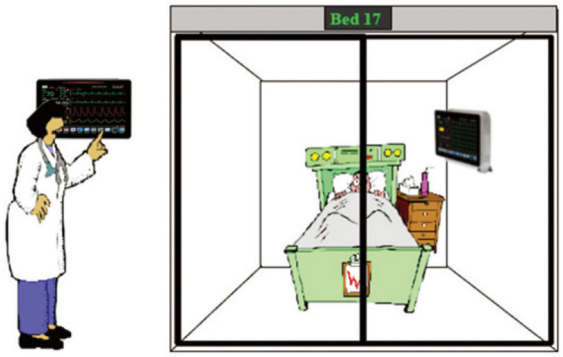
Gemini

Anesthesia Patient Monitor

Multiple parameter options satisfy the need for ICU,CCU,NICU.

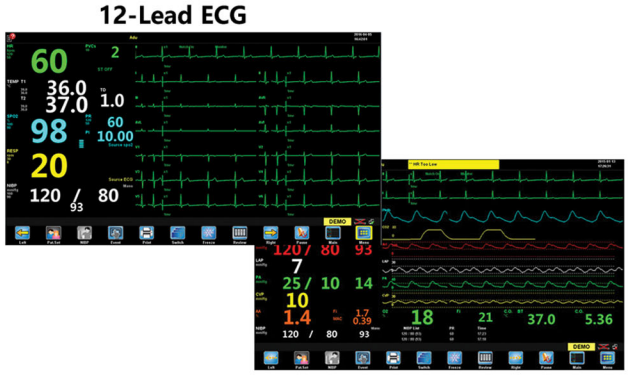
- 15.6"/17"/19" switchable TFT LCD Touch screen
- Aluminum material shell
- Fanless design allows for quite care environment
- 10 waveform display,up to 12-lead ECG analysis
- Powerful calculation(Hemodynamic,Dose,Oxygenation,Ventilation)
- SpO2 support PVI and PI, low perfusion 0.2%
- BIS module, NMTmodule optional
- Wired/Wireless CMS, support HL7 protocol to HIS
- SpO2 pulse-tone modulation (Pitch Tone)
- Support VGA/HDMI external display
- Graphical & tabular trend review(120 hours)
- 48H full disclosure wave review for each patient

Switchable screen



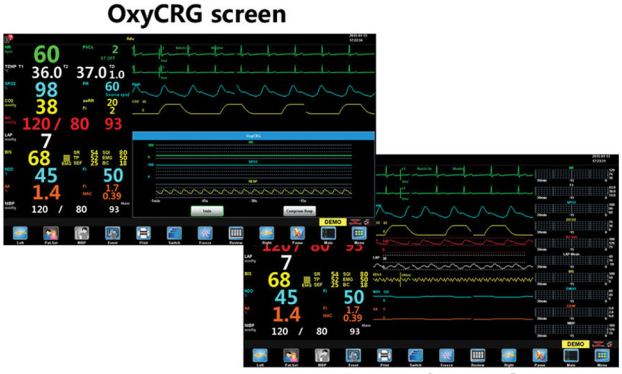
Multiple-parameter options & Flexible screen size options

12-Lead ECG



4-IBP

OxyCRG screen



Dynamic trends

Configuration

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

Optional

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

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

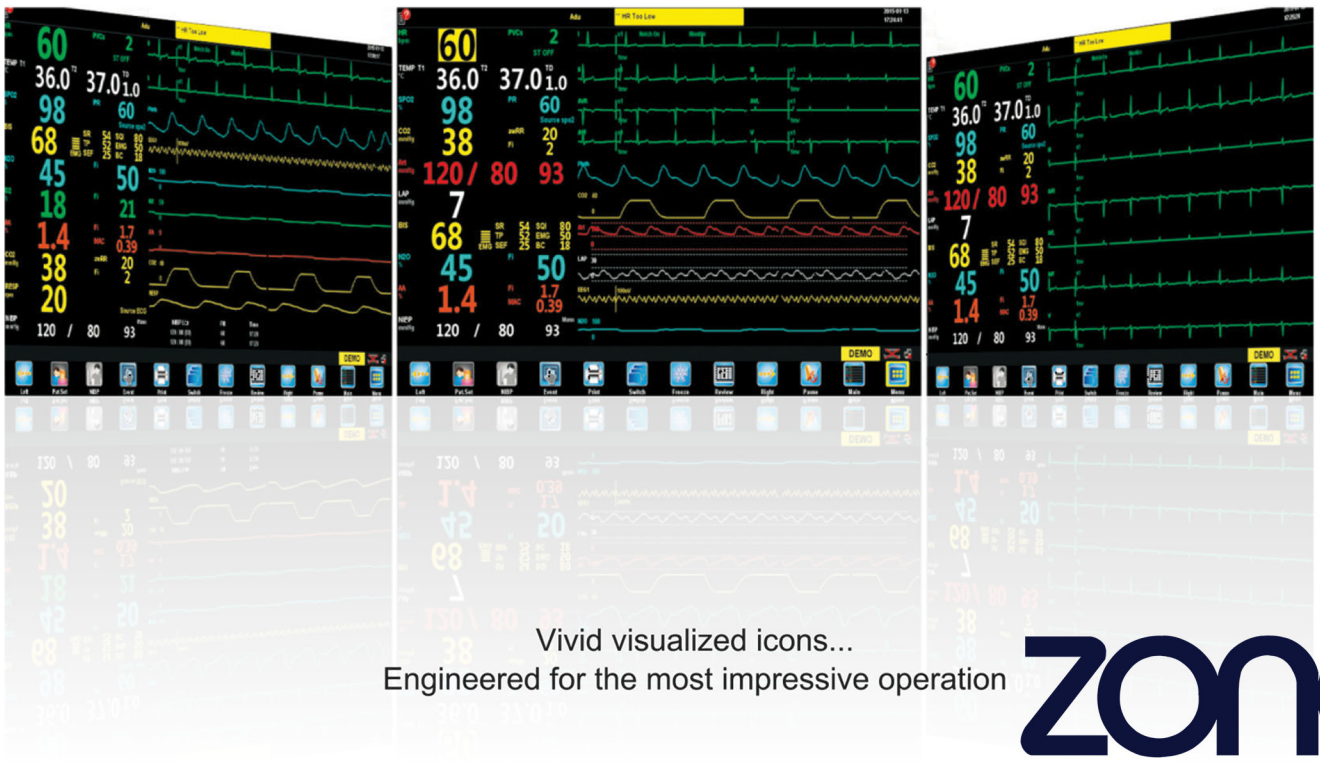
Bispectrial Index™ by Aspect
Monitor the level of consciousness of the patient under general anesthesia or sedation. provides BIS, SQI, EMG, SR, SEF, TP, PC value and EEG wave.

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



Vivid visualized icons...
Engineered for the most impressive operation

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Specifications

Physical Specification

Display
15.6"/18.5"optional TFT Touch screen
Resolution: 1366 x 768
Number of traces: 10, up to 12 ECG waveforms
Dimension
15.6": 403×320×185mm(L×W×T)
19" : 470×327×185mm(L×W×T)
Weight: < 10kg under standard configuration
LAN: 1 standard RJ45 port
WLAN:IEEE 802.11b/g/n
USB: 2 USB connectors
HDMI: 1 HDMI monitor connnector
Output:1 connector for Nurse call,Defib Sync Analog Output

ECG

Lead type :3-lead,5-lead,12-lead(optional)
ECG waveform:2 channels,7 channels, 12 channels
Display sensitivity(wave gain):
1.25mm/mV(×0.125), 2.5mm/mV (×0.25), 5mm/mV (×0.5), 10mm/mV (×1.0), 20mm/mV (×2.0), 40mm/mV (×4.0), Auto
Wave sweep speed:
3.125mm/s, 6.25mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s
Bandwidth
Diagnostic mode: 0.05Hz~150Hz
Monitor mode: 0.5Hz~40Hz
Surgery mode: 0.5Hz~25Hz
Strong filter mode: 5Hz~25Hz
CMRR>100dB
Notch: 50/60Hz notch filter can be set to on or off
Differential input impedance>5MΩ
Electrode polarization voltage range: ±400mV
HR range: 15 - 350 bpm
Baseline recovery time<3s after defibrillation (in monitor and surgery mode)
Calibration signal:1mV (peak - peak), accuracy ±3%

RESP

Measurement method : Thoracic electrical bioimpedance
Measuring lead: Lead I, II
Wave gain: ×0.25, ×0.5, ×1, ×2
Respiratory impedance range: 0.5-5Ω
Baseline impedance: 500-4000Ω
Gain: 10 grades
Scan speed: 3.125mm/s, 6.25mm/s, 12.5 mm/s, 25mm/s

TEMP

Accuracy:±0.1℃ or ±0.2°F (without probe)
Measurement range: 5~50℃ (41~122°F)
Channel: Two channels
Resolution: 0.1℃
Parameters: T1,T2 and TD

SpO2

Measurement range : 0-100%
Parameter monitoring: Perfusion Index(PI)
Pleth Variability Index(PVI)
Resolution: 1%
Accuracy: ±2% or ±2bpm
Refreshing Rate: 1s
Pleth wave speed: 3.125mm/s, 6.25mm/s, 12.5 mm/s, 25mm/s

Masimo SET® SpO2(Optional)

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

Pulse Rate

Range: 35~300 bpm
Resolution: 1bpm
Accuracy: ±2bpm (non-motion)
±5bpm (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: ±5mmHg
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: 0-280mmHg

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:
±2% or ±1mmHg, whichever is greater(without sensor)
Sensitivity: 5uV/mmHg/V
Impedance range: 300 to 3000Ω

C.O.(Optional)

Method: Thermodilution
Range: C.O.: 0.2 to 20 L/min
TB: 23 to 45 ℃
T1: -1 to 27℃
Accuracy:C.O.:±5% or ±0.1L/min, whichever is greater
TB,T1: ±0.5℃ (without sensor)

Northern 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: ± 5% of reading
71 - 100 mmHg: ± 8% of reading
101 - 150 mmHg: ± 10% of reading
Respiration rate: 3-150 bpm
Respiration rate accuracy: 1% ±1bpm
Warm-up time: 97% within 8s, full accuracy within 20s

Northern Sidetream CO2(Optional)

Measurement rage: 0-20% (0 - 150mmHg)
Accuracy: < 5.0% CO 2: ± 2 mmHg
> 5.0% CO 2: < 6% of reading
Respiration rate: 2 ~ 150 BPM
Respiration rate accuracy: 1% ±1BPM
Warm-up time: 97% within 45s, full accuracy within 10 min
Rise times(t10-90%): 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 :16 dots/mm (25 mm/s paper speed)
Vertical resolution:8 dots/mm
Paper speed: 12.5mm/s, 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% (±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% (±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 OR+/IRMA AX+ 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%:±(0.2%+2% of the reading)
0-15%:±(0.3%+2% of the reading)
N2O Accuracy: 0-100%:±(2%+2% of the reading)
HAL,ISO,ENF: 0-8%:±(0.15%+5% of the reading)
SEV:0-10%: ±(0.15%+5% of the reading)
DES:0-22%: ±(0.15%+5% of the reading)
Agent identification time: < 20s(typical < 10s)
AWRR range: 0-150bpm
AWRR accuracy: +/-1bpm
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>5MΩ
Noise(RTI)<2μV(0.25~50Hz)
Input signal range: ±1Mv
EEG bandwidth between: 0.25Hz~110Hz

NMT(Optional)

Microprocessor-controlled
Stimulation Mode: TOF, TOFS, PTC, 1Hz Twitch, 0.1Hz Twitch ,DBS DBS3.3 and 3.2(Double Burst) , Tetanic Stimulation (Burst), 5s – 50Hz or 100Hz
Output (accuracy±5% of full scale value)
Surface electrodes:
Constant current,0-60mA(0-12/18μC) up to 5KOhm.
Monophasic, 200μs or 300μs pulse width
Needle electrodes:
Constant current,0-6mA(0-0.24μC) up to 5KOhm.
Monophasic, 40μs pulse width
Acceleration transducer: Accuracy±5% of full scale value
Temperature sensor: Range 20.0-41.5℃(accuracy±5℃)

Operation Environment

Power: AC 100-250V, 50/60Hz
Temperature: 5-40℃
Humidity: <80%
Patient Range: Adult, Pediatric, Neonate

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