



Patient Monitoring Solutions







CETUS x15 Critical Care Patient Monitor

Features

- 15.6" High resolution TFT LCD Touch screen
- 10 waveform display, up to 12-lead ECG analysis
- Useful calculation (Hemodynamic, Drug Dose, Oxygenation, Ventilation)
- Pacemaker detection
- ST & arrhythmia analysis
- SpO2 support PVI and PI, low perfusion 0.2%
- Aspect BISx module, NMT module optional
- Wired/Wireless CMS, support HL7 protocol to HIS
- SpO2 pulse-tone modulation (Pitch Tone)
- VGA support external display
- Graphical & tabular trend review (120 hours)
- 48 hours full disclosure wave review for each patient



CETUS x15 Critical Care Patient Monitor

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

Configuration: ECG, SpO2, NIBP, TEMP, Resp, PR; Li-ion battery

Optional: Touch-Screen, 12-lead ECG, Masimo SpO2, 2/4/6 IBP, C.O., EtCO2, Multi-Gas, BIS, NMT, VGA, Thermal Recorder, Wired/Wireless CMS



Masimo SET® SpO2

Provides anti-motion and anti-low perfusion SpO2 measurement.



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 Phasein IRMA™/ISA

Sidestream/Mainstream EtCO2
Allows selection of the modality best suited to the application, monitoring with infrared absorption technique.



NMT

Connectivity for Xavant Stimpod NMS 450X



IBP

2-4 Channel, support IBP waveform overlapping display



C.O.

Cardiac Output

Technical Specifications

Display

15.6" TFT (touch screen optional)

Resolution: 1366 x 768

Number of traces: 10 waveforms

I/O

LAN: 1 standard RJ45 port

WLAN: IEEE 802.11b/g/n

USB: 2 USB connectors

SD: 1 SD card socket

VGA: 1 VGA monitor connector

Output: 1 connector for Nurse call,

Defib Sync Analog Output

ECG

Lead type: 3-lead, 5-lead, 12-lead

ECG waveform: 2 channels, 7 channels, 12 channels

Display sensitivity: 2.5 mm/mV (×0.25), 5 mm/mV (×0.5), 10 mm/mV (×1.0), 20 mm/mV (×2.0)

Wave sweep speed: 6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s

Bandwidth

Diagnostic mode: 0.05 Hz~100 Hz

Monitor mode: 0.5 Hz~40 Hz

Surgery mode: 1 Hz~20 Hz

Strong filter mode: 5Hz~20 Hz

CMRR>100 dB

Technical Specifications

Notch: 50/60 Hz notch filter can be set to on or off

Differential input impedance >5MΩ

Electrode polarization voltage range: ±400mV

Baseline recovery time <3s after defibrillation (in monitor and surgery mode)

Calibration signal: 1 mV (peak - peak), accuracy ±3%

RESP

Measurement method: Thoracic electrical bioimpedance

Rate: 0 – 150 bpm

Measuring lead: Lead I, II

Wave gain: ×0.25, ×0.5, ×1, ×2

Respiratory impedance range: 0.5-5 Ω

Baseline impedance: 500-4000 Ω

Gain: 10 grades

Scan speed: 6.25 mm/s, 12.5 mm/s, 25 mm/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%

Resolution: 1%

Accuracy: ±2% (70-100%, Adult/Pediatric);
±3% (70-100%, Neonate);
0-69%, unspecified

Refreshing Rate: 1s

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: 30~254 bpm

Resolution: 1 bpm

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: 20~40 s

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

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Technical Specifications

Range of Mean pressure:	Adult	20-230
	Pediatric	20-165
	Neonatal	20-105

Measurement accuracy

Maximum average error: ± 5 mmHg

Maximum standard deviation: 8 mmHg

Resolution: 1 mmHg

Interval: 1, 2, 3, 4, 5, 10, 15, 30, 60, 90, 120, 180, 240, 480 minutes

Overpressure protection: Software and hardware, double safety protection

Cuff pressure range: 0-280 mmHg

IBP (Optional)

Channel: 2, 4 or 6-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

T1: -1 to 27

Accuracy: C.O.: $\pm 5\%$ or ± 0.1 L/min, whichever is greater

TB, T1 ± 0.5 (without sensor)

Standard Mainstream CO2 (Optional)

Measurement range: 0-19.7%, 150 mmHg, or 0-20 kPa

Resolution: 0.1 mmHg

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 8 s, full accuracy within 20 s

Standard Sidestream CO2 (Optional)

Measurement range: 0-20% (0-150 mmHg)

Accuracy: $< 5.0\%$ CO₂: ± 2 mmHg

$> 5.0\%$ CO₂: $< 6\%$ of reading

Respiration rate: 2~150 BPM

Respiration rate accuracy: $1\% \pm 1$ BPM

Warm-up time: 97% within 45 s, full accuracy within 10 min.

Rise times ($t_{10-90\%}$): About 100 ms, when flow is 100 ml/min, adult water trap, 1.5 m sampling tube

Delay time: < 3 sec when flow is 100 ml/min, adult water trap, 1.5 m 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: 25 mm/s, 50 mm/s

Number of waveform channels: 3



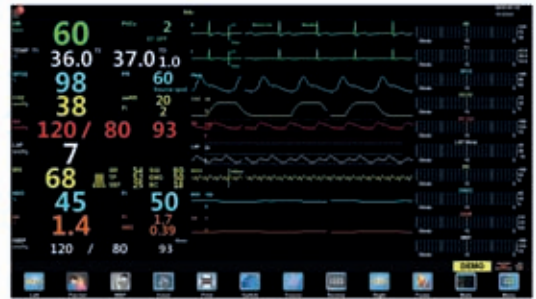
12-lead ECG



4 channel IBP



OxyCRG screen



Dynamic trends

Phasein 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: 200 ms, typical at 50 ml/min flow rate
 Total response time: within 3 seconds (with 2 m Nomoline sampling line)
 AWRR Range: 0-150 bpm
 AWRR Accuracy: ± 1 breath

Phasein 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: 0-150 bpm
 AWRR Accuracy: ± 1 breath

Phasein IRMA™ AX+ Mainstream Multi-gas (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: <20 s (typical <10 s)
 AWRR range: 0-150 bpm
 AWRR accuracy: +/-1bpm
 Apnea time: 20~60 s

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Technical Specifications

Aspect BISx module (Optional)

Parameter Measurement:

BC: 0~30 (Only limited to the combined use of an external sensor with a BIS module)

EMG: 30~55 dB (bar chart) with intensity between 30 dB and 80 dB (tendency chart)

BIS: 0~100

SQI: 0%~100%

SR: 0%~100%

SEF: 0.5 Hz~30 Hz

TP: 40~100 Db

EEG Measurement:

Input impedance >5 MΩ

Noise (RTI) <2 μV (0.25~50 Hz)

Input signal range: ±1 Mv

EEG bandwidth between: 0.25 Hz~110 Hz

NMT Xavant Stimpod NMS 450X (Optional)

Supports Train-of-Four (TOF),

Post-Tetanic-Count (PTC),

Double Burst (DB),

Tetanus and Twitch stimulation modes

for accurate NeuroMuscular Transmission Monitoring

Acceleration transducer: Accuracy ±5% of full scale value

Temperature sensor: Range 20.0-41.5°C (accuracy ±5 °C)

Operation Environment

Power: AC 100-250 V, 50/60 Hz

Temperature: 5-40 °C

Humidity: <80%

Patient Range: Adult, Pediatric, Neonate

Battery backup: Standard 2-3 hrs (2.600 mAh), optional 3-5 hrs (4.800 mAh)



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