



## Patient Monitoring Solutions





## CETUS x1 Advanced Patient Monitor

### Features

- 15.6 /17/19 switchable TFT LCD Touch Screen
- Aluminium material shell
- Fanless design suitable for quiet care environment
- 10 waveform display, up to 12-lead ECG analysis
- Useful calculation (Hemodynamic, Drug Dose, Oxygenation, Ventilation)
- 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 h full disclosure wave review for each patient
- Modular configuration for sensors and functions

[www.axcentmedical.com](http://www.axcentmedical.com)

# CETUS xl Advanced Patient Monitor

## Multiple parameter options satisfy the needs of ICU, CCU, NICU

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

Optional: 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

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,

De b 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: 6.25mm/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

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## TECHNICAL SPECIFICATIONS

CMRR>100dB

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

Differential input impedance >5 M $\Omega$

Electrode polarization voltage range:  $\pm$ 400 mV

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

Calibration signal: 1 mV (peak - peak), accuracy  $\pm$ 3%

### RESP

Measurement method: Thoracic electrical bioimpedance

Rate: 0-150 bpm

Measuring lead: Lead I, II

Wave gain:  $\times$ 0.25,  $\times$ 0.5,  $\times$ 1,  $\times$ 2

Respiratory impedance range: 0.5-5  $\Omega$

Baseline impedance: 500-4000  $\Omega$

Gain: 10 grades

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

### TEMP

Accuracy:  $\pm$ 0.1  $^{\circ}$ C or  $\pm$ 0.2  $^{\circ}$ F (without probe)

Measurement range: 5~50  $^{\circ}$ C (41~122  $^{\circ}$ F)

Channel: Two channels

Resolution: 0.1  $^{\circ}$ C

Parameters: T1, T2 and TD

### SpO2

Measurement range: 0-100%

Resolution: 1%

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

Refreshing Rate: 1s

### Masimo SET<sup>®</sup> 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

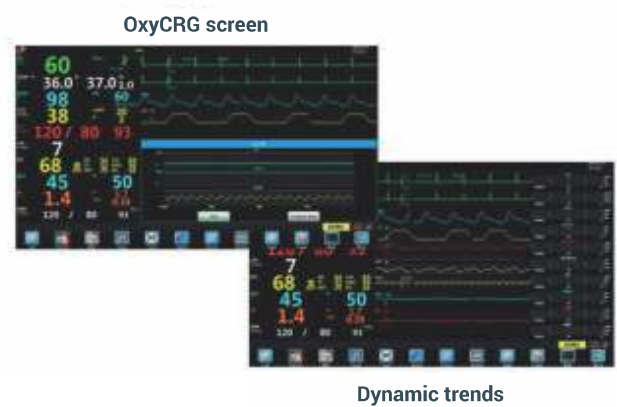
Range: 30~254 bpm

Resolution: 1bpm

Accuracy:  $\pm$ 2bpm (non-motion)  
 $\pm$ 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:  $\pm 5$  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: 0-280mmHg

### 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: 1 mmHg  
 Accuracy:  $\pm 2\%$  or  $\pm 1$  mmHg, whichever is greater (without sensor)  
 Sensitivity: 5uV/mmHg/V  
 Impedance range: 300 to 3000  $\Omega$

### C.O. (Optional)

Method: Thermodilution  
 Range: C.O.: 0.2 to 20 L/min  
           TB: 23 to 45 °C  
           T1: -1 to 27 °C  
 Accuracy: C.O.:  $\pm 5\%$  or  $\pm 0.1$ L/min, whichever is greater TB, T1:  $\pm 0.5^\circ\text{C}$  (without sensor)

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## TECHNICAL SPECIFICATIONS

### Standard Mainstream CO2 (Optional)

Measurement range: 0-19.7%,  
150 mmHg, or 0-20kPa  
Resolution: 0.1 mmHg  
Measurement accuracy  
    0 - 40 mmHg:  $\pm 2$  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:  $1\% \pm 1$  bpm  
Warm-up time: 97% within 8s, full accuracy  
within 20s

### Standard Sidestream CO2 (Optional)

Measurement range: 0-20% (0-150 mmHg)  
Accuracy:  $< 5.0\%$  CO<sub>2</sub>:  $\pm 2$  mmHg  
             $> 5.0\%$  CO<sub>2</sub>:  $< 6\%$  of reading  
Respiration rate: 2~150 BPM  
Respiration rate accuracy:  $1\% \pm 1$ BPM  
Warm-up time: 97% within 45s, full accuracy  
within 10 min  
Rise times (t<sub>10-90%</sub>): About 100 ms, when  
flow is 100 ml/min, adult water trap 1.5m  
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

### Phasein ISA Sidestream CO2 (Optional)

Warm-up time: Full accuracy within 10 se-  
conds  
Sampling flow rate: 50ml/min( $\pm 10$ /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:  $\pm 1$  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:  $\pm 1$  breath

### Phasein IRMA™ AX+ Mainstream Multi-gas (Optional)

Gas: CO<sub>2</sub>, N<sub>2</sub>O, HAL, ISO, ENF, SEV, DES with  
automatic identification  
Warm-up time: Full accuracy within  
20 seconds for IRMA AX+  
CO<sub>2</sub> Accuracy:  
    0-10%:  $\pm (0.2\%+2\%$  of the reading)  
    0-15%:  $\pm (0.3\%+2\%$  of the reading)  
N<sub>2</sub>O Accuracy:  
0-100%:  $\pm (2\%+2\%$  of the reading)  
HAL, ISO, ENF:  
0-8%:  $\pm (0.15\%+5\%$  of the reading)



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

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: 0-150 bpm  
 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: 0.5 Hz~30Hz  
 TP:40~100 Db  
 EEG Measurement: Input impedance >5 M $\Omega$   
 Noise (RTI) <2 ,V (0.25~50 Hz)  
 Input signal range:  $\pm$ 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

### 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)



# Patient Monitoring Solutions

For more information, please contact us.

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