

# C100 Cardiovascular Monitor

## Specification



### Standard Configuration:

12 Lead -ECG,RESP, Dual-Temp, Comen SPO2,NIBP

### Optional Configuration:

Nellcor/Masiom SPO2, 4-IBP,EtCO2 module, ICG,AG,C.O. , C100A  
Telemetry monitor ,built-in WIFI module

### Safety Standards

ISO 13485:2003 approved, CE marking according to MDD93/42/EEC

### Physical Characteristics

Product Size:	305mm×168mm×308.4mm
Net Weight:	3.5kg (standard configuration)
Display:	
Type :	12" color TFT touch screen
Resolution:	800×600
waveforms:	up to 12 waveforms
External display	1 display through VGA

### Operation Environment

Temperature:	5-40°C
Humidity:	lower than 80%
Power requirement:	
AC Volatage:	AC100-250V, 50/60Hz
Current:	1.9A~0.8A
Battery:	
Battery Type:	Lithium-ion
Battery Capacity:	2600mAh 16.8V
Battery working time	2 hours
Battery Recharging Time:	Maximum 4 hours for charging;
Date storage	
Alarm Event Recall:	500 groups

NIBP Recall:	2000 groups
Trend Graph:	150 hours
Trend Table:	150 hours
Alarm Event Recall: (+ARR recall )	500 groups
ECG recall	7×24 hours of 12 lead ECG (8G SD card)
EDG diagnostic report	3000 groups

### Interface

Connectors:	USB interface, and PCL printer can be connected
	RJ45 Ethernet interface
	Nurse Call interface.
	AC interface
	Grounding pole
	DVI-D interface
	Multi-function interface to connect with sub-monitor and plug in slot
	IR module interface, it supports the following modules: CO2, dual IBP, AG, ICG,C.O.

### Recorder:

Trace:	Waveform: 6 channels for patient monitor , 12 channels for ECG
Type :	Built-in; thermal array
Speed:	Speed:25mm/s,50mm/s
Record width:	216 mm
Printer:	External printer supported

## ECG

Lead Type	Cardio Tec™ 12-leads ECG Analysis, 5 Lead and 3 lead selectable
Lead selection:	3-lead: I; II; III 5-lead: I; II; III; aVR; aVL;aVF; V 12-Lead I; II; III; aVR; aVL;aVF; V1-V6.
Gain Selection:	2.5mm/mV ,5.0mm/mV,10mm/mV, 20mm/mV, auto
Sweep Speed:	6.25,12.5, 25, 50mm/s
Bandwidth :	MON Mode: 0.5-40Hz DIA Mode: 0.05-130Hz OPE Mode:1-20Hz
Defib. Protection:	ST Mode: 0.05-40HZ Withstand 4000VAC/50Hz voltage in isolation ,Again electrosurgical interference and defibrillation
Recovery time :	3s
ST SEGMENT detection:	-2.0mV - +2.0Mv
Arrhythmia Analysis :	Yes
pacemaker detection:	detectable
Alarm:	Yes, audible and visual alarm, alarm events recallable
12 lead ECG Analysis:	yes

## Heart Rate

Range:	Adult: 15-300bpm Pediatric:15-350bpm Neonate:15-350bpm
Resolution:	1 bpm
Accuracy:	±1% or ±1bpm (whichever is greater)

## Respiration

Method:	impedance method
RR measurement range:	Adult: 6-120bpm Pediatric/Neonate: 6 -150bpm
Resolution:	±1 bpm
Accuracy:	6-150rpm:±1rpm or 1%, whichever is greater 0-6rpm: unspecified
RESP Apnea Alarm:	Adult :10s-60s Child and Neonate: 10s-20s
Alarm:	Audible and visual alarm; alarm events recallable
Sweep Speed:	6.25,12.5,25 mm/s
Gain Selection:	X0.25, X0.5, X1, X2,X3,X4,X5

## Nellcor SPO2

Measurement & alarm	0~100%
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range:

Resolution:	1%
Accuracy:	±2% (70-100%, MAX-A, MAX-AL, MAX-N, MAX-P, MAX-I and MAX-FAST sensors); ±3% (70-100%, D-YS, DS-100A, OXI-A/N and OXI-P/I sensors); 0-69% unspecified

PR Measurement Range: 20~300bpm

Resolution:	1bpm
Accuracy:	±3bpm
Alarm range:	20-250bpm

## Masimo SPO2

Measurement & alarm range	1~100%
Resolution:	1%
Accuracy:	±2% (70~100%,Ped, non-motion+ ±3% (70-100%, Neo, non-motion); 0-69% unspecified
Alarm range	0~100%
Pulse rate:	Range: 25~240bpm Resolution:1bpm Accuracy: ±3bpm(non-motion) ±5bpm(motion) Alarm range:25~240bpm

## Comen SPO2

Measurement & alarm range	1~100%
Resolution:	1%
Accuracy:	±2% (70~100%,Ped, non-motion+ ±3% (70-100%, Neo, non-motion); 0-69% unspecified
Alarm range	0~100%
Pulse rate:	Range: 20~300bpm Resolution:1bpm Accuracy: ±3bpm(non-motion) ±5bpm(motion) Alarm range:20~300bpm

## NIBP

Method	Automatic oscillometric
Work mode:	Manual / Automatic/Continuous
Measurement Unit:	mmHg / Kpa selectable
Measurement types:	Systolic, Diastolic, Mean
Range of systolic pressure:	Adult Mode:40-270mmHg Pediatric Mode:40-200mmHg

Range of diastolic pressure:	Neonate Mode 40-135mmHg Adult Mode:10-215mmHg Pediatric Mode:10-150mmHg
Range of mean pressure:	Neonate Mode 10-100mmHg Adult Mode:20-235mmHg Pediatric Mode:20-165mmHg Neonate Mode 20-110mmHg
Over-pressure protection:	both Hardware and software over pressure protection
Accuracy:	Less than $\pm 5$ mmHg
Resolution	1mmHg
PR from NIBP:	40-240bpm

#### Temperature (Dual Channel)

Measurement range:	0-50°C (32 to 122F)
Resolution:	0.1°C
Accuracy:	$\pm 0.1^\circ\text{C}$ (without probe)
Channel:	2 channels / T1, T2, TD (Temperature Difference)

#### IBP

Channel	4 channels
Measured Pressure	ART,PA,CVP,RAP,LAP,ICP,P1, P2
Measurement Range:	-10mmHg~300mmHg
Alarm Range:	-50mmHg~300mmHg
Accuracy:	$\pm 2\%$ or $\pm 1$ mmHg, whichever is greater

#### EtCO2(Sidestream)

CO2 Measurement Range:	0 -150 mm Hg, 0 to 79%, 0 to 20kPa (at 760mmHg)
Accuracy:	$\pm 2$ mm Hg (0 – 40 mm Hg) $\pm 5\%$ of reading (41 – 70 mm Hg) $\pm 8\%$ of reading (71 –100 mm Hg) $\pm 10\%$ of reading (101 –150 mm Hg)
awRR range	0-150rpm
RR accuracy:	$\pm 2$ rpm (0-70rpm) $\pm 5$ rpm (>70rpm)
Response time:	<240msec (10% to 90%)
Delay time:	<2s

#### EtCO2(mainstream)

CO2 Measurement Range:	0 -150 mm Hg, 0 to 79%, 0 to 20kPa (at 760mmHg)
Accuracy:	$\pm 2$ mm Hg (0 – 40 mm Hg) $\pm 5\%$ of reading (41 – 70 mm Hg) $\pm 8\%$ of reading (71 –100 mm Hg) $\pm 10\%$ of reading (101 –150 mm Hg)
awRR range	0-150rpm
awRR precision	$\pm 2$ rpm (0-70rpm) $\pm 5$ rpm (>70rpm)
Delay time:	<2s

#### Multi-Gas/O2

Method:	Infrared Absorption
Gas sorts:	CO <sub>2</sub> ,O <sub>2</sub> ,N <sub>2</sub> O,Des,Iso,Enf,Sev,Hal, (optional paramagnetic sensor)
Measurement range:	CO <sub>2</sub> : 0-15 vol% $\pm(0.2$ vol% + 2 % of the reading) N <sub>2</sub> O: 0-100 vol% $\pm(2$ vol% + 2 % of the reading) HAL, ISO, ENF: 0-8 vol% $\pm(0.15$ vol% + 5 % of the reading) SEV : 0-10 vol% $\pm(0.15$ vol% + 5 % of the reading) DES: 0-22 vol% $\pm(0.15$ vol% + 5 % of the reading) O <sub>2</sub> : 0-100vol% $\pm(1$ vol% + 2 % of the reading)
Data output:	Fi and Et values
Respiratory rate:	0-150rpm
Preheating time:	ISA CO <sub>2</sub> : < 10s, ISA OR+/AX+: < 20s
Alarm:	User selectable alarm limits for all measurement
others:	Up to 4 waveforms displayed Agent mixture detection MAC value displayed

#### Cardiac Output(C.O.)

Method:	Thermodilution
Measurement range:	C.O.: 0.1~20L/min BT: 25~43°C IT: 0~27°C
Resolution:	C.O.: 0.1L/min BT、IT:0.1°C
Accuracy:	C.O.: $\pm 5\%$ or $\pm 0.1$ L/min, whichever is greater BT、IT: $\pm 0.1^\circ\text{C}$ (no sensor)
Alarm Range:	BT Hi limit: (LO limit +0.1) ~43°C (C.O.) BT Lo limit:23.0~(Hi limit-0.1) °C Step: 0.1°C

#### Impedance Cardiography (ICG)

Method:	Thoracic Bio-impedance measurement
Measurement range:	SV: 5~250 ml/b HR: 40~250 bpm C.O.: 1.4~15L/min
Accuracy:	SV: unspecified HR: $\pm 2$ bpm C.O: unspecified
Alarm range:	CI: HI (LO+0.1) ~15.0 L/min/m <sup>2</sup>

LO 0~(HI-0.1)L/min/m<sup>2</sup>  
 TFC: HI (LO+1) ~150/KΩ  
 LO 10~(HI-1) KΩ

Alarm Deviation

CI:±01. L/min/m<sup>2</sup>  
 TFC:±1 KΩ

COMEN, one of the leading medical device manufacturers in China, and admitted to be the quickest developing company in medical industry.

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