

Specification: C80



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2020 V 1.4

Patient Monitor

C80



Standard Configuration:

5-lead ECG, RESP, Temp (Single Channel), COMEN SpO2, NIBP, HR

Optional Configuration:

Dual-IBP, EtCO2, AG, ICG, C.O., BIS, Nellcor/Masimo SpO2, 3/12-lead ECG, Thermal Recorder, Dual-Temp, Suntech NIBP, Trolley, Wall mount, Ground wire

Safety Standards:

IEC 60601-1 IEC 60601-1-8 IEC 60601-2-27 EN 1060-3 IEC 80601-2-30 IEC60601-2-34 IEC60601-2-49 ISO 80601-2-56 ISO 80601-2-61

Physical Characteristics:

Product Size:	344mm*291mm*165mm
Weight:	3.9kg
Display:	12.1" color TFT touch screen
Resolution:	800*600
Trace:	10 waveforms
IP grade	IPX1

Operation Environment:

Working Temperature	5-40°C
Humidity:	≤93%
Power Supply	100-240V~, 50/60Hz±1Hz
Battery Type:	Rechargeable Lithium-ion battery
Battery Capacity:	2200mAh (optional: 4400mAh)
Battery Recharging Time:	Maximum 5.5 hours for charging;
Battery backup:	2 hours for continuous working

Indicator:

One alarm indicator

Power indicator
Battery indicator
QRS beep and alarm sound
Operating key sound

Interface:

Parameter cable interface
AC power input socket
Two USB port
RJ45 port
Multi-functional interface
VGA output

Optional

Data storage

Alarm Event Recall:	200 groups
Wave Recall:	6 hours (8 waves)
NIBP Recall:	2000 groups
Trend Graph:	160 hours
Trend Table:	160 hours
Power-off storage:	Yes
Alarm:	User-adjustable High and Low 3-level Limits; Prioritized audible and visual alarm
Network:	Connected to Central Monitoring System by hardwire/wireless

Recorder:

Type:	Built-in; Thermal array
Channel:	3 channel waveforms
Speed:	25mm/s, 50mm/s
Record width:	50mm
Real-time record time	8s, 16s, 32s or continual
Alarm record	Yes

Respiration:

Method:	RA-LL Impedance Method
RR measurement	
Range	Adult: 0-120 rpm Pediatric/Neonate: 0-150 rpm
Accuracy:	7~150rpm: ± 2 rpm or 2%, whichever is greater 0-6rpm: unspecified
Resolution:	1 rpm
RESP Apnea	10s-60s (Adu); 10s-40s (Ped/Neo)
Alarm:	Audible and visual alarm; alarm events reviewable
Sweep Speed:	6.25, 12.5, 25mm/s
Gain Selection:	X0.25, X0.5, X1, X2, X4

ECG:

Lead Type:	CardioTec™ 5-leads ECG Analysis, 12-Lead and 3-leads selectable
Lead selection	12-Lead I; II; III; aVR; aVL; aVF; V1-V6. 5-lead: I; II; III; aVR; aVL; aVF; V 3-lead: I; II; III
Waveform	5-lead: 2 -channel 3-lead: 1 -channel
Gain Selection:	X0.125, X0.25, X0.5, X1, X2, X4, auto error $< \pm 5\%$
Sweep Speed:	6.25, 12.5, 25, 50mm/s, error $\leq \pm 10\%$
Resp, lead disconnection detection and active noise control:	AC waveform: Current: $< 0.1\mu A$; Frequency: 64kHz, $\pm 10\%$
CMRR	≥ 105 dB
Heart Rate measurement	
Range:	Adult: 15~300bpm Pediatric/Neonate: 15~350bpm
Accuracy:	$\pm 1\%$ or ± 1 bpm (whichever is greater)
Protection:	Withstand 4000VAC/50Hz voltage in isolation, Against electrosurgical interference and defibrillation
Accuracy:	$\pm 1\%$ or ± 1 bpm (whichever is greater)
Band width:	Monitoring Mode: 0.5-40Hz Diagnosis mode: 0.05-150Hz Surgery mode: 1-20Hz ST mode: 0.05-40Hz

ST SEGMENT

detection:	-2.0mV~+2.0mV (Automatic)
Arrhythmia	
Analysis:	26 types
Pacemaker	
detection:	Detectable
Alarm:	Yes, audible and visual alarm, alarm events reviewable

12 lead ECG	
Analysis:	Yes

NIBP:

Method	Automatic oscillation
Work mode:	Manual / Automatic/Continual (5min, not applicable to neonates)
Measurement time:	Adjustable (1-480min)
Maximum measurement time	Adu/Ped: 120s; Neo: 85s
Measurement Unit:	mmHg / kPa selectable
Measurement types:	Systolic, Diastolic, Mean
Range of systolic pressure:	Adult Mode: 40-270mmHg Pediatric Mode: 40-200mmHg Neonate Mode: 40-135mmHg
Range of diastolic pressure:	Adult Mode: 10-215mmHg Pediatric Mode: 10-150mmHg Neonate Mode: 10-100mmHg
Range of mean pressure:	Adult Mode: 20-235mmHg Pediatric Mode: 20-165mmHg Neonate Mode: 20-110mmHg
Static pressure range and accuracy:	0~300mmHg (0kPa~40.0kPa) ± 3 mmHg (± 0.4 kPa)
Over-pressure protection:	Adult Mode: 297mmHg Pediatric Mode: 240mmHg Neonate Mode: 147mmHg Accuracy: ± 3 mmHg
Initial pressure range (mmHg):	Adult: 80~240; Pediatric: 80~200; Neonate: 60~120

Alarm: Systolic, Diastolic, Mean
PR from NIBP: Measurement & alarm range: 40-240bpm
Resolution: 1bpm
Accuracy: ± 3 bpm or $\pm 3\%$, whichever is greater

Nellcor SpO₂:

Measurement
Range: 0-100%
Alarm Range: 20-100%
Resolution: 1%
Accuracy: $\pm 2\%$ (70-100%, Adu/Ped, non-motion)
 $\pm 3\%$ (70-100%, Neo, non-motion)
1-69% unspecified
Alarm Range: 20-100%
PR Measurement
Range: 20-300bpm
Resolution: 1bpm
Accuracy: ± 3 bpm (20-250bpm);
Unspecified (251-300bpm)
Alarm Range: 20~300bpm

Masimo SpO₂:

Measurement & alarm Range: 1~100%
Resolution: 1%
Accuracy: $\pm 2\%$ (70-100%, Adu/Ped, non-motion)
 $\pm 3\%$ (70-100%, Neo, non-motion)
1-69% unspecified
Alarm range: 1~100%
PR Measurement
Range: 25~240bpm
Resolution: 1bpm
Accuracy: ± 3 bpm (stationary)
 ± 5 bpm (motional);
Alarm range: 25~240bpm
Perfusion index: 0.02~20%
Resolution: 0.01% (within 0.02%~9.99% range) or 0.1% (within 10.0%~20.0% range)

COMEN SpO₂:

Measurement & alarm Range: 0~100%

Resolution: 1%
Accuracy: $\pm 2\%$ (70~100%, Adu/Ped, non-motion)
 $\pm 3\%$ (70-100%, Neo, non-motion)
Unspecified (1-69%)

Data averaging and other signal

processing time: 2s
Data refresh rate: 8s

PR Measurement

Range: 20--254bpm
Resolution: 1bpm
Accuracy: ± 2 bpm
Alarm range: 20~254bpm
Perfusion index: 0.05%~20%

Resolution: 0.01% (within 0.05%~9.99% range) or 0.1% (within 10.0%~20.0% range)

Temperature (Dual Channel)

Range: 0-50°C
TEMP sensor: Skin/rectal TEMP sensor
Resolution: 0.1°C
Accuracy: $\pm 0.1^\circ\text{C}$ (exclusive of error of sensor)
Channel: T1, T2, TD (Temperature Difference)

EtCO₂

Unit: mmHg, kPa
Measurement range: 0mmHg~150mmHg
Resolution: 1mmHg or 0.1kPa or 0.1%
Accuracy: 0mmHg ~40mmHg should be ± 2 mmHg;
41mmHg ~70mmHg should be $\pm 5\%$ ×reading;
71mmHg ~100mmHg should be $\pm 8\%$ ×reading;
101mmHg~150mmHg should be $\pm 10\%$ ×reading

Oxygen compensation: 0~100 mmHg
Equilibrium gas: Helium, room air, nitrous oxide

IBP

Channel: 2 Channels

Measured Pressure:	ART, PA, CVP, RAP, LAP, ICP, LV, AO, UAP, BAP, FAP, UVP, IAP, P1, P2, P3, P4	HAL, ISO, ENF: 0~8%: \pm (0.15%+reading \times 5%); 8~25vol%: unspecified
Measurement Unit:	mmHg/ kPa selectable	SEV: 0~10%: \pm (0.15%+reading \times 5%); 10~25vol %: unspecified
Measurement Range:	ART: 0~300mmHg PA: -6~120 mmHg CVP: -10~40mmHg RAP: -10~40mmHg LAP: -10~40mmHg ICP: -10~40mmHg LV: 0~300mmHg AO: 0~300mmHg UAP: 0~300mmHg BAP: 0~300mmHg FAP: 0~300mmHg UVP: -10~ 40mmHg IAP: -10~40mmHg P1, P2, P3, P4: -50~300mmHg	DES: 0~22%: \pm (0.15%+reading \times 5%); 22~25%: unspecified O2: 0-100%: \pm (1%+reading \times 2%) Fi and Et values CO2: 1mmHg awRR: 1rpm
Accuracy:	\pm 2% or \pm 1mmHg, whichever is greater	For all measured values complies with EN ISO 21647:2004 and EN 864:1996
Resolution:	0.1kPa or 1mmHg (-50mmHg~300mmHg)	EtCO2: 0mmHg~190mmHg Fi CO2: 0mmHg~190mmHg AwRR: 2mmHg~150mmHg EtO2: 18% ~ 100% FiO2: 18% ~ 100% EtN2O: 0% ~ 100% FiN2O: 0% ~ 82% EtHal/EtEnf/EtIso/EtSev/EtDes: 0% ~ 25% FiHal/FiEnf/FiIso/FiSev/FiDes: 0% ~ 25%
Alarm Range:	-50mmHg~300mmHg	
Pressure sensor:	sensitivity: 5 μ V/V/mmHg Impedance range: 300~3000 Ω	
PR from IBP:	Measurement & alarm range: 20bpm~350bpm Resolution: 1bpm Accuracy: \pm 1bpm or \pm 1%, whichever is greater	Others: Up to 4 waveforms displayed MAC value displayed

AG

AG (complies with ISO 80601-2-55)

Method:	Infrared Radiation Absorption	ISATM (AG) Sidestream Gas Analyzer
AG preheating time	Characteristics <20s	Method: Infrared gas measurement
Gas sorts:	CO2, N2O, DES, ISO, ENF, SEV, HAL, O2 (optional paramagnetic sensor)	No Breaths
Measurement range:	CO2: 0~15%: \pm (0.2kPa+reading \times 2%), 15~25%: unspecified N2O: 0~100 %: \pm (2kPa+reading \times 2%)	Timeout range Adult: 10s, 15s, 20s, 25s, 30s, 35s, 40s, 45s, 50s, 55s or 1min; Pediatric and neonate: 20s, 25s, 30s, 35s or 40s Accuracy: \pm 5s
		No Breath Alm
		Delay: 10s, 15s, 20s, 25s, 30s, 35s, 40s, 45s, 50s, 55s, 1min or Off
		Working conditions: ISA AX+: 0~50°C (32~122°F); ISA OR+: 5~50°C (41~122°F)
		Storage conditions RH -40~70°C (-40~158°F) <4kPa H2O (non-condensing) 95% RH, 30°C

Barometric pressure	52.5~120kPa (4572m)
Water treatment	Sampling tube: patented dehydration tube
Data output:	Fi and Et values
Waveform:	Display up to 4 gas concentration waveforms at a time
Diagnostic parameter:	Barometric pressure
ISA sensor:	2~9-channel NDIR gas analyzer (measurement range: 4~10μm)
Compensation:	CO2 broadening effect
Calibration	No calibration is required. The Monitor will auto perform zeroing when powered on and perform auto zeroing every 24h (ISACO2) or 8h (ISA AX+/OR+) subsequently.
Preheating time	ISA CO2: <10s; ISA OR+/AX+: < 20s
Rise time	CO2: ≤250ms; N2O: ≤ 350ms; anesthetic gases: ≤ 350ms; O2: ≤ 450ms
Overall system response time	<3s (2m sampling tube)
Respiration detection	Self-adaptive threshold (minimum CO2 concentration change: 1 vol%)
RR	0~150 breaths/min
Anesthetic gas threshold	Threshold of main anesthetic gases (ISA OR+/AX+): 0.15 vol%. The concentration of any identified anesthetic gas will be reported, even if it is lower than 0.15 vol%

Cardiac Output (C.O.)

Method:	Thermodilution
Range:	C.O.: 0.1~20L/min BT: 25~43°C IT: 0~25°C
Resolution:	C.O.: 0.01L/min BT, IT: 0.1°C
Accuracy:	C.O.: ±5% or ±0.1 L/min, whichever is greater

Alarm Range:	BT, IT: ±0.1°C (no sensor) BT Hi limit: (LO limit +0.4)-43°C BT Lo limit: 25.0~(Hi limit-0.4) °C Step: 0.1°C
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Impedance Cardiography (ICG)

Method:	Indirect measurement by the impedance cardiogram
Measurement range:	SV: 5~250 ml/ beat HR: 40~250 bpm C.O.: 1.4~15 L/min
Accuracy:	HR: ±2bpm C.O.: Unspecified SV: unspecified
Alarm range:	C.I.: 0~15.0L/min/m2 TFC: 10~150KΩ
Alarm Deviation	C.I.: ±0.1L/min/m2 TFC: ±1k Ω

BIS

Measurement range:	BIS: 0~100; Accuracy: 1% SQI: 0~100%; Accuracy: 1% EMG: 0~100dB; Accuracy: 1% ESR: 0~100%; Accuracy: 1%
Resolution:	1
Alarm range:	BIS: 0~99

Wall Mounting

Net weight:	3.1kg
Bracket:	275*150*165mm
Length (Support Arm)	330mm
Max. Slip	140mm
Rotation	180°

***Notice: Specifications subject to changes without prior notice. All rights reserved by COMEN**