COMEN

GEODIGITAL GROUP

MONITOR MULTIPARAMÉTRICO C50

1) MONITOR

CARACTERISTICA	TIPO
Electric shock protection type	Externally powered Class-I equipment; continuous operation equipment
Defibrillation-proof applied parts	defibrillation resistant equipment with internal power supply.
Electric shock protection level	Equipment with CF applied part (ECG, C.O. and IBP monitoring part) and BF applied parts (all other monitoring parts).
IP grade	IPX1
Work mode	Continuous operation equipment
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

2) REQUISITOS DEL ENTORNO DE TRABAJO

ITEM	ESPECIFICACIONES	
Working conditions	Ambient temperature	5℃~40℃
	RH	≤93%

	Barometric pressure	700hPa~1060hPa
Transport conditions	Please protect the monitor against violent impact, vibration, rain and snow in transport. The monitor should be Transported in a well-ventilated room without corrosive gas (ambient temperature: -20 ℃ ~60 ℃ ; RH: ≤93%; Barometric pressure: 700hPa~1060hPa).	
Storage conditions	The monitor should be packed and stored in a well-ventilated room without corrosive gas (ambient temperature: -20 ℃ ~60 ℃ ; RH: ≤93%; Barometric pressure: 700hPa~1060hPa).	

3) FUENTE DE ALIMENTACION

ITEM	ESPECIFICACIONES
AC input voltage	100~240V
AC input frequency	50Hz/60Hz
Power supply	Powered either by built-in battery or external AC.
Input power	60VA
Built-in battery	C80/50: Standard: 11.1V/2200mAh rechargeable lithium-ion battery, supplying power for at least 2 consecutive hours in normal use once fully charged. Optional: 11.1V 4400mAh rechargeable lithium-ion battery, supplying power for at least 4 consecutive hours in normal use once fully charged.
	C86: Standard: 11.1V 4400mAh rechargeable lithium-ion battery, supplying power for at least 4 consecutive hours in normal use once fully charged.
Charge time	11.1V 4400mAh: At least 4 hours from depletion to 90% charge in normal use. 11.1V/2200mA: At least 2 hours from depletion to 90% charge in normal use.
Defibrillation Synchronization	output +5V defibrillation synchronization signal during 100ms Max delay: ≤35ms; Pulse width: 100ms±10; Up/Down time≤1ms
Analog Output	Bandwidth: 0.5-40Hz; Max delay: ≤35ms; error: ±5%;

4) ESPECIFICACIONES GENERALES

ITEM	ESPECIFICACIONES
Dimension	C50: About 291.7mm×250 mm×146.5mm
Weight	C50: About 3.3kg(with battery）
LCD specification	C50: Size: 10.4 Inch Pixel :800×600

5) ESPECIFICACIONES EGC

ITEM	ESPECIFICACIONES
Applicable standards: IEC 60601-2-27.	
Lead mode	12-lead (R, L, F, N, C1, C2, C3, C4, C5, C6 or RA, LA, LL, RL, V1, V2, V3, V4, V5, V6)
Method of leads	I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
Waveform	2 -channel
Lead mode	5-lead (R, L, F, N, C; or RA, LA, LL, RL, V)
Method of leads	I, II, III, aVR, aVL, aVF, V

Waveform	2 -channel	
Lead mode	3-lead (R, L, F; or RA, LA, LL)	
Method of leads	I, II, III	
Waveform	1-channel	
Overload protection	Load 1V, power frequency, differential-mode AC voltage for 10s without damage (p-v)	
Resp, lead disconnection detection and active noise control	AC waveform: Current :<0.1μA; Frequency 64kHz, ±10%	
Auto identify the type of ECG leads.		
QRS wave amplitude and interval	Amplitude (p-v RTI)	0.5mV~5mV
	Width (adult)	70ms~120ms
	Width (neonate/child)	40ms~120ms
	Not respond to the signals:	a) with amplitude (p-v RTI) not exceeding 0.15mV (except in neonate/child mode); or b) with 10ms width (except in neonate/child mode) in case of 1mV amplitude.
Triggering threshold level	200μV (lead II)	
Power frequency voltage tolerance	>100μV(p-v)	
Drift tolerance	Triangular wave amplitude (p-v RTI)	4mV
	QRS wave amplitude (p-v RTI)	0.5 mV
	QRS wave width	100ms
	QRS wave recurrence frequency	80bpm
HR measurement range and error	Adult	15~300bpm
	Neonate/child	15~350bpm
	Error	±1% or ±1bpm in both 3-lead, 5-lead and 12-lead mode, whichever is greater.
Alarm limit range	Adult	15bpm~300bpm
	neonate/child	15bpm~350bpm
Alarm limit resolution	±1bpm	
Alarm limit error	±1bpm	
Alarm start time for asystole and high/low HR	<10s	
Input dynamic range	Input signal amplitude	±5mV
	Rate (RTI)	320mV/s
	DC offset voltage	-300~+300mV

	Output signal change	±10%	
	Failure display (attenuation prior to display)	Maximum attenuation: 50%	
Input impedance	Signal attenuation (0.67Hz~40Hz): ≤20%		
System noise (p-v RTI)	<25μV		
Multi-channel crosstalk	<5%		
Gain	1.25mm/mV, 2.5mm/mV, 5.0mm/mV, 10mm/mV, 20mm/mV, 40mm/mV, Auto. Manual replacement. Plus ±750mV DC polarization voltage; sensitivity change range: ±5%.		
	Gain change per minute	≤0.66%/min	
	Total gain change in 1h	≤±10%	
bandwidth	Surgery mode：1 Hz～20 Hz (-3.0dB～+0.4dB)； Monitoring Mode：0.5 Hz～40 Hz (-3.0dB～+0.4dB)； Diagnosis mode：0.05Hz～150 Hz (-3.0dB～+0.4dB)； ST mode：0.05Hz～40Hz(-3.0dB～+0.4dB)		
Time reference selection and accuracy	Time reference selection	Permanent display	25mm/s, 50 mm/s
		Non-permanent display	6.25mm/s, 12.5mm/s, 25 mm/s, 50 mm/s
	Maximum time reference error	±10%	
Output display	Channel width	30mm	
	Aspect ratio	0.4s/mV	
Input signal reconstruction accuracy	Use method A and method B in IEC 60601-2-27to determine the total system error and frequency response.		
	Total system error	±20% or ±100μV, whichever is larger.	
	Frequency response	Sinusoidal input	0.67~40Hz (attenuation: -3dB)
		Response to 20ms (width) triangular wave	0~25Hz attenuation in amplitude of wave peak
	Response to 0.3mV·s shock in the shock range	Offset (RTI)	≤0.1mV
		Slope (RTI)	≤0.30mV/s
	Electrode weighting factor	≥±5%	

	Hysteresis effect of 15mm offset	≤0.5mm
Calibration voltage	±5% error at 1mV	
Common mode rejection	<1mV (p-v RTI)	
Baseline control and stability	Recovery time after reset	3s
	Drift rate in 10s	10μV/s
	Baseline drift in 1h	≤500μV
	Baseline drift at working temperature	≤50μV/℃
Non-overshoot pacemaker pulse inhibition	Amplitude: ±2mV~±700mV; width: 0.1ms~2.0ms; if overshoot < 0.05α p, settling time < 5μs; start time, end time, rise time and fall time of pulse: ≤ 100μs; start time of pulse: 40ms or earlier before the start time of QRS wave; there is an identical pulse 150ms~250ms before the above pacemaker pulse.	
Inhibition of pacemaker pulse detector on quick ECG signals	Minimum input slew rate: 320mV/s RTI	
Pacemaker pulse display capability	Amplitude: ±2MV~±700MV; width: 0.5MS~2MS; maximum rise time: 100μS; the ECG display when the pacemaker pulse appears at 100/min.	≥0.2mV
ST segment measurement	Measurement range	-2.0mV-+2.0mV (-20.0 mm~+20.0 mm)
	Measurement error	-0.8mV~+0.8mV: ±0.02mV or ±10%, whichever is greater. Other ranges: not defined.
STalarm limit range	-2.0mV-+2.0mV	
ST alarm limit error	±0.1mV	
Resolution	0.01mV (0.1mm)	
Arrhythmia types	Asystole, ventricular fibrillation (VFIB)/ventricular tachycardia (VTAC), PVCs/min, R on T, VT>2, couplet, PVC, bigeminy, trigeminy, tachycardia (TACHY),bradycardia (BRADY), supraventricular tachycardia (SVT), extreme tachycardia, extreme bradycardia, missed beats, multiform PVC (multi. PVCs), VTAC, nonsustained VT (nonsus. VTAC), ventricular rhythm, heart pause, pause/min, irregular rhythm (irr. rhythm), ventricular bradycardia, atrial fibrillation, pacemaker not captured (PNC), pacemaker not paced (PNP).	
Leakage current	<10uA	
Electrosurgical interference inhibition	HR change caused by interference: ≤±10%	
ESU protection	Cut mode: 300W Condense mode: 100W Recovery time: ≤10s	

CALCULO HR	
Tall T-wave rejection capability	1.2mV
HR calculation	If all of the last 3 RR intervals are longer than 1200ms, the average of the last 4 RR intervals is the HR. In other cases, the average of the last 12 RR intervals (with the longest interval and shortest interval excluded) is the HR.
Cardiotachometer accuracy and response to arrhythmia	the HR is displayed as follows after the 20s stable segment: (bigeminy): 80±1bpm (slowly varying bigeminy): 60±1bpm (quickly varying bigeminy): 120±1bpm (two-way contraction): 90±2bpm
Response time for HR changes	the response time for a HR change, whether from 80bpm to 120bpm or from 80bpm to 40bpm, is less than 10s.
Tachycardia alarm start time	the waveform: 1 - range: 10s 0.5 - range: 10s 2 - range: 10s 1 - range: 10s 0.5 - range: 10s 2 - range: 10s

6) ESPECIFICACIONES RESP

ITEM	ESPECIFICACIONES		
Method	Thoracic impedance method		
RR measurement range and accuracy	Measurement range	Adult	0rpm-120rpm
		Child/neonate	0rpm-150rpm
	Measurement accuracy	7rpm~150rpm: ±2rpm or ±2%, whichever is greater. 0rpm~6rpm: not defined.	
RR alarm limit range and error	Adult	0rpm~120rpm	
	Neonate/child	0rpm~150rpm	
	Error	±1rpm	
No breath alarm limit range and error	Range	Adult: 110s、15s、20s、25s、30s、35s、40s、45s、50s、55s、1min Child/neonate: 10s、15s、20s、25s、30s、35s、40s	
	Error	±5s	
No breath alarm delay	10s、15s、20s、25s、30s、35s、40s、45s、50s、55s、1min、Off		
CVA identification	The Monitor will display the relevant alarm message when the HR is identical with the RR.		

7) ESPECIFICACIONES SPO2

ITEM	ESPECIFICACIONES
Display range	0%~100%
Display resolution	1%

Data averaging and other signal processing time	2s	
Data update time	8s	
Measurement accuracy	◆ Comen SpO_2: measurement range: 0%~100%; measurement accuracy: ±2% (adult/child, in non-motion state) or ±3% (neonate, in non-motion state) within the measurement range of 70%~100%. The measurement accuracy within the measurement range of 1%~69% is not defined. ◆ Masimo SpO_2: measurement range: 1%~100%; measurement accuracy: ±2% (adult/child, in non-motion state), ±3% (adult/child, in motion state) or ±3% (neonate, in motion or non-motion state) within the measurement range of 70%~100%. The measurement accuracy within the measurement range of 1%~69% is not defined. ◆ Nellcor SpO_2: measurement range: 0%~100%; measurement accuracy: ±2% (adult/child, in non-motion state) or ±3% (neonate, in non-motion state) within the measurement range of 70%~100%. The measurement accuracy within the measurement range of 0%~69% is not defined.	
Alarm limit range and accuracy	Range	Comen SpO_2:0%～100％ Masimo SpO_2:1%～100％ Nellcor SpO_2:20%～100％
	Accuracy	±1%
Perfusion index (PI)	Range for MasimoSpO_2 and Comen SpO_2: 0.02%~20%; accuracy: not defined. Resolution: 0.01% (within 0.02%~9.99% range) or 0.1% (within 10.0%~20.0% range).	

8) ESPECIFICACIONES PR

ITEM	ESPECIFICACIONES

Measurement range and accuracy	◆ Comen SpO_2 sensor: Measurement range: 20bpm~254bpm; resolution: 1bpm; measurement error: ±2bpm. ◆ Masimo SpO_2 sensor: Measurement range: 25bpm~240bpm; resolution: 1bpm; measurement error: ±3bpm (in non-motion state) or ±5bpm (in motion state). ◆ Nellcor SpO_2 sensor: Measurement range: 20bpm~300bpm; resolution: 1bpm; measurement error: ±3bpm within 20bpm~250bpm range. The measurement accuracy within 251bpm~300bpm range is not defined. ◆ NIBP sensor:Measurement range: 40bpm~240bpm; resolution: 1bpm; measurement error: ±3bpm or ±3%, whichever is greater. IBP sensor: Measurement range: 20bpm~350bpm; resolution: 1bpm; measurement error within 20bpm~350bpm range: ±1bpm or ±1%, whichever is greater (excluding the sensor error).
PR alarm limit range and accuracy	20bpm~350bmp ±1bpm

9) ESPECIFICACIONES TEMP

ITEM	ESPECIFICACIONES	
Measurement range and accuracy	Measurement range	0℃~50℃
	Measurement error	±0.1℃(excluding the sensor error)
Temp alarm limit range and error	Alarm limit range	0℃~50.0℃
	Alarm limit error	±0.1℃
Resolution	0.1°C	
Number of channels	2	
Operating mode	Direct mode	
Transient response	No greater than 40 seconds	

10) ESPECIFICACIONES CO_2

ITEM	ESPECIFICACIONES	
The $EtCO_2$ sensor complies with ISO 80601-2-55.		
Masimo $EtCO_2$ sensor (mainstream)		**Masimo $EtCO_2$ sensor (sidestream)**
CO_2 measurement range	0mmHg~190mmHg, 0~25% (at 760mmHg)	0mmHg~190mmHg, 0~25% (at 760mmHg)
CO_2 resolution	1mmHg, 0.1kPa or 0.1%	1mmHg, 0.1kPa or 0.1%
CO_2 accuracy	0~15%: ±(0.2%+reading×2%) 15~25%: not defined	0~15%: ±(0.2%+reading×2%) 15~25%: not defined
CO_2 alarm limit range	0~190mmHg	0~190mmHg
CO_2 alarm resolution	±0.1kPa or ±1mmHg	±0.1kPa or ±1mmHg
awRR measurement range	0~150rpm	0~150rpm
awRR measurement accuracy	±1rpm	±1rpm
awRR alarm limit range	0rpm~150rpm	0rpm~150rpm
awRR alarm resolution	1rmp	1rmp
No breath alarm limit range and	Range	Adult:10s、15s、20s、25s、30s、35s、40s、45s、50s、55s、1min

error		Child/neonate: 20s、25s、30s、35s、40s
	Error	±5s
No breathalarm delay	10s、15s、20s、25s、30s、35s、40s、45s、50s、55s、1min、Off	
Respironics/Nmed/Palconn $EtCO_2$ sensor (mainstream)		**Respironics/Nmed/Palconn $EtCO_2$ sensor (sidestream)**
CO_2 measurement range	0~150mmHg 0%~19.7% (0~20.0kPa)	0~150mmHg 0%~19.7% (0~20.0kPa)
CO_2 resolution	0~69mmHg: 0.1mmHg 70~150mmHg: 0.25mmHg	0~69mmHg: 0.1mmHg 70~150mmHg: 0.25mmHg
CO_2 accuracy	0~40mmHg: ±2mmHg 41~70mmHg: ±5%×reading 71~100mmHg: ±8%×reading 101~150mmHg: ±10%×reading	0~40mmHg: ±2mmHg 41~70mmHg: ±5%×reading 71~100mmHg: ±8%×reading 101~150mmHg: ±10%×reading
CO_2 alarm limit range	0~150mmHg	0~150mmHg
CO_2 alarm resolution	±0.1kPa or ±1mmHg	±0.1kPa or ±1mmHg
awRR measurement range	0~150rpm	0~150rpm
awRR measurement accuracy	±1rpm	±1rpm
awRR alarm limit range	0~150rpm	0~150rpm
awRR alarm resolution	1rmp	1rmp
No breath alarm limit range and error	Range	Adult:10s、15s、20s、25s、30s、35s、40s 、 45s 、 50s 、 55s 、 1min Child/neonate: 10s 、 15s 、 20s 、 25s 、 30s、35s、40s
	Error	±5s
No breathalarm delay	10s、15s、20s、25s、30s、35s、40s、45s、50s、55s、1min、Off	

11) ESPECIFICACIONES NIBP

ITEM	ESPECIFICACIONES		
The NIBP sensor complies with IEC 80601-6-30.			
Measurement method	Auto oscillation method		
Measurement range and accuracy	Measurement range (adult)	Systolic pressure	5.3-36kPa (40-270mmHg)

			Diastolic pressure	1.3-28.7kPa (10-215mmHg)
			Mean pressure	2.7-31.3kPa (20-235mmHg)
	Measurement range (child)		Systolic pressure	5.3-26.7kPa (40-200mmHg)
			Diastolic pressure	1.3-20kPa (10-150mmHg)
			Mean pressure	2.7-22kPa (20-165mmHg)
	Measurement range (neonate)		Systolic pressure	5.3-18kPa (40-135mmHg)
			Diastolic pressure	1.3-13.3kPa (10-100mmHg)
			Mean pressure	2.7-14.7kPa (20-110mmHg)
	Measurement accuracy		Maximum average deviation: ±5mmHg (±0.667kPa); maximum standard deviation: ±8mmHg (±1.067kPa).	
Overpressure protection range and tolerance	Adult mode		297mmHg	
	Child mode		240mmHg	
	Neonate mode		147mmHg	
	Tolerance		±3mmHg	
Alarm limit range and error	Adult	Systolic pressure	5.3kPa~36kPa (40mmHg~270mmHg)	
		Diastolic pressure	1.3kPa~28.7kPa (10 mmHg~215mmHg)	
		Mean pressure	2.7kPa~31.3kPa (20mmHg~235mmHg)	
	Child	Systolic pressure	5.3kPa~26.7kPa (40mmHg~200mmHg)	
		Diastolic pressure	1.3kPa~20kPa (10mmHg~150mmHg)	
		Mean pressure	2.7kPa~22kPa (20mmHg~165mmHg)	
	Neonate	Systolic pressure	5.3kPa~18kPa (40mmHg~135mmHg)	
		Diastolic pressure	1.3kPa~13.3kPa (10 mmHg~100mmHg)	
		Mean pressure	2.7kPa~14.7kPa (20mmHg~110mmHg)	
	Error	±0.1kPa or ±1mmHg, whichever is greater.		
NIBP measurement mode	Manual, auto (cyclic) or continual (not applicable to neonates)			
	Interval for auto mode		1/2/2.5/3/4/5/10/15/30/60/90/120/180/240/480/720min	
	Continual		5min	

Initialpressurerange(mm Hg)	Adult：80～280；Child：80～210；Neonate：60～140

12) ESPECIFICACIONES IBP
13)

ITEM	ESPECIFICACIONES	
Number of IBP channels	2	
Pressure name	ART (arterial pressure), PA (pulmonary artery pressure), CVP (central venous pressure), RAP (right atrial pressure), LAP (left atrial pressure), ICP (Intracranial pressure), AO (aortic pressure), UAP (umbilical artery pressure), BAP (brachial artery pressure), FAP (femoral artery pressure), UVP (umbilical venous pressure), LV (left ventricular pressure), P1, P2, P3 and P4..	
Measurement range and accuracy	ART	0~40kPa (0~300mmHg)
	PA	-0.8~16kPa (-6~120mmhg)
	CVP	-1.3~5.3kPa (-10~40mmHg)
	RAP	-1.3~5.3kPa (-10~40mmHg)
	LAP	-1.3~5.3kPa (-10~40mmHg)
	ICP	-1.3~5.3kPa (-10~40mmHg)
	P1, P2	-6.6~40kPa (-50~300mmHg)
	P3, P4	-6.6~40kPa (-50~300mmHg)
	LV	0~40kPa (0~300mmHg)
	AO	0~40kPa (0~300mmHg)
	UAP	0~40kPa (0~300mmHg)
	BAP	0~40kPa (0~300mmHg)
	FAP	0~40kPa (0~300mmHg)
	UVP	-1.3~5.3kPa (-10~40mmHg)
	IAP	-1.3~5.3kPa (-10~40mmHg)
Static pressure measurement range	-1.3kPa~+40kPa(-50mmHg~+300mmHg)	
Display resolution for static pressure measurement	0.1kPa or 1mmHg	
Static pressure measurement error	±1mmHg or ±2%, whichever is greater (excluding the sensor error).	
IBP alarm limit range	ART	0mmHg -300mmHg
	PA	-6mmHg~120mmHg
	CVP	-10mmHg~40mmHg
	RAP	-10mmHg~40mmHg
	LAP	-10mmHg~40mmHg
	ICP	-10mmHg~40mmHg
	P1	-50mmHg~300mmHg

	P2	-50mmHg~300mmHg
	P3	-50mmHg~300mmHg
	P4	-50mmHg~300mmHg
	LV	0mmHg~300mmHg
	AO	0mmHg~300mmHg
	UAP	0mmHg~300mmHg
	BAP	0mmHg~300mmHg
	FAP	0mmHg~300mmHg
	UVP	-10mmHg~40mmHg
	IAP	-10mmHg~40mmHg
IBP alarm error	±0.1kPa or ±1mmHg	
Pressure sensor	Sensitivity: 5μV/V/mmHg	
	Impedance range: 300~3000Ω	
Pressure zero calibration	Each channel should feature a pressure zero calibration function, with an accuracy of ± 1mmHg or ± 0.1kPa.）	

14) ESPECIFICACIONES C.O.

ITEM	ESPECIFICACIONES	
C.O. measurement range	C.O.:	0~20L/min
	BT:	25~43℃
	IT:	0~25℃
Resolution	C.O.:	0.1L/min
	BT, IT:	0.1℃
Accuracy	C.O.:	±5% or ±0.1L/min, whichever is greater.
	BT, IT:	±0.1℃ (excluding the sensor)
Upper and lower C.O. alarm limit	Upper BT limit	(lower limit + 0.4)~43℃
	Lower BT limit	25.0~(upper limit - 0.4)℃
	Step size	0.1℃
Alarm accuracy	±0.1℃	

15) ESPECIFICACIONES AG

ITEM	ESPECIFICACIONES
The AG module complies with ISO 80601-2-55.	
AG measurement method	Infrared radiation absorption characteristics
AG preheating time	<20s
AG measurement range	The accuracy of all measured values complies with EN ISO 21647:2004 and

<table>
<tr><td>and accuracy</td><td colspan="3">EN 864:1996.
The following accuracy standards are applicable to a dry gas under 22±5°C and 1013±40hPa.</td></tr>
<tr><td></td><td>CO_2</td><td>0%~15%
15%~25%</td><td>±(0.2kPa+reading×2%)
Not defined.</td></tr>
<tr><td></td><td>N_2O</td><td>0~100 %</td><td>±(2kPa+reading×2%)</td></tr>
<tr><td></td><td>Hal, Enf, Iso</td><td>0~8 %
8~25 %</td><td>±(0.15 %+reading×5%)
Not defined.</td></tr>
<tr><td></td><td>Sev</td><td>0~10 %
10~25 %</td><td>±(0.15 %+reading×5%)
Not defined.</td></tr>
<tr><td></td><td>Des</td><td>0~22 %
22~25 %</td><td>±(0.15 %+reading×5%)
Not defined.</td></tr>
<tr><td></td><td>O_2</td><td>0~100 %</td><td>±(1%+reading×2%)</td></tr>
<tr><td></td><td>RR</td><td>0~254rpm</td><td>±1rpm</td></tr>
<tr><td>AG resolution</td><td colspan="3">CO2: 1mmHg
awRR: 1rpm</td></tr>
<tr><td>AG gas name</td><td colspan="3">CO_2, O_2, N_2O, one of the five anesthetic gases (Enf, Iso, Sev, Hal or Des)</td></tr>
<tr><td rowspan="11">AG alarm limit and accuracy</td><td>Parameter</td><td>Alarm Limit</td><td>Accuracy</td></tr>
<tr><td>$EtCO_2$</td><td>0mmHg~190mmHg</td><td>±1mmHg</td></tr>
<tr><td>Fi CO_2</td><td>0mmHg~99mmHg</td><td>±1mmHg</td></tr>
<tr><td>AwRR</td><td>0rpm~150rpm</td><td>±1rpm</td></tr>
<tr><td>EtO_2</td><td>0%~100%</td><td>±1%</td></tr>
<tr><td>FiO_2</td><td>18%~100%</td><td>±1%</td></tr>
<tr><td>EtN_2O</td><td>0%~100%</td><td>±1%</td></tr>
<tr><td>FiN_2O</td><td>0%~82%</td><td>±1%</td></tr>
<tr><td>EtHal/EtEnf/EtIso/EtSev/EtDes</td><td>0%~25%</td><td>±0.1%</td></tr>
<tr><td>FiHal/FiEnf/FiIso/FiSev/FiDes</td><td>0%~25%</td><td>±0.1%</td></tr>
<tr><td>ITEM</td><td colspan="3">ESPECIFICACIONES</td></tr>
<tr><td colspan="4">Specifications of ISATM (AG) Sidestream Gas Analyzer</td></tr>
</table>

Measurement method	Infrared gas measurement	
[No Breaths Timeout]	Range	For adult: 10s, 15s, 20s, 25s, 30s, 35s, 40s ,45s, 50s, 55s or 1min; For pediatric and neonate: 20s, 25s, 30s, 35s or 40s
	Error	±5s
[No Breath Alm Delay]	10s, 15s, 20s, 25s, 30s, 35s, 40s, 45s, 50s, 55s, 1min or Off	
General Specifications		
Description	Ultra-small low-flow sidestream gas analyzer, with integrated micro-pump, zeroing valve and flow controller.	
Working conditions	ISA AX+: 0~50°C (32~122°F); ISA OR+: 5~50°C (41~122°F)	
Storage conditions	-40~70°C (-40~158°F)	
RH	<4kPa H2O (non-condensing) 95% RH, 30°C	
Barometric pressure	52.5~120kPa (4572m)	
Water treatment	Sampling tube: patented dehydration tube	
Data Output		
Fi/Et value	CO2, O2, N2O, five anesthetic gases (Hal, Enf, Iso, Sev, Des)	
Waveform	Display up to 4 gas concentration waveforms at a time	
Diagnostic parameter	Barometric pressure	
Gas Analyzer		
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	
Gas		
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%.	

16) ESPECIFICACIONES BIS

ITEM	ESPECIFICACIONES
BIS measurement range and accuracy	BIS: 0-100; accuracy: 1%. SQI: 0-100%; accuracy: 1%. EMG: 0~100dB; accuracy: 1%.

	ESR: 0~100%; accuracy: 1%.		
BIS alarm limit	Parameter	Alarm Limit	Step Size
	BIS	0~100	1

17) ESPECIFICACIONES ICG

ITEM	ESPECIFICACIONES		
ICG measurement method	Indirect impedance cardiography measurement		
Measurement range	HR: 40~250bpm SV: 5~250mL C.O.:1.4~15L/min		
Measurement accuracy	SV: not defined. HR: ±2bpm. C.O: no defined.		
Resolution	SV: 0.1ml HR: 1bpm C.O: 0.1L/min		
ICG alarm limit and resolution		Alarm Limit	Resolution
	C.I.	Upper limit: (lower limit + 0.1)~15.0L/min/m^2	0.1L/min/m^2
		Lower limit: 1.4~(upper limit - 0.1)L/min/m^2	
	TFC	Upper limit: (lower limit + 1)~150/KΩ	1KΩ
		Lower limit: 5~(upper limit - 1)KΩ	

18) ESPECIFICACIONES DE GRABACION (OPCIONAL)

ITEM	ESPECIFICACIONES
Recording paper width	50mm
Effective recording width	48mm
Paper speed	25/50 mm/s
RT record time	8s, 16s, 32s or continual
Number of waveforms	3
Any alarm record?	Yes

19) SISTEMA DE ALARMA

ITEM	ESPECIFICACIONES
The alarm system complies with IEC 60601-1-8.