

Guardian Plus Specifications

MONITOR SAFETY SPECIFICATIONS

The monitor is classified, according to IEC 60601-1:

Degree of protection against electrical shock	Type CF defibrillation proof for ECG, Resp, SpO2, NIBP, Temp Type BF defibrillation proof for CO2
Type of protection against electrical shock	Class I
Degree of protection against harmful ingress of water	IPX1
Degree of safety of application in the presence of flammable anesthetic mixture with air or with oxygen or nitrous oxide	The equipment is not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide
Mode of operation	Continuous

PHYSICAL SPECIFICATIONS

Item	Maximum Weight	W x H x D (mm)	Comments
Main unit	4.0 kg (standard configuration and recorder, excluding battery and accessories)	271 x 226 x 173	3.2 kg (standard configuration, excluding battery, accessories and recorder)

ENVIRONMENTAL SPECIFICATIONS

WARNING

- The monitor may not meet the performance specifications if stored or used outside the specified temperature and humidity ranges. If the performance of the equipment is degraded due to aging or environmental conditions, contact your service personnel.
- When the monitor and related products have differing environmental specifications, the effective range for the combined products is that range which is common to the specifications for all products.

NOTE

- The environmental specification of unspecified parameter modules are the same as those of the main unit.

Main Unit			
Item	Temperature (C°)	Relative Humidity (noncondensing) (%)	Barometric
Operating Condition	0 to 40	15 to 95	427.5 to 805.5 mmHg (57 to 107.4 kPa)
Storage Condition	-20 to 60	10 to 95	120 to 805.5 mmHg (16 to 107.4 kPa)
Microstream CO2 Module			
Item	Temperature (C°)	Relative Humidity (noncondensing) (%)	Barometric
Operating Condition	0 to 40	15 to 95	430 to 790 mmHg (57.3 to 105.3 kPa)
Storage Condition	-20 to 60	10 to 95	430 to 790 mmHg (57.3 to 105.3 kPa)
Sidestream CO2 Module			
Item	Temperature (C°)	Relative Humidity (noncondensing) (%)	Barometric
Operating Condition	5 to 40	15 to 95	430 to 790 mmHg (57.3 to 105.3 kPa)
Storage Condition	-20 to 60	10 to 95	430 to 790 mmHg (57.3 to 105.3 kPa)

POWER SUPPLY SPECIFICATIONS

External Power Supply Specifications:

AC Power	
Line Voltage	100 to 240 VAC (±10%)
Input Current	2.0 to 0.9 A
Frequency	50/60 Hz (± 3 Hz)

Battery Specifications:

AC Power	
Battery Type	Rechargeable lithium-Ion battery (non-smart battery)
Battery Voltage	10.95V
Battery Capacity	4500 mAh
Maximum Number of Batteries Configured	Only one battery can be connected
Run Time	<p>≥ 4 hours</p> <p>When the monitor is powered by a new fully-charged battery at 25 °C ±5 °C with 5-lead ECG and SpO2 cable connected, auto NIBP measurements at an interval of 15 minutes, and screen brightness set to 1.</p> <p>Shutdown delay: at least 15 minutes after the low battery alarm first occurs.</p>
Charge Time	<p>No more than 5 hours to 90% when the monitor is off</p> <p>No more than 10 hours to 90% when the monitor is on</p>

DISPLAY SPECIFICATIONS

Screen Type:

Capacitive, multi-point color touchscreen

Screen Size (diagonal):

10.1 inches

Resolution:

1280 x 800 pixels

LEDs

Alarm Lamp:

1 or 2 (three color-coded: red, yellow, and cyan)

Power-on LED:

1 (green)

AC power LED:

1 (green)

Battery LED:

1 (two color-coded: yellow and green)

RECORDER SPECIFICATIONS

Method:

Thermal dot array

Horizontal Resolution:

16 dots/mm (25 mm/s paper speed)

Vertical Resolution:

8 dots/mm

Paper Width:

50 mm±1mm

Paper Length:

20 m

Paper Speed:

25 mm/s, 50 mm/s

Accuracy:

±5%

Number of Waveform Channels:

A maximum of 3

AUDIO INDICATOR

Speaker	Give alarm tones (45 to 85 dB), reminder tones, key tones, QRS tones; support PITCH TONE and multi-level tone modulation; alarm tones comply with IEC 60601-1-8.
Audio signal	Alarm tone: ISO mode with frequency of 600 Hz QRS tone: Short beep with frequency of 650 Hz Key tone: Short beep with frequency of 1000 Hz

MONITOR INTERFACE SPECIFICATIONS

AC Power Input	1
Network Connector	1, standard RJ45 connectors, 100 Base-TX, IEEE 802.3
USB Connector	2, USB 2.0
Multifunctional Connector	1
Video Output Connector	1, 15-pin D-sub
Equipotential Grounding Terminal	1

SIGNAL OUTPUTS SPECIFICATIONS

Auxiliary Output	
Standard	Meets the requirements of IEC 60601-1 for short-circuit protection and leakage current
ECG Analog Output	
Bandwidth (-3dB; reference frequency: 10Hz)	Diagnostic mode: 0.05 to 150 Hz Monitor mode: 0.5 to 40 Hz Surgical mode: 1 to 20 Hz

Maximum QRS Delay	25 ms (in diagnostic mode, and non-paced)
Gain (reference frequency 10Hz)	1V/mV ($\pm 5\%$)
Pace Enhancement	Signal amplitude: $V_{oh} \geq 2.5V$ Pulse width: $10ms \pm 5\%$ Signal rising and falling time: $\leq 100\mu s$
Nurse Call Signal	
Amplitude	High level: 3.5 to 5 V, $\pm 5\%$, providing a minimum of 10 mA output current; Low level: $< 0.5 V$, receiving a minimum of 5 mA input current.
Rising and Falling Time	$\leq 1 ms$
Defib Sync Pulse	
Output Impedance	$\leq 100 \Omega$
Maximum Time Delay	35 ms (R-wave peak to leading edge of pulse)
Amplitude	High level: 3.5 to 5 V, $\pm 5\%$, providing a minimum of 10 mA output current; Low level: $< 0.5 V$, receiving a minimum of 5 mA input current.
Pulse Width	100 ms $\pm 10\%$
Maximum Rising and Falling Time	1 ms
Alarm Output	
Alarm delay time from the monitor to remote equipment	The alarm delay time from the monitor to remote equipment is ≤ 2 seconds, measured at the monitor signal output connector.
Alarm signal sound pressure level range	45 db(A) to 85 db(A) within a range of one meter

DATA STORAGE

Trends	<p>Standard-capacity memory card: up to 120 hours of trend data with the resolution no less than 1 minute, or up to 1200 hours of trend data with the resolution no less than 10 minutes.</p> <p>High-capacity memory card: up to 240 hours of trend data with the resolution no less than 1 minute, or up to 2400 hours of trend data with the resolution no less than 10 minutes.</p>
Events	<p>Standard-capacity memory card: 1000 events, including parameter alarms, arrhythmia events, technical alarms, and so on.</p> <p>High-capacity memory card: 2000 events, including parameter alarms, arrhythmia events, technical alarms, and so on.</p>
NIBP Measurements	<p>Standard-capacity memory card: 1000 sets.</p> <p>High-capacity memory card: 3000 sets.</p>
Full-disclosure Waveforms	<p>Standard-capacity memory card: up to 48 hours for one waveform. The specific storage time depends on the waveforms stored and the number of stored waveforms.</p> <p>High-capacity memory card: up to 48 hours for all parameter waveforms.</p>
OxyCRG View	<p>A maximum of 48 hours of OxyCRG events.</p>

ECG SPECIFICATIONS

ECG

Standards:

Meet standards of IEC 60601-2-27: 2011 & IEC 60601-2-25: 2011

Lead Set:

3-lead: I, II, III

5-lead: I, II, III, aVR, aVL, aVF, V

ECG Standard: AHA, IEC

Display Sensitivity:

1.25 mm/mV ($\times 0.125$), 2.5 mm/mV ($\times 0.25$),

5 mm/mV ($\times 0.5$), 10 mm/mV ($\times 1$),

20 mm/mV ($\times 2$), 40 mm/mV ($\times 4$), Auto, less than 5% error

Sweep Speed:

6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s, less than 5% error

Bandwidth (-3dB):

Diagnostic mode: 0.05 to 150 Hz

Monitor mode: 0.5 to 40 Hz

Surgical mode: 1 to 20 Hz

Common Mode Rejection Ratio:

Diagnostic mode: >90 dB

Monitor mode: >105 dB (with notch filter on)

Surgical mode: >105 dB (with notch filter on)

Notch filter: 50/60 Hz

Monitor, surgical mode: notch filter turns on automatically

Diagnostic mode: notch filter is turned on/off manually

Differential input impedance ≥ 5 M Ω

Input signal range ± 8 mV (peak-to-peak value)

Accuracy of Signal reproduction:

Use A and D methods based on IEC 60601-2-25 to determine frequency response.

Electrode Offset Potential Tolerance:

± 500 mV

Lead-off Detection Current:

Measuring electrode: < 0.1 μ A

Drive electrode: < 1 μ A

Input Offset Current:

≤ 0.1 μ A, (drive lead ≤ 1 μ A)

Defibrillation Protection:

Enduring 5000V (360 J)

Baseline recovery time: < 5 s (after defibrillation)

Polarization recovery time: < 10 s

Defibrillation energy absorption: $\leq 10\%$ (100 Ω load)

Patient Leakage Current:

< 10 μ A

Calibration Signal:

1mV (peak-to-peak value) $\pm 5\%$

ESU protection:

Cut mode: 300 W

Coagulate mode: 100 W

Recovery time: ≤ 10 s

In compliance with the requirements in clause 202.6.2.101 of IEC 60601-2-27

ALARM LIMIT

HR High:

Range:

HR ≤ 40 bpm: (low limit + 2 bpm) to 40 bpm

HR > 40 bpm: (low limit + 5 bpm) to 295 bpm

Step:

HR ≤ 40 bpm: 1 bpm

HR > 40 bpm: 5 bpm

HR Low:

Range:

HR ≤ 40 bpm: 16 bpm to (high limit - 2 bpm)

HR > 40 bpm: 40 bpm to (high limit - 5 bpm)

HR

Measurement Range:

Neonate: 15 to 350 bpm

Pediatric: 15 to 350 bpm

Adult: 15 to 300 bpm

Resolution: 1 bpm

Accuracy: ± 1 bpm or $\pm 1\%$, whichever is greater.

Sensitivity: 200 μ V (lead II)

HR Averaging Method:

In compliance with the requirements in Clause 201.7.9.2.9.101 b) 3) of IEC 60601-2-27, the following method is used: If the last 3 consecutive RR intervals are greater than 1200 ms, the 4 most recent RR intervals are averaged to compute the HR. Otherwise, heart rate is computed by subtracting the maximum and minimum ones from the most recent 12 RR intervals and then averaging them. The HR value displayed on the monitor screen is updated no more than one second.

Response to Irregular Rhythm:

In compliance with the requirements in Clause 201.7.9.2.9.101 b) 4) of IEC 60601-2-27, the heart rate after 20 seconds of stabilization is displayed as follows:

Ventricular bigeminy (waveform A1): 80 ± 1 bpm

Slow alternating ventricular bigeminy (waveform A2):

60 ± 1 bpm

Rapid alternating ventricular bigeminy (waveform A3):

120 ± 1 bpm

Bidirectional systoles (waveform A4): 90 ± 2 bpm

Response Time to Heart Rate Change:

Meets the requirements of IEC 60601-2-27:

Clause 201.7.9.2.9.101 b) 5).

From 80 to 120 bpm: less than 11 s

From 80 to 40 bpm: less than 11 s

Time to Alarm For Tachycardia:

Meets the requirements in Clause 201.7.9.2.9.101 b) 6) of IEC 60601-2-27.

Waveform: < 11 s

B1h-range: < 11 s

B1d-range: < 11 s

B1d-range: < 11 s

B2h-range: < 11 s

B2d-range: < 11 s

B2d-range: < 11 s

Tall T-wave Rejection Capability:

When the test is performed based on Clause 201.12.1.101.17 of IEC 60601-2-27, the heart rate calculation is not affected for QRS of 1 mV amplitude and 100 ms duration, T-wave duration of 180 ms and amplitude lower than 1.2 mV, and QT interval of 350 ms.

Arrhythmia Analysis Classifications:

Asystole, V-Fib/V-Tach, V-Tach, Vent Brady, Extreme Tachy, Extreme Brady, Vent Rhythm, PVCs/min, Pauses/min, Couplet, Bigeminy, Trigeminy, R on T, Run PVCs, PVC, Tachy, Brady, Missed Beats, Pacer Not Pacing, Pacer Not Capture, Multiform PVC, Nonsus V-Tach, Pause, Irr Rhythm, A-Fib

RESP SPECIFICATIONS

Technique: Trans-thoracic impedance

Lead:

- Lead I
- Lead II
- Auto

Respiration Excitation Waveform: <300 μ A RMS, 62.8 kHz (\pm 10%)

Minimum Respiration Impedance Threshold: 0.3 Ω

Baseline Impedance Range:

200 to 2500 Ω (using an ECG cable with 1k Ω resistance)

Bandwidth:

0.2 to 2.5 Hz (-3 dB)

Sweep Speed:

3mm/s, 6.25 mm/s, 12.5 mm/s, 25 mm/s
or 50 mm/s, less than 10% error

Recovery Time: <15 s (after defibrillation)

RESPIRATION RATE

Measurement Range:

Adult: 0 to 120 rpm

Pediatric, Neonate: 0 to 150 rpm

Resolution: 1 rpm

Accuracy:

7 to 150 rpm: \pm 2 rpm or \pm 2%, whichever
is greater 0 to 6 rpm: not specified

Apnea Alarm Delay:

10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s

ALARM LIMIT

RR High:

Range (rpm):

Adult, Pediatric:

RR \leq 20 — (low limit + 2) to 20

RR \leq 20 — (low limit + 5) to 100

Neonate:

RR \leq 20 — (low limit + 2) to 20

RR \leq 20 — (low limit + 5) to 150

Step (rpm):

RR \leq 20: 1

RR>20: 5

RR Low:

Range (rpm):

RR \leq 20 — 0 to (high limit - 2)

RR \leq 20 — 20 to (high limit - 5)

SPO2 SPECIFICATIONS

ALARM LIMIT

SpO2 High:

Range (%)

(low limit + 2) to 100

Step (%)

1

SpO2 Low:

Masimo: (Desat+1) to (high limit - 2)

Nellcor: (Desat+1) or 20 (whichever is greater) to
(high limit - 2)

SpO2 Desat Low:

0 to (SpO2 low limit - 1)

MASIMO SPO2 MODULE

Standards:

Meets the requirements of ISO 80601-2-61: 2011

Measurement Range:

1 to 100%

Resolution: 1%

Response Time:

\leq 20 s (normal perfusion, no disturbance, SpO2 value
sudden changes from 70% to 100%)

Accuracy:

70 to 100%: \pm 2%ABS (measured without
motion in adult/pediatric mode)

70 to 100%: \pm 3%ABS (measured without
motion in neonate mode)

70 to 100%: \pm 3%ABS (measured with motion)

1% to 69%: Not specified.

Refresh Rate:

\leq 1 s

SpO2 averaging time:

2-4 s, 4-6 s, 8 s, 10 s, 12 s, 14 s, 16 s

Low perfusion conditions Pulse amplitude: >0.02%

Light Penetration: >5%

Low Perfusion SpO2 Accuracy: \pm 2%

PI measurement Range: 0.02 to 20%

NELLCOR SPO2 MODULE

Measurement Range: 0 to 100%

Resolution: 1%

Refreshing Rate: \leq 1 s

Response Time:

\leq 30 s (normal perfusion, no disturbance, SpO2 value
sudden change from 70% to 100%)

Recovery Time: <15 s (after defibrillation)

Accuracy:

70 to 100%: \pm 2%ABS (adult/pediatric)

70 to 100%: \pm 3%ABS (neonate)

0% to 69%: Not specified.

PR SPECIFICATIONS

ALARM LIMIT

PR High:

Range:

PR \leq 40bpm: (low limit + 2 bpm) to 40 bpm

PR > 40 bpm: (low limit + 5 bpm) to 295 bpm

Step:

PR \leq 40: 1 bpm

PR>40: 5 bpm

PR Low:

PR \leq 40bpm: 16 bpm to (high limit - 2 bpm)

PR > 40 bpm: 40 bpm to (high limit - 5 bpm)

PR FROM MASIMO SPO2

Measurement Range: 25 to 240 bpm

Resolution: 1 bpm

Response Time:

\leq 20 s (with normal perfusion, no disturbance, and a PR value transition from 25 to 220 bpm)

Accuracy:

\pm 3 bpm (measured without motion)

\pm 5 bpm (measured with motion)

Refresh Rate: \leq 1 s

PR FROM NELLCOR SPO2 MODULE

Measurement Range: 20 to 300 bpm

Resolution: 1 bpm

Response Time:

\leq 30 s (normal perfusion, no disturbance, PR value sudden change from 25 to 250 bpm)

Accuracy:

20 to 250 bpm: \pm 3 bpm

251 to 300 bpm, not specified

Refreshing Rate: \leq 1 s

TEMP SPECIFICATIONS

Standard:

Meet the standard of ISO 80601-2-56: 2017

Technique: Thermal Resistance

Operating Mode: Direct mode

Measurement Range: 0 to 50 °C (32 to 122 °F)

Resolution: 0.1°C

Accuracy: \pm 0.1 °C or \pm 0.2 °F (excluding probe error)

Refreshing Rate: \leq 1 s

Minimum Time for Accurate Measurement Body

Surface: <100 s

Body Cavity: <80 s

Recovery Time: <15 s (after defibrillation)

ALARM LIMIT

TXX High (XX refers to temperature site):

Range:

(low limit +1.0) to 50.0 °C

(low limit +2.0) to 122.0 °F

Step:

0.1 °C

0.1 °F

TXX Low (XX refers to temperature site):

Range:

0.1 to (high limit - 1.0) °C

32.2 to (high limit - 2.0) °F

Δ T High:

Range:

0.1 to 50.0 °C

0.2 to 90.0 °F

NIBP SPECIFICATIONS

Standard:

Meet standard of IEC 80601-2-30: 2018

Technique: Oscillometry

Mode of Operation:

Manual,

Auto,

STAT

Sequence

Auto Mode Repetition Intervals:

1, 2, 2.5, 3, 5, 10, 15, 20, 30,

60, 90, 120, 180, 240 or 480 min

STAT Mode Cycle Time: 5 min

Max Measurement Time:

Adult, Pediatric: 180 s

Neonate: 90 s

Heart Rate Range: 30 to 300 bpm

Measurement Ranges (mmHg):

Adult:

Systolic: 25 to 290

Diastolic: 10 to 250

Mean: 15 to 260

Pediatric:

Systolic: 25 to 240

Diastolic: 10 to 200

Mean: 15 to 215

Neonate:

Systolic: 25 to 140

Diastolic: 10 to 115

Mean: 15 to 125

Accuracy Max:

Mean error: \pm 5 mmHg

Max standard deviation: 8 mmHg

Resolution:

1mmHg

Initial Cuff Inflation Pressure Range (mmHg):

Adult: 80 to 280

Pediatric: 80 to 210

Neonate: 60 to 140

Default Initial Cuff Inflation Pressure (mmHg):

Adult: 160

Pediatric: 140

Neonate: 90

Software Overpressure Protection:

Adult: 297 \pm 3 mmHg

Pediatric: 297 \pm 3 mmHg

Neonate: 147 \pm 3 mmHg

Static Pressure Measurement Range: 0 mmHg to 300 mmHg

Static Pressure Measurement Accuracy: \pm 3 mmHg

Recovery Time: <15 s (after defibrillation)

PR

Measurement Range: 30 to 300 bpm

Resolution: 1 bpm

Accuracy:

\pm 3bpm

or \pm 3%, whichever is greater

ALARM LIMIT

NIBP-S High:

Range:

Adult: (low limit + 5) to 285

Pediatric: (low limit + 5) to 235

Neonate: (low limit + 5) to 135

NIBP-S Low:

Range:

26 to (high limit - 5)

NIBP-M High:

Adult: (low limit + 5) to 255

Pediatric: (low limit + 5) to 210

Neonate: (low limit + 5) to 120

NIBP-M Low:

16 to (high limit - 5)

NIBP-D High:

Adult: (low limit + 5) to 245

Pediatric: (low limit + 5) to 195

Neonate: (low limit + 5) to 110

NIBP-D Low:

11 to (high limit - 5)

NIBP-S Extreme High:

NIBP-S high limit < 50

Adult: (NIBP-S high limit + 1) to 290

Pediatric: (NIBP-S high limit + 1) to 240

Neonate: (NIBP-S high limit + 1) to 140

NIBP-S high limit \geq 50

Adult: (NIBP-S high limit + 5) to 290

Pediatric: (NIBP-S high limit + 5) to 240

Neonate: (NIBP-S high limit + 5) to 140

NIBP-S Extreme Low:

NIBP-S low limit \leq 50

25 to (NIBP-S low limit - 1)

NIBP-S low limit > 50

25 to (NIBP-S low limit - 5)

NIBP-M Extreme High:

NIBP-M high limit < 50

Adult: (NIBP-M high limit + 1) to 260

Pediatric: (NIBP-M high limit + 1) to 215

Neonate: (NIBP-M high limit + 1) to 125

NIBP-M high limit \geq 50

Adult: (NIBP-M high limit + 5) to 260

Pediatric: (NIBP-M high limit + 5) to 215

Neonate: (NIBP-M high limit + 5) to 125

NIBP-M Extreme Low:

NIBP-M low limit \leq 50

15 to (NIBP-M low limit - 1)

NIBP-M low limit > 50

15 to (NIBP-M low limit - 5)

NIBP-D Extreme High:

NIBP-D high limit < 50

Adult: (NIBP-D high limit + 1) to 250

Pediatric: (NIBP-D high limit + 1) to 200

Neonate: (NIBP-D high limit + 1) to 115

NIBP-D high limit \geq 50

Adult: (NIBP-D high limit + 5) to 250

Pediatric: (NIBP-D high limit + 5) to 200

Neonate: (NIBP-D high limit + 5) to 115

NIBP-D Extreme Low:

NIBP-D low limit \leq 50

10 to (NIBP-D low limit - 1)

NIBP-D low limit > 50

10 to (NIBP-D low limit - 5)

CO2 SPECIFICATIONS

Measurement Mode:

Sidestream

Microstream

Technique:

Infrared Absorption

Apnea Delay:

10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s

ALARM LIMIT

EtCO2 High:

Range:

(low limit + 2) to 99 mmHg

Step:

1 mmHg

EtCO2 Low:

Range:

1 to (high limit - 2) mmHg

Step:

1 mmHg

FiCO2 High:

Range:

1 to 99 mmHg

Step:

1 mmHg

SIDESTREAM CO2 MODULE

Standard:

Meet the standard of ISO 80601-2-55: 2011

CO2 Measurement Range: 0 to 150 mmHg

CO2 Absolute Accuracy:

Full accuracy mode:

0 to 40 mmHg: \pm 2 mmHg

41 to 76 mmHg: \pm 5% of reading

77 to 99 mmHg: \pm 10% of reading

100 to 150 mmHg: \pm (3 mmHg + 8% of reading)

ISO accuracy mode: add \pm 2mmHg to the full accuracy mode

CO2 Resolution: 1 mmHg

Recovery Time: <15 s (after defibrillation)

Accuracy Drift:

Meet the requirement for measurement accuracy within 6 hours

Sample Flowrate:

Connected a DRYLINE II watertrap for adult and pediatric patient: 120 ml/min

Connected a DRYLINE II watertrap for neonatal patient: 90 ml/min or 70 ml/min

Sample Flowrate Tolerance:

\pm 15% or \pm 15 ml/min, whichever is greater.

Start-up time:

Maximum: 90 s

Typically: 20 s

Response Time:

Measured with a DRYLINE II neonatal watertrap and a 2.5-meter neonatal sampling line:

\leq 5.0 s @ 70 ml/min

\leq 4.5 s @ 90 ml/min

Measured with a DRYLINE II adult watertrap and a 2.5-meter adult sampling line:

\leq 5.0 s @ 120 ml/min

Rise Time:

Measured with a DRYLINE II neonatal watertrap
and a 2.5-meter neonatal sampling line:

≤250 ms@70 ml/min.

≤250 ms@90 ml/min.

Measured with a DRYLINE II adult watertrap
and a 2.5-meter adult sampling line:

≤300 ms@120 ml/min

awRR Measurement Range: 0 to 150 rpm

awRR Measurement Precision:

≤60 rpm: ±1

61 to 150 rpm: ±2

awRR Resolution: 1 rpm

Data Sample Rate: 50 Hz

EFFECT OF INTERFERENCE GASES ON CO2 MEASUREMENTS

N2O:

Concentration: ≤60%

Quantitative Effect: ±1 mmHg

Hal:

Concentration: ≤4%

Quantitative Effect: ±1 mmHg

Sev:

Concentration: ≤5%

Quantitative Effect: ±1 mmHg

Iso:

Concentration: ≤5%

Quantitative Effect: ±1 mmHg

Enf:

Concentration: ≤5%

Quantitative Effect: ±1 mmHg

Des:

Concentration: ≤15%

Quantitative Effect: ±2 mmHg

MICROSTREAM CO2 MODULE

Standard:

Meet the standard of ISO 80601-2-55: 2011

CO2 Measurement Range:

0 to 99 mmHg

Accuracy:

0 to 38 mmHg: ±2 mmHg

39 to 99 mmHg: ±5% of the reading (0.08% increased in error
for every 1 mmHg if the reading is more than 38mmHg)

Accuracy Drift:

Meet the requirement for measurement accuracy within 6 hours

Resolution: 1 mmHg

Recovery Time: <15 s (after defibrillation)

Sample Flow Rate: 50 ml/min

Initialization Time:

30 s (typical)

180 s (maximum)

Response Time:

4.3 s (with any 2-meter FilterLine)

5.5 s (with any 4-meter FilterLine)

Rise Time:

190 msec (with any 2-meter FilterLine)

210 msec (with any 4-meter FilterLine)

awRR Measurement Range: 0 to 150 rpm

awRR Measurement Accuracy:

0 to 70 rpm: ±1 rpm

71 to 120 rpm: ±2 rpm

121 to 150 rpm: ±3 rpm

awRR Resolution: 1 rpm

Data Sample Rate: 40 Hz