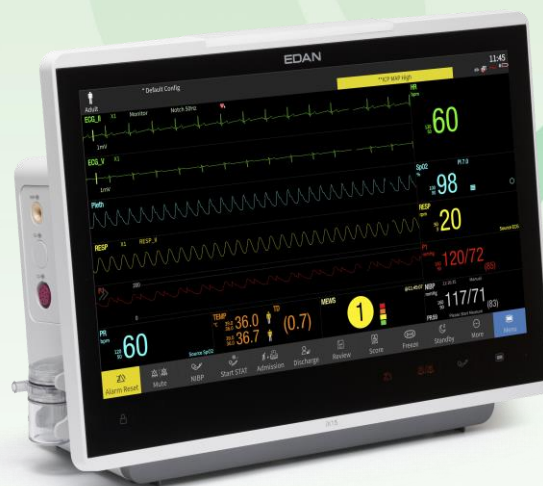


# iX15

## Patient Monitor

Version 1.0



## Main Unit Specification

### Physical Specifications

|           |                                                                                 |
|-----------|---------------------------------------------------------------------------------|
| Dimension | 385 mm (W) × 286 mm (H) × 162 mm (D)                                            |
| Weight    | < 4.9 kg (standard configuration, excluding battery, accessories, and recorder) |

### Power Supply

|                              |                 |
|------------------------------|-----------------|
| AC Voltage                   | 100 V to 240 V~ |
| Input Current                | 1.6 A to 0.8 A  |
| Frequency                    | 50 Hz/60 Hz     |
| Over Current Fuse Protection | Support         |

### Battery

|                |                                                                                                                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Battery Type   | Rechargeable lithium-ion battery                                                                                                                                                                            |
| Operating Time | Two batteries (2×2500 mAh) ≥ 5 h<br>Two batteries (2×5000 mAh) ≥ 10 h                                                                                                                                       |
| Charge Time    | Two batteries (2×2500 mAh) ≤ 5 h (monitor is off)<br>≤ 10 h (monitor is running or in standby mode)<br>Two batteries (2×5000 mAh) ≤ 10 h (monitor is off)<br>≤ 20 h (monitor is running or in standby mode) |

### Display

|                |                                              |
|----------------|----------------------------------------------|
| Display screen | 15.6-inch color TFT, supporting touch screen |
| Resolution     | 1920 × 1080                                  |
| Messages       | A maximum of 12 waveforms                    |

### Recorder

|                 |                                                                                                                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Record Width    | 48 mm                                                                                                                                                                                                             |
| Paper Speed     | 12.5 mm/s, 25 mm/s, 50 mm/s                                                                                                                                                                                       |
| Channels        | 3                                                                                                                                                                                                                 |
| Recording types | Continual real-time recording<br>8-second real-time recording<br>Trend graph recording<br>Trend table recording<br>C.O. measurement recording<br>NIBP trigger recording<br>ST VIEW recording<br>QT VIEW recording |

### Data Storage

|                  |                       |
|------------------|-----------------------|
| Trend data       | 2400 hours @ 1 second |
| NIBP Measurement | 1200 sets             |
| Alarm Events     | 1000 sets             |

### Wi-Fi

|                |                                 |
|----------------|---------------------------------|
| IEEE           | 802.11a/b/g/n                   |
| Frequency Band | 2.4 GHz ISM band & 5 G ISM band |

### Interfaces and Others

|                                                           |   |
|-----------------------------------------------------------|---|
| Nurse Call / Analog Output/ Defibrillator Synchronization | 1 |
| USB Interfaces                                            | 4 |
| HDMI Interface                                            | 1 |
| RS232 Interface                                           | 1 |
| Wired Network Interface                                   | 1 |

### ECG

|                                    |                                                                                                                                                                                                                              |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead Mode                          | 3 Electrodes: I, II, III<br>5 Electrodes: I, II, III, aVR, aVL, aVF, V<br>6 Electrodes: I, II, III, aVR, aVL, aVF, Va, Vb.<br>10 Electrodes: I, II, III, aVR, aVL, aVF, V1-V6                                                |
| Electrode Standard                 | AHA, IEC                                                                                                                                                                                                                     |
| Display Sensitivity                | ×0.125, ×0.25, ×0.5, ×1, ×2, ×4, AUTO gain                                                                                                                                                                                   |
| Sweep                              | 6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s                                                                                                                                                                                       |
| Bandwidth (-3 dB)                  | Diagnosis: 0.05 Hz to 150 Hz<br>Diagnosis 1: 0.05 Hz to 40 Hz<br>Monitor: 0.5 Hz to 40 Hz<br>Surgery: 1 Hz to 20 Hz<br>Enhanced: 2 Hz ~18 Hz<br>Customized: High-pass Filter and Low-pass Filter                             |
| CMRR                               | Diagnosis: > 95 dB<br>Diagnosis 1: > 105 dB (when Notch is turned on)<br>Monitor: > 105 dB<br>Surgery: > 105 dB<br>Enhanced: > 105 dB<br>Customized: > 105 dB (Low-pass Filter < 40 Hz)<br>> 95 dB (Low-pass Filter > 40 Hz) |
| Hum Filter                         | In diagnosis, Diagnosis 1, monitor, surgery, enhanced and customized modes: 50 Hz/60 Hz (Hum Filter can be turned on or off manually)                                                                                        |
| Recovery Time After Defibrillation | <5 s                                                                                                                                                                                                                         |
| ESU Protection                     | Cut mode: 300 W<br>Coagulation mode: 100 W<br>Restore time: ≤10 s                                                                                                                                                            |
| Pace pulse detection               | one among I, II, III, aVR, aVL, aVF, V1-V6                                                                                                                                                                                   |

### Heart Rate

|       |                        |
|-------|------------------------|
| Range | ADU: 15 bpm to 300 bpm |
|-------|------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                 | PED/NEO: 15 bpm to 350 bpm                                                                         |
| Accuracy                                                                                                                                                                                                                                                                                                                                                                                                        | ±1% or ±1 bpm, whichever is greater                                                                |
| Resolution                                                                                                                                                                                                                                                                                                                                                                                                      | 1 bpm                                                                                              |
| <b>PVC</b>                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                    |
| Range                                                                                                                                                                                                                                                                                                                                                                                                           | ADU: (0 to 300) PVCs/ min<br>PED/NEO: (0 to 350) PVCs/ min                                         |
| Resolution                                                                                                                                                                                                                                                                                                                                                                                                      | 1 PVCs/min                                                                                         |
| <b>Pause/min</b>                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                    |
| Range                                                                                                                                                                                                                                                                                                                                                                                                           | ADU/PED/NEO: (0 to 30) pauses/min                                                                  |
| Resolution                                                                                                                                                                                                                                                                                                                                                                                                      | 1 pause/min                                                                                        |
| <b>ST value</b>                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                    |
| Range                                                                                                                                                                                                                                                                                                                                                                                                           | -2.0 mV to +2.0 mV                                                                                 |
| Accuracy                                                                                                                                                                                                                                                                                                                                                                                                        | -0.8 mV to +0.8 mV: ±0.02 mV or 10%,<br>whichever is greater.<br>Beyond this range: not specified. |
| Resolution                                                                                                                                                                                                                                                                                                                                                                                                      | 0.01 mV                                                                                            |
| <b>QT measurement</b>                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                    |
| Range                                                                                                                                                                                                                                                                                                                                                                                                           | 200 ms ~ 800 ms                                                                                    |
| Resolution                                                                                                                                                                                                                                                                                                                                                                                                      | 4 ms                                                                                               |
| Accuracy                                                                                                                                                                                                                                                                                                                                                                                                        | ± 30 ms                                                                                            |
| <b>QTc measurement</b>                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                    |
| Range                                                                                                                                                                                                                                                                                                                                                                                                           | 200 ms ~ 800 ms                                                                                    |
| Resolution                                                                                                                                                                                                                                                                                                                                                                                                      | 1 ms                                                                                               |
| <b>ΔQTc measurement</b>                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                    |
| Range                                                                                                                                                                                                                                                                                                                                                                                                           | -600 ms ~ 600 ms                                                                                   |
| Resolution                                                                                                                                                                                                                                                                                                                                                                                                      | 1 ms                                                                                               |
| <b>Arrhythmia analysis</b>                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                    |
| Asystole, Sustain VT, V-Fib/V-Tach, ExtremeTachy, ExtremeBrady, V-Tach, Vent Brady, Tachy, Brady, Wide QRS Tachy, Non-Sustain VT, Afib, Vent Rhythm, Acc. Vent Rhythm, Pause, Pauses/min High, PVCs High, R on T, PVC Bigeminy, PVC Trigeminy, Pacer not Pacing, Pacer not Capture, Missed Beat, VEB, PVC, Couplet, Run PVCs, IPVC, Irr Rhythm, PAC Bigeminy, Multiform PVCs, PAC Trigeminy, Low Voltage (Limb) |                                                                                                    |
| <b>12-lead ECG Synchronization Analysis</b>                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                    |
| Average parameters of heart beat                                                                                                                                                                                                                                                                                                                                                                                | PR interval (ms)                                                                                   |
| Heart rate (bpm)                                                                                                                                                                                                                                                                                                                                                                                                | QRS interval (ms)                                                                                  |
| Time limit of P wave (ms)                                                                                                                                                                                                                                                                                                                                                                                       | QT/QTc (ms)                                                                                        |
| P-QRS-T AXIS                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                    |
| <b>RESP</b>                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                    |
| Method                                                                                                                                                                                                                                                                                                                                                                                                          | Impedance between RA-LL, RA-LA                                                                     |
| Measurement lead                                                                                                                                                                                                                                                                                                                                                                                                | Options are lead I and II. The default is lead II.                                                 |
| Measuring range                                                                                                                                                                                                                                                                                                                                                                                                 | 0 rpm to 200 rpm                                                                                   |
| Resolution                                                                                                                                                                                                                                                                                                                                                                                                      | 1 rpm                                                                                              |
| Accuracy                                                                                                                                                                                                                                                                                                                                                                                                        | 6 rpm to 200 rpm: ±2 rpm<br>0 rpm to 5 rpm: not specified                                          |
| Gain Selection                                                                                                                                                                                                                                                                                                                                                                                                  | ×0.25, ×0.5, ×1, ×2, ×3, ×4, ×5                                                                    |
| Sweep                                                                                                                                                                                                                                                                                                                                                                                                           | 6.25 mm/s, 12.5 mm/s, 25.0 mm/s, 50.0 mm/s                                                         |
| Apnea Alarm Time                                                                                                                                                                                                                                                                                                                                                                                                | 10 s, 15 s, 20 s (Default), 25 s, 30 s, 35 s, 40 s                                                 |
| <b>NIBP</b>                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                    |
| Method                                                                                                                                                                                                                                                                                                                                                                                                          | Oscillometry                                                                                       |

|                                                  |                                                                                  |
|--------------------------------------------------|----------------------------------------------------------------------------------|
| Mode                                             | Manual, Auto, Continuous, Sequence                                               |
| Measuring Interval in Auto Mode                  | 1/2/2.5/3/4/5/10/15/30/60/90/120/180/240/360/480 min and User Define             |
| Continuous                                       | 5 min, interval is 5 s                                                           |
| Measuring Type                                   | SYS, DIA, MAP, PR                                                                |
| Measuring Range                                  |                                                                                  |
| Adult Mode                                       | SYS: 25 mmHg to 290 mmHg<br>DIA: 10 mmHg to 250 mmHg<br>MAP: 15 mmHg to 260 mmHg |
| Pediatric Mode                                   | SYS: 25 mmHg to 240 mmHg<br>DIA: 10 mmHg to 200 mmHg<br>MAP: 15 mmHg to 215 mmHg |
| Neonatal Mode                                    | SYS: 25 mmHg to 140 mmHg<br>DIA: 10 mmHg to 115 mmHg<br>MAP: 15 mmHg to 125 mmHg |
| Cuff Pressure                                    |                                                                                  |
| Measuring Range                                  | 0 mmHg to 300 mmHg                                                               |
| Pressure Resolution                              | 1 mmHg                                                                           |
| Maximum Mean Error                               | ±5 mmHg                                                                          |
| Maximum Standard Deviation                       | 8 mmHg                                                                           |
| Maximum Measuring Period                         | Adult/ Pediatric: 120 s<br>Neonatal: 90 s                                        |
| Typical Measuring Period                         | iCUFS measurement: 20 s to 35 s<br>iFAST measurement: 15 s                       |
| Dual Independent Channel Overpressure Protection | Adult: (297±3) mmHg<br>Pediatric: (245±3) mmHg<br>Neonatal: (147±3) mmHg         |

#### CNBP

|                             |                                                      |
|-----------------------------|------------------------------------------------------|
| Measuring Range (Adult)     | SYS: 25 mmHg to 290 mmHg<br>DIA: 10 mmHg to 250 mmHg |
| Measuring Range (Pediatric) | SYS: 25 mmHg to 240 mmHg<br>DIA: 10 mmHg to 200 mmHg |
| Alarm Type                  | SYS, DIA                                             |
| Pressure Resolution         | 1 mmHg                                               |
| Maximum Mean Error          | ±5 mmHg                                              |
| Maximum Standard Deviation  | 8 mmHg                                               |

#### BPVI

|                  |        |
|------------------|--------|
| Measuring Range  | 0~100% |
| Resolution       | 1%     |
| Update Frequency | 5 s    |

#### EDAN Module SpO<sub>2</sub>

|                    |                                                                                                                                                                                         |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measuring Range    | 0% to 100%                                                                                                                                                                              |
| Resolution         | 1%                                                                                                                                                                                      |
| Data update period | 1 s                                                                                                                                                                                     |
| Accuracy           | Adult/Pediatric: ±2% (70% to 100% SpO <sub>2</sub> )<br>Undefined (0% to 69% SpO <sub>2</sub> )<br>Neon: ±3% (70% to 100% SpO <sub>2</sub> )<br>Undefined (0% to 69% SpO <sub>2</sub> ) |

#### PI (Perfusion Index)

|                 |                                                                  |
|-----------------|------------------------------------------------------------------|
| Measuring Range | 0 to 20%, invalid PI value is -?.                                |
| Resolution      | 1% (10% to 20%)<br>0.1% (1.0% to 9.9%)<br>0.01% (0.00% to 0.99%) |

#### Nellcor Module SpO<sub>2</sub>

|                                                                       |                                     |
|-----------------------------------------------------------------------|-------------------------------------|
| <b>Measuring Range</b>                                                | 1% to 100%                          |
| <b>Resolution</b>                                                     | 1%                                  |
| <b>Data Update Period</b>                                             | 1 s                                 |
| <b>Accuracy</b>                                                       |                                     |
| DS-100A, OXI-A/N (Adult)                                              |                                     |
| D-YS (Adult and Pediatric)                                            |                                     |
| OXI-P/I (Pediatric)                                                   | ±3% (70% to 100% SpO <sub>2</sub> ) |
| MAX-A, MAX-AL, MAX-N, MAX-P,<br>MAX-I, MAX-FAST (Adult and Pediatric) | ±2% (70%~100% SpO <sub>2</sub> )    |
| MAX-A, MAX-AL, MAX-N, MAX-P,<br>MAX-I, MAX-FAST (Adult and Pediatric) | ±3% (60%~80% SpO <sub>2</sub> )     |

## PR

### PR (SpO<sub>2</sub>)

|                        |                                                       |
|------------------------|-------------------------------------------------------|
| <b>Measuring range</b> | EDAN: 25 bpm to 300 bpm<br>Nellcor: 20 bpm to 300 bpm |
| <b>Accuracy</b>        | EDAN: ±2 bpm<br>Nellcor: ±3 bpm (20 bpm to 250 bpm)   |
| <b>Resolution</b>      | EDAN: 1 bpm<br>Nellcor: 1 bpm                         |

### PR (NIBP)

|                        |                                            |
|------------------------|--------------------------------------------|
| <b>Measuring range</b> | EDAN: 40 bpm to 240 bpm                    |
| <b>Accuracy</b>        | EDAN: ±3 bpm or 3.5%, whichever is greater |
| <b>Resolution</b>      | EDAN: 1 bpm                                |

### PR (IBP)

|                        |                                                                                           |
|------------------------|-------------------------------------------------------------------------------------------|
| <b>Measuring range</b> | EDAN: 20 bpm to 300 bpm                                                                   |
| <b>Accuracy</b>        | EDAN: 30 bpm to 300 bpm: ±2 bpm or ±2%, whichever is greater; 20 bpm to 29 bpm: undefined |
| <b>Resolution</b>      | EDAN: 1 bpm                                                                               |

## TEMP

|                                |                                                |
|--------------------------------|------------------------------------------------|
| <b>Channel</b>                 | 2                                              |
| <b>Sensor Type</b>             | YSI-10K and YSI-2.252K                         |
| <b>Technique</b>               | Thermal resistance                             |
| <b>Measure Parameter</b>       | T1, T2, TD (the absolute value of T2 minus T1) |
| <b>Position</b>                | Skin, oral cavity, rectum                      |
| <b>Unit</b>                    | °C, °F                                         |
| <b>Measuring Range</b>         | 0°C to 50°C (32°F to 122°F)                    |
| <b>Resolution</b>              | 0.1°C (0.1°F)                                  |
| <b>Accuracy</b>                | ±0.3 °C (± 0.1 °C exclude sensor error)        |
| <b>Transient Response Time</b> | ≤30 s                                          |

## IBP

|                                      |                                                                                                  |
|--------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Channel</b>                       | 4                                                                                                |
| <b>Technique</b>                     | Direct invasive measurement                                                                      |
| <b>Measuring Range</b>               |                                                                                                  |
| ART, Ao, UAP, BAP,<br>FAP, LV, P1-P4 | (-50 mmHg to +400) mmHg                                                                          |
| PA                                   | (-6 mmHg to +120) mmHg                                                                           |
| CVP, ICP, LAP, RAP,<br>UVP           | (-10 mmHg to +40) mmHg                                                                           |
| <b>Resolution</b>                    | 1 mmHg                                                                                           |
| <b>Accuracy</b>                      | ±2% or ±1 mmHg, whichever is greater                                                             |
| <b>(not including sensor)</b>        | ICP: 0 mmHg to 40 mmHg: ±2 % or ±1 mmHg, whichever is greater;<br>-10 mmHg to -1 mmHg: undefined |
| <b>Unit</b>                          | kPa, mmHg, cmH <sub>2</sub> O                                                                    |

### EDAN G2 Sidestream Module CO<sub>2</sub>

|                                         |                                                                                                                                                       |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Intended patient</b>                 | Adult, pediatric, neonatal                                                                                                                            |
| <b>Measure Parameters</b>               | EtCO <sub>2</sub> , FiCO <sub>2</sub> , AwRR                                                                                                          |
| <b>Unit</b>                             | mmHg, %, kPa                                                                                                                                          |
| <b>Measuring Range</b>                  | EtCO <sub>2</sub> : 0 mmHg to 150 mmHg (0% to 20%)<br>FiCO <sub>2</sub> : 0 mmHg to 50 mmHg<br>AwRR: 0 rpm to 150 rpm                                 |
| <b>Resolution</b>                       | EtCO <sub>2</sub> : 1 mmHg<br>FiCO <sub>2</sub> : 1 mmHg<br>AwRR: 1 rpm                                                                               |
| <b>EtCO<sub>2</sub> Accuracy</b>        |                                                                                                                                                       |
| Typical conditions:                     | ±2 mmHg, 0 to 40 mmHg                                                                                                                                 |
| Ambient temperature: (25± 3) °C         | ±5% of reading, 41 to 70 mmHg                                                                                                                         |
| Barometric pressure: (760± 10) mmHg     | ±8% of reading, 71 to 100 mmHg                                                                                                                        |
| Balance gas: N <sub>2</sub>             | ±10% of reading, 101 to 150 mmHg                                                                                                                      |
| Sample gas flowrate: 100 ml/min         |                                                                                                                                                       |
| All conditions                          | ±12% of reading or ±4 mmHg, whichever is greater                                                                                                      |
| <b>AwRR Accuracy</b>                    | ±1 rpm                                                                                                                                                |
| <b>Sample Gas Flowrate</b>              | 50 ml/min, 70 ml/min or 100 ml/min (optional), accuracy: ±15 ml/min                                                                                   |
| <b>Warm-up Time</b>                     | Display reading within 20 s; reach to the designed accuracy within 2 minutes.                                                                         |
| <b>Response Time</b>                    | < 4 s (with 2 m gas sampling tube, sample gas flowrate: 100 ml/min&70 ml/min)<br>< 5.5 s (with 2 m gas sampling tube, sample gas flowrate: 50 ml/min) |
| <b>Barometric Pressure Compensation</b> | Automatic (The change of barometric pressure will not add additional errors to the measurement values.)                                               |
| <b>Zero Calibration</b>                 | Support                                                                                                                                               |
| <b>Calibration</b>                      | Support                                                                                                                                               |
| <b>Apnea Alarm Delay</b>                | 10 s, 15 s, 20 s (Default), 25 s, 30 s, 35 s, 40 s                                                                                                    |

### Respironics Sidestream and Mainstream Module CO<sub>2</sub>

|                                                            |                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Applicable Patient Type</b>                             | Adult, pediatric and neonatal patients                                                                                                                                                                                                                                                   |
| <b>Method</b>                                              | Infra-red Absorption Technique                                                                                                                                                                                                                                                           |
| <b>Measure Parameters</b>                                  | EtCO <sub>2</sub> , FiCO <sub>2</sub> , AwRR                                                                                                                                                                                                                                             |
| <b>Unit</b>                                                | mmHg, %, kPa                                                                                                                                                                                                                                                                             |
| <b>Measuring Range</b>                                     | EtCO <sub>2</sub> : 0 mmHg to 150 mmHg<br>FiCO <sub>2</sub> : 3 mmHg to 50 mmHg<br>AwRR: 2 rpm to 150 rpm (Sidestream)<br>0 rpm to 150 rpm (Mainstream)                                                                                                                                  |
| <b>Resolution</b>                                          | EtCO <sub>2</sub> 1 mmHg<br>FiCO <sub>2</sub> 1 mmHg<br>AwRR 1 rpm                                                                                                                                                                                                                       |
| <b>EtCO<sub>2</sub> Accuracy</b>                           | ±2 mmHg, 0 mmHg to 40 mmHg<br>±5% of reading, 41 mmHg to 70 mmHg<br>±8% of reading, 71 mmHg to 100 mmHg<br>±10% of reading, 101 mmHg to 150 mmHg<br>±12% of reading, RR is over 80 rpm (Sidestream)<br>There will be no degradation in performance due to respiration rate. (mainstream) |
| <b>AwRR Accuracy</b>                                       | ±1 rpm                                                                                                                                                                                                                                                                                   |
| <b>Apnea Alarm Delay</b>                                   | 10 s, 15 s, 20 s (Default), 25 s, 30 s, 35 s, 40 s                                                                                                                                                                                                                                       |
| <b>Zero Calibration</b>                                    | Support                                                                                                                                                                                                                                                                                  |
| <b>Sample Gas Flow Rate (Sidestream)</b>                   | (50 ±10) ml /min                                                                                                                                                                                                                                                                         |
| <b>Barometric Pressure Compensation</b>                    | User setup                                                                                                                                                                                                                                                                               |
| <b>CO<sub>2</sub> Rise Time/Response Time (Mainstream)</b> | < 60 ms                                                                                                                                                                                                                                                                                  |
| <b>Sensor Response Time (Sidestream)</b>                   | < 3 seconds, includes transport time and rise time                                                                                                                                                                                                                                       |

### Masimo Sidestream Module CO<sub>2</sub>

|                                                    |                                                                             |
|----------------------------------------------------|-----------------------------------------------------------------------------|
| Ambient CO <sub>2</sub>                            | ≤ 800 ppm (0.08 vol%)                                                       |
| Sampling Flow Rate                                 | (50 ± 10) sml/min                                                           |
| Respiration Rate                                   | 0 to 150 ± 1 breaths/min.                                                   |
| Calibration                                        | No span calibration is required.                                            |
| Warm-up Time                                       | < 10 seconds                                                                |
| CO <sub>2</sub> Rise Time At 50sml/min Sample Flow | ≤ 200 ms                                                                    |
| NomoLine ISA CO <sub>2</sub> System Response Time  | < 3 seconds                                                                 |
| Apnea Alarm Delay                                  | 15 s, 20 s (Default), 25 s, 30 s, 35 s, 40 s                                |
| AwRR Range                                         | 0 rpm to 150 rpm                                                            |
| AwRR Accuracy                                      | ± 1 rpm                                                                     |
| CO <sub>2</sub> Accuracy                           |                                                                             |
| Standard Conditions                                | ±(0.2 vol% + 2% of reading), (0 to 15) vol%<br>Unspecified, (15 to 25) vol% |
| All Conditions                                     | ±(0.3 kPa + 4% of reading)                                                  |

### Masimo Mainstream Module CO<sub>2</sub>

|                            |                                                                             |
|----------------------------|-----------------------------------------------------------------------------|
| Respiration Rate           | 0 to 150 ± 1 breaths/min.                                                   |
| Calibration                | No span calibration required for the IR bench.                              |
| Warm-up Time               | < 10 seconds                                                                |
| Rise Time (@ 10 l/min)     | ≤ 90 ms                                                                     |
| Total System Response Time | Total system response time                                                  |
| Apnea Alarm Delay          | 15 s, 20 s (Default), 25 s, 30 s, 35 s, 40 s                                |
| AwRR Range                 | 0 rpm to 150 rpm                                                            |
| AwRR Accuracy              | ± 1 rpm                                                                     |
| CO <sub>2</sub> Accuracy   |                                                                             |
| Standard Conditions        | ±(0.2 vol% + 2% of reading), (0 to 15) vol%<br>Unspecified, (15 to 25) vol% |
| All Conditions             | ±(0.3 kPa + 4% of reading)                                                  |

### C.O.

|                    |                                                                                                                                                |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Technique          | Thermodilution Technique                                                                                                                       |
| Measure Parameters | C.O.: TB, TI                                                                                                                                   |
| Measuring Range    | C.O.: 0.1 L/min to 20 L/min<br>TB: 23°C to 43°C (73.4°F to 109.4°F)<br>TI: -1°C to 27°C (30.2°F to 80.6°F)                                     |
| Resolution         | C.O. : 0.1 L/min<br>TB, TI : 0.1°C (+0.1°F)                                                                                                    |
| Accuracy           | C.O.: ±5% or ±0.2 L/min, whichever is greater<br>TB: ±0.1°C (±0.18 °F) (not including sensor)<br>TI : ±0.1°C (±0.18 °F) (not including sensor) |

### EDAN G7 (Sidestream) AG

|                                  |                                                                                                                                                             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intended Patient                 | Adult, pediatric, neonatal                                                                                                                                  |
| Measure Parameters               | Halothane (HAL), Isoflurane (ISO), Enflurane (ENF), Sevoflurane (SEV), Desflurane (DES), CO <sub>2</sub> , O <sub>2</sub> , N <sub>2</sub> O, AwRR, and MAC |
| Unit                             | HAL, ISO, ENF, SEV, DES, N <sub>2</sub> O: %;<br>CO <sub>2</sub> , O <sub>2</sub> : mmHg, %, kPa, default is %;<br>AwRR: bpm;                               |
| Measuring Range                  |                                                                                                                                                             |
| CO <sub>2</sub>                  | 0~15 vol%                                                                                                                                                   |
| N <sub>2</sub> O                 | 0~100 vol%                                                                                                                                                  |
| Halothane/ Enflurane/ Isoflurane | 0~8 vol%                                                                                                                                                    |
| Sevoflurane                      | 0~10 vol%                                                                                                                                                   |

|                    |                                                                                                                                      |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Desflurane         | 0~22 vol%                                                                                                                            |
| O <sub>2</sub>     | 0~100%                                                                                                                               |
| Resolution         | N <sub>2</sub> O, O <sub>2</sub> : 1%<br>CO <sub>2</sub> , AG: 0.1%                                                                  |
| AwRR               | Measurement range: 2 ~ 150 rpm<br>Measuring accuracy: ±1 bpm (120 bpm and below), Not specified (120 bpm above)<br>Resolution: 1 rpm |
| Sampling Flow Rate | 150 ml/min, accuracy ±15 ml/min                                                                                                      |
| Warm-up Time       | Display reading within 20 s; reach to the designed accuracy within 2 minutes                                                         |
| Response Time      | < 4 s (with 2 m gas sampling tube, sample gas flowrate: 150 ml/min)                                                                  |

### Masimo ISA Analyzer AG

|                               |                                                                                                                                                                                            |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Type                   |                                                                                                                                                                                            |
| ISA AX+                       | Displaying the concentration of CO <sub>2</sub> , N <sub>2</sub> O, and two anesthesia agent and identifying the anesthesia agent automatically (built-in module)                          |
| ISA OR+                       | Displaying the concentration of CO <sub>2</sub> , O <sub>2</sub> , N <sub>2</sub> O, and two anesthesia agent and identifying the anesthesia agent automatically (built-in module)         |
| Measurement Parameters        | CO <sub>2</sub> , N <sub>2</sub> O, O <sub>2</sub> , Halothane (HAL), Isoflurane (ISO), Enflurane (ENF), Sevoflurane (SEV), Desflurane (DES), AwRR, MAC                                    |
| Measurement Principle         | CO <sub>2</sub> , N <sub>2</sub> O, Anesthesia Agent: Infra-red absorption characteristic;<br>O <sub>2</sub> : Paramagnetic method                                                         |
| Sampling Flow Rate            | 50 ± 10 ml/min                                                                                                                                                                             |
| Compensations                 | Automatic compensation for pressure, temperature and broadening effects on CO <sub>2</sub> .                                                                                               |
| Warm-up Time                  | < 20 s                                                                                                                                                                                     |
| Measurement Range             | CO <sub>2</sub> : 0 to 25 vol%<br>O <sub>2</sub> : 0 to 100 vol%<br>N <sub>2</sub> O: 0 to 82 vol%<br>HAL, ENF, ISO, SEV, DES: 0-25 vol%<br>AwRR: 0 rpm to 150 rpm                         |
| Resolution                    | CO <sub>2</sub> : 0.1%<br>HAL, ENF, ISO, SEV, DES: 0.1%<br>N <sub>2</sub> O: 1%<br>O <sub>2</sub> :1%<br>AwRR: 1 rpm                                                                       |
| Accuracy(Standard Conditions) |                                                                                                                                                                                            |
| CO <sub>2</sub>               | ± (0.2 vol% + 2% of reading), 0 to 15 vol%<br>Unspecified, 15 to 25 vol%                                                                                                                   |
| N <sub>2</sub> O              | ± (2 vol% + 2% of reading), 0 to 82 vol%                                                                                                                                                   |
| HAL, ENF, ISO                 | ± (0.15 vol% + 5% of reading), 0 to 8 vol %<br>Unspecified , 8 to 25 vol %                                                                                                                 |
| SEV                           | ± (0.15 vol% + 5% of reading), 0 to 10 vol %<br>Unspecified, 10 to 25 vol %                                                                                                                |
| DES                           | ± (0.15 vol% + 5% of reading), 0 to 22 vol %<br>Unspecified, 22 to 25 vol %                                                                                                                |
| O <sub>2</sub>                | ± (1 vol% + 2% of reading), 0 to 100 vol %                                                                                                                                                 |
| Accuracy(All Conditions)      |                                                                                                                                                                                            |
| CO <sub>2</sub>               | ±(0.3 kPa + 4% of reading)                                                                                                                                                                 |
| N <sub>2</sub> O              | ±(2 kPa + 5% of reading)                                                                                                                                                                   |
| Agents                        | ±(0.2 kPa + 10% of reading)<br>(The accuracy specification is not valid if more than two agents are present in the gas mixture. If more than two agents are present, an alarm will be set) |
| O <sub>2</sub>                | ±(2 kPa + 2% of reading)                                                                                                                                                                   |
| AwRR Accuracy                 | ±1 rpm                                                                                                                                                                                     |
| Apnea Alarm Delay             | 20 s (Default), 25 s, 30 s, 35 s, 40 s                                                                                                                                                     |

## Masimo IRMA Module AG

|                                         |                                                                                                                                                                                            |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Type: IRMA AX+</b>            | Displaying the concentration of CO <sub>2</sub> , N <sub>2</sub> O and two anesthesia agent and identifying two anesthesia agent                                                           |
| <b>Measurement Parameters</b>           | CO <sub>2</sub> , N <sub>2</sub> O, HAL, Isoflurane (ISO), Enflurane (ENF), Sevoflurane (SEV), Desflurane (DES), AwRR, MAC                                                                 |
| <b>Measurement Principle</b>            | CO <sub>2</sub> , N <sub>2</sub> O, anesthesia agent: infra-red absorption characteristic                                                                                                  |
| <b>Barometric Pressure Compensation</b> | Automatic                                                                                                                                                                                  |
| <b>Warm-up Time</b>                     | <20 seconds                                                                                                                                                                                |
| <b>Measurement Range</b>                | CO <sub>2</sub> : 0 to 25 vol%<br>N <sub>2</sub> O: 0 to 82 vol%<br>HAL, ENF, ISO, SEV, DES: 0 to 25 vol%<br>AwRR: 0 to 150 rpm                                                            |
| <b>Resolution</b>                       | CO <sub>2</sub> : 0.1%<br>HAL, ENF, ISO, SEV, DES: 0.1%<br>N <sub>2</sub> O: 1%<br>AwRR: 1 rpm                                                                                             |
| <b>Accuracy(Standard Conditions)</b>    |                                                                                                                                                                                            |
| CO <sub>2</sub>                         | ± (0.2 vol% + 2% of reading), 0 to 15 vol%                                                                                                                                                 |
| N <sub>2</sub> O                        | ± (2 vol% + 2% of reading), 0 to 82 vol%                                                                                                                                                   |
| HAL, ENF, ISO                           | ± (0.15 vol% + 5% of reading), 0 to 8 vol %                                                                                                                                                |
| SEV                                     | ± (0.15 vol% + 5% of reading), 0 to 10 vol %                                                                                                                                               |
| DES                                     | ± (0.15 vol% + 5% of reading), 0 to 22 vol %                                                                                                                                               |
| <b>Accuracy(All Conditions)</b>         |                                                                                                                                                                                            |
| CO <sub>2</sub>                         | ±(0.3 kPa + 4% of reading)                                                                                                                                                                 |
| N <sub>2</sub> O                        | ±(2 kPa + 5% of reading)                                                                                                                                                                   |
| Agents                                  | ±(0.2 kPa + 10% of reading)<br>(The accuracy specification is not valid if more than two agents are present in the gas mixture. If more than two agents are present, an alarm will be set) |
| <b>AwRR Accuracy</b>                    | ±1 rpm                                                                                                                                                                                     |
| <b>Apnea Alarm Delay</b>                | 20 s (Default), 25 s, 30 s, 35 s, 40 s                                                                                                                                                     |

## Safety Specifications

|                                 |                                                                                                                      |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Compliant with Standards</b> | IEC 60601-1: 2005+A1 :2012; IEC 60601-1-2: 2014; EN 60601-1: 2006+A1 :2013; EN 60601-1-2: 2015; IEC 80601-2-49: 2018 |
| <b>Anti-electroshock Type</b>   | Class I equipment and internal powered equipment                                                                     |
| <b>Anti-electroshock Degree</b> | CF                                                                                                                   |
| <b>Ingress Protection</b>       | IP22                                                                                                                 |

## Environmental Specifications

|                    |                                                                                                    |
|--------------------|----------------------------------------------------------------------------------------------------|
| <b>Temperature</b> | Working: +0°C to +40°C (32°F ~ 104°F)<br>Transport and storage: -20°C to +60°C (-4°F ~ 140°F)      |
| <b>Humidity</b>    | Working: 15%RH to 95%RH (non-condensing)<br>Transport and storage: 10%RH to 95%RH (non-condensing) |
| <b>Altitude</b>    | Working: 57 kPa to 107.4 kPa<br>Transport and storage: 16 kPa to 107.4 kPa                         |