

# Masimo Capnography and Multi-gas OEM Solutions

Breakthrough sidestream and mainstream gas monitoring technology



Masimo capnography and multi-gas solutions are flexible, easy to integrate, and designed to measure respiratory gases in a wide range of clinical applications and patient populations. They feature:

- > Complete end-to-end solutions, with both mainstream and sidestream options
- > Flexible configurations, able to accommodate the full spectrum of gas monitoring needs, from capnography to advanced multi-gas measurement
- > Ease of integration with external analyzers and built-in modules that use a universal communication protocol
- > Moisture-wicking sampling line technology for effective sidestream capnography and multi-gas measurement

## NomoLine® ISA™ Sidestream Analyzers

### Flexible sidestream gas monitoring solutions in a variety of innovative configurations

- > Designed for real-time, accurate, continuous measurement of inspired and expired gas concentrations and respiratory rate
  - Able to measure CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>O, and anesthetic agents (HAL, ENF, ISO, SEV, DES) with auto agent-ID

#### Features and Benefits:

- > A variety of gas analyzer options allows monitoring of all patient populations (adults through neonates) in a variety of clinical settings, including the OR, ICU, general ward, emergency department, and during transportation
- > With virtually no warm-up time and full accuracy performance in seconds, accurate data is quickly available to help clinicians intervene faster
- > 50 ml/min sampling flow facilitates accurate measurements and crisp waveforms, allowing for gas monitoring on patients with low tidal volumes and high respiratory rates, such as neonates
- > Compact size, lightweight design, and the availability of multiple configurations (external and built-in) promotes easy integration
- > Low power consumption and automatic temperature and pressure compensation make NomoLine ISA gas analyzers easy to maintain



NomoLine ISA CO<sub>2</sub>,  
ISA AX+, ISA OR+



NomoLine ISA  
Capno Module

## NomoLine Sampling Lines

### Sampling lines with moisture-wicking technology

- > Compatible with Masimo ISA analyzers to provide accurate sidestream capnography and multi-gas measurements

#### Features and Benefits:

- > Multiple sampling line options allow for use on both intubated and non-intubated patients in both low- and high-humidity environments
- > Patented polymer allows moisture to defuse into the environment, providing accurate measurements and eliminating the need for a water trap
- > Hydrophobic filter protects module from bacteria, viruses, and water intrusion
- > Low-flow application design facilitates use across all patient populations, including adult, paediatric, infant, and neonatal patients
- > Lightweight, soft cannulas are ergonomically designed for greater patient comfort
- > Simple plug-in connector allows for a leak-free connection to the gas analyzer



NomoLine HH Nasal/Oral  
Cannula with O<sub>2</sub>



NomoLine LH Airway Adapter Set

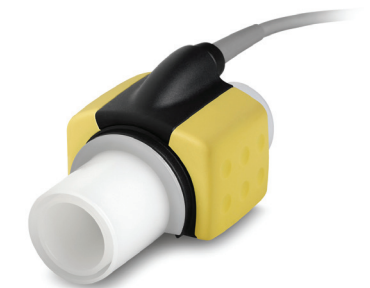
## IRMA™ Mainstream Analyzers

### Versatile, mainstream capnography and multigas technology in a compact, lightweight design

- > Designed for real-time, accurate, and continuous measurement of inspired and expired gas concentrations and respiratory rate
  - Able to measure CO<sub>2</sub>, N<sub>2</sub>O, and anesthetic agents (HAL, ENF, ISO, SEV, DES) with auto agent-ID
- > Unique, flexible design makes IRMA the only mainstream multi-gas analyzer in the world

#### Features and Benefits:

- > Compact size and lightweight design allow monitoring of adult, pediatric, and infant patients in a variety of clinical settings, including the OR, ICU, emergency department, and during transportation
- > With virtually no warm-up time and full accuracy performance in seconds, accurate data is quickly available to clinicians, promoting efficient response
- > Flexible design supports monitoring patients with high respiration rates (up to 150 bpm), while providing crisp waveforms with fast rise times
- > Low power consumption and automatic temperature and pressure compensation make IRMA gas analyzers easy to maintain
- > Small size and the availability of multiple configurations promotes easy integration
- > With measurements recorded through respiratory circuit via the IRMA Airway Adapter, removing respiratory gas from the patient is not required



IRMA CO<sub>2</sub>



IRMA AX+

## IRMA Airway Adapters

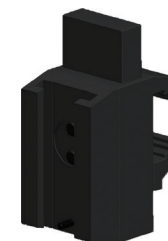


IRMA Adult/Pediatric  
Airway Adapter



IRMA Infant  
Airway Adapter

## ISA and IRMA Accessories



ISA Analyzer Modura  
Holder with ISA Analyzer  
Clamp Adapter



NomoLine ISA  
Mounting Kit



ISA Gas Exhaust Kit



IRMA Holder Velcro

# Performance and Specifications

ORDERING INFORMATION		GAS ANALYSER	
IRMA CO2	REF 200101/200107	Automatic compensation	Pressure and temperature
IRMA AX+ (CO2, N2O, 5 AA, AA ID)	REF 200601/200607	Warm-up time	IRMA CO2/NomoLine ISA CO2: < 10 sec IRMA AX+/ISA AX+/ISA OR+: < 20 sec
NomoLine ISA Capno Module	REF 4354	ISA sampling flow rate	50 ± 10 ml/min
NomoLine ISA CO2	REF 4410/4412	Fulfills the requirements of EN ISO 80601-2-55	
ISA AX+ module (CO2, N2O, 5 AA, AA ID)	REF 700601	Accuracy during standard conditions:	
ISA AX+ (CO2, N2O, 5 AA, AA ID)	REF 800601/800607		
ISA OR+ module (CO2, N2O, 5 AA, AA ID)	REF 700401		
ISA OR+ (CO2, O2, N2O, 5 AA, AA ID)	REF 800401/800407		
GENERAL		RANGE	
Weight	IRMA CO2/AX+: < 25 g (cable excluded) NomoLine ISA CO2: < 98 g (cable excluded) ISA AX+: < 130 g, ISA OR+: < 420 g	CO2	0-15 vol% ± (0.2 vol% + 2% of reading)
Size	IRMA CO2/AX+: 38 x 37 x 34 mm (1.49 x 1.45 x 1.34 inches) NomoLine ISA CO2: 37 x 91 x 60 mm (1.4 x 3.6 x 2.4 inches) ISA AX+: 33 x 78 x 49 mm (1.3 x 3.1 x 1.9 inches) ISA OR+: 49 x 90 x 100 mm (1.9 x 3.5 x 3.9 inches)	N2O	0-100 vol% ± (2 vol% + 2% of reading)
Power supply	4.5 to 5.5 VDC IRMA CO2: < 1.0 W (normal op.) IRMA AX+: < 1.4 W (normal op.) NomoLine ISA CO2: < 0.9 W (normal op.) ISA AX+: < 1.6 W (normal op.) ISA OR+: < 2.0 W (normal op.)	HAL, ISO, ENF	0-8 vol% ± (0.15 vol% + 5% of reading)
		SEV	0-10 vol% ± (0.15 vol% + 5% of reading)
		DES	0-22 vol% ± (0.15 vol% + 5% of reading)
		O2 (ISA OR+)	0-100 vol% ± (1 vol% + 2% of reading)
		Rise time	IRMA CO2: ≤ 90 ms IRMA AX+: CO2 ≤ 90 ms, N2O, Agents ≤ 300 ms NomoLine ISA CO2: ≤ 200 ms ISA AX+/OR+: CO2 ≤ 300 ms, N2O, Agents, O2 ≤ 400 ms, HAL ≤ 500 ms
		Analyzer system response time	IRMA CO2/AX+: < 1 sec NomoLine ISA CO2: ≤ 3 sec, ISA AX+/OR+: ≤ 4 sec
		Breath detection	Adaptive threshold, minimum 1 vol% change in CO2 concentration
		Respiratory rate	0-150 bpm ± 1 bpm
ENVIRONMENTAL		CERTIFICATIONS	
Operating temperature	IRMA CO2: 0 to 40 °C (32 to 104 °F) IRMA AX+: 10 to 40 °C (50 to 104 °F) NomoLine ISA CO2: 0 to 50 °C (32 to 122 °F) ISA AX+/OR+: 5 to 50 °C (41 to 122 °F)	IRMA and ISA external analyzers are CE Marked according to the 93/42/EEC Medical Device Directive	
Storage temperature	IRMA CO2/IRMA AX+: -40 to 70 °C (-40 to 158 °F) NomoLine ISA CO2: -40 to 70 °C (-40 to 158 °F) ISA AX+/OR+: -40 to 70 °C (-40 to 158 °F)	Data subject to change without notice	
Operating humidity	10-95% RH (non-condensing)	CONNECTOR SOLUTIONS	
Operating atmospheric pressure	525-1200 hPa (< 5211 m)	IRMA and ISA external analyzers are available with either a female DB-9 connector or a male 8-pin LEMO Push n' Pull connector for power supply and RS-232 communication. An open-end cable (REF 100270) that matches the DB-9 connector can also be supplied for customer specific connector solutions.	
PATIENT CONNECTIONS			
IRMA Airway Adapter Adult/Pediatric	6 ml dead space REF 106220		
IRMA Airway Adapter Infant	1 ml dead space REF 106260		
NomoLine sampling lines	See separate NomoLine information for full details of available options		

## Variety of Options to Meet All of Your Needs

		Analyzer Options				
		NomoLine ISA CO2	ISA AX+	ISA OR+	IRMA CO2	IRMA AX+
Gases	CO2	•	•	•	•	•
	O2			•		
	N2O		•	•		•
	Agents		•	•		•
	Auto ID/mixed agents		•	•		•
	Optional built-in module	•	•	•		

Caution: Federal (USA) law restricts this device to sale by or on the order of a physician. See instructions for use for full prescribing information, including indications, contraindications, warnings, and precautions.

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