

MRI Monitor Compact Airway Options

Complete anesthesia respiratory monitoring
with Patient Spirometry

The MRI Monitor has a comprehensive set of innovative parameters. Ventilatory and hemodynamic information are displayed on a single screen, providing caregivers a holistic picture of the patient's status. The MRI Airway Gas module is an excellent tool for managing the patient's ventilation during anesthesia.



Features

- Airway options specifically designed for the MRI Monitor to measure anesthetic agent with auto-identification, CO₂, Patient Oxygen and Patient Spirometry
- All parameters measured at the patient's airway
- D-fend water separation system
- Full numerical and graphical trends of all measured data

Patient Oxygen

- GE Datex-Ohmeda MRI-dedicated paramagnetic technology
- Differential paramagnetic sensor protected against high magnetic fields
- Inspired and end-tidal values, inspired/expired difference, waveform

CO₂ and N₂O

- GE Datex-Ohmeda infrared technology
- Inspired and end-tidal values, waveform and respiration rate

Anesthetic Agents

- GE Datex-Ohmeda infrared technology
- Automatically measures and identifies all five agents: halothane, enflurane, isoflurane, sevoflurane and desflurane
- Minimum alveolar concentration (MAC)
- Agent mixture detection
- Balance gas

Patient Spirometry

- Patented D-lite+® and Pedi-lite+ flow sensor and gas sampler
- Airway pressures, waveform, minute and tidal volumes, compliance, airway resistance and flow waveforms
- Pressure-volume and flow-volume loops
- Ability to store and print up to six loops
- Recall saved loops to compare to current loop



Technical Specifications

General

Dimensions (H x W x D) 112 x 121 x 228 mm
(4.4 x 4.6 x 9.0 in)

Weight 2.1 kg (4.6 lb)

Sampling rate 200 mL/min \pm 20 mL

Automatic compensation for atmospheric pressure variation (500 to 800 mmHg), temperature and CO₂/N₂O and CO₂/O₂ collision broadening effect. Parameter display update interval typically breath-by-breath.

Functional alarms for

Blocked sample line

D-fend check

D-fend replacement

Letters in the option name stand for

MRI = indicated for MRI use

C = CO₂ and N₂O

O = patient O₂

Ai = anesthetic agents and agent identification

V = patient spirometry

Non-disturbing gases

Ethanol, acetone, methane, nitrogen, nitric oxide, carbon monoxide, water vapor

Maximum effect of non-disturbing gases on readings
CO₂ < 0.2 vol%; N₂O, O₂ < 2 vol%;
anesthetic agents < 0.15 vol%

Carbon dioxide (CO₂)

EtCO₂ End-tidal CO₂ concentration

FiCO₂ Inspired CO₂ concentration

CO₂ waveform

Measurement range 0 to 15 vol%
(0 to 15 kPa, 0 to 113 mmHg)

Accuracy \pm (0.2 vol% + 2% of reading)

GE Datex-Ohmeda infrared sensor

Adjustable low and high alarm limits for EtCO₂ and FiCO₂

Respiration rate (RR)

Measurement range 4 to 60 breaths/min

Detection criteria 1% variation in CO₂

Adjustable low and high alarm limits for respiration rate;
alarm for apnea

Patient oxygen (O₂)

FiO₂ Inspired O₂ concentration

EtO₂ End-tidal O₂ concentration

FiO₂-EtO₂ Inspired-expired difference

O₂ waveform

Measurement range 0 to 100%

Accuracy \pm (1 vol% + 2% of reading)

GE Datex-Ohmeda differential paramagnetic sensor

Paramagnetic sensor protected for the effects of high magnetic field

Adjustable low and high alarm limits for FiO₂ and EtO₂

Nitrous oxide (N₂O)

Measurement range 0 to 100%

Accuracy \pm (2 vol% + 2% of reading)
(N₂O \leq 85%)

Alarm for FiN₂O > 82%

Anesthetic agent (AA)

Anesthetic agent waveform

MAC value displayed

Agent mixture detection

Halothane, isoflurane, enflurane

Measurement range 0 to 6%

Accuracy $\pm(0.15 \text{ vol\%} + 5\% \text{ of reading})$

Sevoflurane

Measurement range 0 to 8%

Accuracy $\pm(0.15 \text{ vol\%} + 5\% \text{ of reading})$

Desflurane

Measurement range 0 to 20%

Accuracy $\pm(0.15 \text{ vol\%} + 5\% \text{ of reading})$

Agent identification

Identification threshold 0.15 vol%*

Adjustable high and low alarm limits for EtAA, FiAA

Patient Spirometry

Pressure-volume loop

Flow-volume loop

Airway pressure and flow waveforms

Adjustable low and high alarm limits for Ppeak, PEEPtot and MVexp

Alarms for MVexp << MVinsp and for MVexp low

Detection through D-lite or Pedi-lite flow sensor and gas sampler with following specifications:

Respiration rate

D-lite(+) 4 to 35 breaths/min

Pedi-lite(+) 4 to 50 breaths/min

Tidal volume measurement range

D-lite(+) 150 to 2000 mL

Pedi-lite(+) 15 to 300 mL

Accuracy*

D-lite(+) $\pm 6\%$ or 30 mL

Pedi-lite(+) $\pm 6\%$ or 4 mL

Minute volume measurement range

D-lite(+) 2 to 20 L/min

Pedi-lite(+) 0.5 to 5 L/min

Accuracy*

D-lite(+) $\pm 6\%$

Pedi-lite(+) $\pm 6\%$

Airway pressure measurement range

D-lite(+) -20 to 100 cmH₂O

Pedi-lite(+) -20 to 100 cmH₂O

Accuracy*

D-lite(+) $\pm 1 \text{ cmH}_2\text{O}$

Pedi-lite(+) $\pm 1 \text{ cmH}_2\text{O}$

Display units cmH₂O, mmHg, kPa, mbar, hPa

* Typical value

Flow measurement range

D-lite(+) 1.5 to 100 L/min

Pedi-lite(+) 0.25 to 25 L/min

IE measurement range

D-lite(+) 14.5 to 21

Pedi-lite(+) 14.5 to 21

Compliance measurement range

D-lite(+) 4 to 100 mL/cmH₂O

Pedi-lite(+) 1 to 100 mL/cmH₂O

Airway resistance measurement range

D-lite(+) 0 to 40 cmH₂O/L/s

Pedi-lite(+) cmH₂O/L/s

Sensor specifications

Dead space

D-lite(+) 9.5 mL

Pedi-lite(+) 2.5 mL

Resistance at 30 L/min

D-lite(+) 0.5 cmH₂O

Resistance at 10 L/min

D-lite(+) 1.0 cmH₂O

Configuration Information

Hemodynamic configurations

Frame option	ECG	SpO ₂ /pleth	NIBP	InvBP x 2
N-PSN	•	•	•	•
N-SN	•	•	•	

Configurations with gas measurement

Frame option with gas	ECG	SpO ₂ /pleth	NIBP	InvBP x 2
N-PSNG *	•	•	•	•
N-SNG *	•	•	•	

Airway gas option	CO ₂	Patient O ₂	N ₂ O	Agents	Agent identification
E-MRICO	•	•	•		
E-MRICAiO	•	•	•	•	•

Configurations with gas and spirometry

Frame option with gas and spirometry	ECG	SpO ₂ /pleth	NIBP	InvBP x 2
N-PSNGV **	•	•	•	•
N-SNGV **	•	•	•	

Airway gas option	CO ₂	Patient O ₂	N ₂ O	Agents	Agent identification	Spirometry
E-MRICAiOV	•	•	•	•	•	•

For accessories, please refer to the Accessories and Supplies catalog.

* N-PSNG, N-SNG, N-PSNGV or N-SNGV needed for CO₂, N₂O, O₂, and AA measurement

** N-PSNGV or N-SNGV needed for spirometry option

N-PSN or N-PSNG or N-PSNGV needed for InvBP measurement

© 2008 General Electric Company – All rights reserved.

General Electric Company reserves the right to make changes in specifications and features shown herein, or discontinue the product described at any time without notice or obligation. Contact your GE Representative for the most current information.

GE and GE Monogram are trademarks of General Electric Company.

D-lite is a trademark of GE Healthcare Finland Oy.

GE Healthcare Finland Oy, a General Electric company, doing business as GE Healthcare.

Healthcare Re-imagined

GE is dedicated to helping you transform healthcare delivery by driving critical breakthroughs in biology and technology. Our expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, and biopharmaceutical manufacturing technologies is enabling healthcare professionals around the world to discover new ways to predict, diagnose and treat disease earlier. We call this model of care “Early Health.” The goal: to help clinicians detect disease earlier, access more information and intervene earlier with more targeted treatments, so they can help their patients live their lives to the fullest. Re-think, Re-discover, Re-invent, Re-imagine.

GE Healthcare
P.O. Box 900, FIN-00031 GE, Finland
Tel. +358 10 394 11
Fax +358 9 146 3310

www.gehealthcare.com



GE imagination at work