

# VEO™ Multigas Monitor for PC



## World's first mainstream multigas monitor for research professionals

### The Advantages are all yours!

If you are in need of a multigas monitor then there are many important considerations you should take into account. Some are of obvious importance while others are subtle yet critical for your ultimate satisfaction. When it comes to the VEO Multigas Monitor, the advantages are all yours:

### Gas measurements in any environment

Whatever technology you decide to buy it will have to last for the foreseeable future. What you need is a solution with the flexibility to measure gas in different applications and trouble-free cost effective operation. The unique user friendly interface and comprehensive alarm system of the VEO Multigas Monitor makes it the perfect choice for monitoring gas in research, service and even clinical applications.

### A complete monitor in a probe

The entire multigas monitor is comprised in the IRMA probe which is as small as an oximeter sensor and weighs only 25 grams. It is designed using the latest advances in component and microprocessor technology to provide a complete mainstream gas monitoring system with unique versatility and design. The IRMA probe measures infrared light absorption at different wavelengths in order to precisely determine gas concentrations in the mixture. The VEO Multigas Monitors do not need service or regular calibration, thus lowering overall running costs.

### Graphical and numerical data on your screen

The IRMA probe comprises all the necessary components required for advanced signal processing and a comprehensive RS-232 interface. The IRMA probes deliver processed data for display by the VEO Multigas Monitor on the screen of your PC.

### Flexibility for the future

The IRMA™ mainstream probe measures CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>O, anaesthetic agents (HAL, ENF, ISO, SEV, DES) and provide agent identification with the ability to measure mixed agents. Choose the probe that best suits your needs today. If these needs change you can simply complement your VEO Multigas Monitor with a new probe.

### A completely portable multigas monitor in your hands!

Free yourself from the expenses of current solutions. Add mobility and convenience to your work. Imagine having a complete multigas monitor that you can carry with you anywhere and at a fraction of the costs normally associated with standard monitors.

### Extremely easy to install

A multigas monitor is normally a complex device and often a major investment for a researcher, technician or a hospital department. With the IRMA probe and the VEO Multigas Monitor we are talking about an equally complex multigas monitor that can be installed on your computer in minutes. Simply install the VEO Multigas Monitor, connect the IRMA probe to the digital port of your PC, and start measuring.

**We call it PLUG-IN and MEASURE...™**

# Technical Specifications



## General

**Description:** Multigas Monitor for Windows XP/ Vista comprising VEO Software and an IRMA Probe

**Display:** Fi/ET values for CO<sub>2</sub>, N<sub>2</sub>O, primary agent, secondary agent; MAC; RR

**Trends:** Fi/ET CO<sub>2</sub>, N<sub>2</sub>O and Agents up to 16 h

**Alarms:** Adjustable alarm levels for LO/HI ETCO<sub>2</sub>, CO<sub>2</sub> Rebreathing, Apnea, RR, HI FiN<sub>2</sub>O, LO/HI FiAA

**Recording:** Microsoft compatible patient data file stored in the memory of the PC

**DEMO Mode:** Four (4) DEMO Modes for training and educational purposes

**Languages:** Czech, Dutch, English, French, German, Hungarian, Italian, Japanese, Norwegian, Polish, Russian, Spanish, Swedish

## Gas Analyzer

**IRMA Probe:** Ultra small infrared main stream multigas probe comprising a multi channel IR bench, barometric pressure sensor, power regulator, signal processor and an RS-232 interface

**Calibration:** No routine calibration is required.

**Warm-up time:** 10 sec, full specifications within 60 sec

**Interface:** RS-232 operating at 9600 bps

**Power consumption:** < 1.4 W

**Weight:** IRMA AX+: 25 g

**Size:** IRMA AX+: 38 x 37 x 34 mm (1.49 x 1.45 x 1.34 inches),

**Shock proof design:** Withstands repeated 1 m drops

**Operating:** IRMA AX+: 10 to 40 °C (50 to 104 °F),

**Storage:** -20 to 50 °C (-4 to 122 °F)

**Humidity:** 10 - 95 %, non-condensing

**Atm.pres:** IRMA CO<sub>2</sub>/AX+: 525 - 1200 hPa (4572 m)

## Airway Adapters

**Adult/Pediatric:** 6 ml dead space

**Infant:** 1 ml dead space

## Gases

The accuracy of all measurement values is according to the requirements of EN ISO 21647:2004 and EN 864:1996

**During standard conditions:**

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	Range (IRMA AX+)	Accuracy
CO <sub>2</sub>	0-10 vol%	±(0.2 vol% + 2 % of reading)
	10-15 vol%	±(0.3 vol% + 2 % of reading)
N <sub>2</sub> O	0 - 100 vol%	±(2 vol% + 2 % of reading)
	HAL, ISO, 0 - 8 vol%	±(0.15 vol% + 5 % of reading)
ENF		
SEV	0 - 10 vol%	±(0.15 vol% + 5 % of reading)
DES	0 - 22 vol%	±(0.15 vol% + 5 % of reading)

**Rise Time:** CO<sub>2</sub> < 90 ms, N<sub>2</sub>O, AA < 300 ms

**Breath detect:** Adaptive threshold, minimum 1 % CO<sub>2</sub> change

**Respiratory rate:** 0 - 150 bpm ± 1 bpm

**Agent threshold:** IRMA AX+: Primary agent 0.15 vol%, secondary agent 0.2 vol% + 10 % of total agent concentration. When concentration has passed the threshold, concentrations will be reported even below the threshold.

**Compensation:** Automatic for atmospheric pressure, temperature and spectral interference

## System Requirements

Your computer and system software must meet the following requirements:

### Windows XP / Vista:

- OS: Microsoft® Windows® XP / Vista pre-installed
- Microsoft.NET Framework installed
- CPU: Intel Pentium 4, 1.2 GHz or faster
- Memory: 256 MB or more
- Display resolution: 1280 x 1024 or more

### Others:

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## Certifications

CE marked according to the 93/42/EEC Medical Device Directive

*Data subject to change without notice*



VEO Multigas Monitor, AX+  
(CO<sub>2</sub>, N<sub>2</sub>O, HAL, ENF, ISO, SEV, DES)  
CAT.NO. 300602



IRMA Airway Adapter Adult/  
Pediatric  
Box of 25  
CAT.NO. 106220



IRMA Airway Adapter  
Infant  
Box of 10  
CAT.NO. 106260



IRMA Holder Velcro  
CAT.NO. 100250

