capnography

VM-2500 CO_2/SpO_2 Monitor

High performance capnography with either mainstream or sidestream measurement

- **Robust and ergonomic design**
- **Fast warm-up time**
- **Rapid response time**
- **Extremely accurate and reliable measurement**
- **CO_2 and SpO_2 combined**
- **Displays $EtCO_2$, $FiCO_2$, SpO_2, respiration and pulse rate, capnogram and plethysmogram**
- **Maintenance and calibration-free technololgy**
- **Clear and bright, colour OLED display offers superior clarity**
- **For intubated and non-intubated patients**

VM-2500-M
Mainstream Unit

VM-2500-S
Sidestream Unit

The ultra-compact, ergonomic design of the VM-2500-M and VM-2500-S combine outstanding performance and reliability in mainstream or sidestream CO_2 and SpO_2 monitoring.

The VM-2500-M and VM-2500-S combine innovative technologies and design with the latest materials, to create extremely accurate and reliable measurement of intubated or non-intubated patients.

The mainstream unit utilises the advanced IRMA™ CO_2 Analyser; to precisely determine gas concentration in the mixture.

The sidestream unit utilises the advanced ISA™ CO_2 Analyser; with Nomo technology to eliminate problems caused by water secretions affecting the reading.

These units incorporate the latest Organic LED display technology, offering unrivalled clarity, in even the most difficult of lighting conditions.

The VM-2500-M and VM-2500-S can be used in a variety of applications, from use in emergency rescue situations, during surgery, intensive care, resuscitation and patient transportation.

VIAMED

The ultra-compact, ergonomic design of the VM-2500 combines outstanding performance and reliability in for either mainstream or sidestream CO_2 and SpO_2 monitoring.

Mainstream Standard Package

- Mainstream Unit
- IRMA™ CO_2 analyser
- IRMA™ Airway adapter (Adult and Paediatric)
- Reusable SpO_2 sensor*
- USB data cable
- Power supply (UK and EU Plug)
- 4 x AA batteries
- 1 x Li-Poly battery (CT-2500)
- Silicone protective cover
- PC software
- Instruction manual on CD

*Please select from the following sensor styles: Silicone Soft Sensor (Adult or Paediatric), Finger Sensor, Silicone Wrap Sensor or Ear Sensor, and indicate at the time of ordering.

Key Features of the VM-2500-M

- Mainstream CO_2 measurement with the **IRMA™ CO_2 Analyser**
- Fast warm-up time of < 10 seconds to full specification
- 'PLUG-IN and MEASURE...™' technology - **no integration procedures** or associated expenses required
- **No occlusion by water or mucus**
- **IRMA airway adapter with XTP™ non-condensing** light transmission window
- Small, lightweight and shock-resistant; the **IRMA™ CO_2 Analyser** weighs less than 30g
- Direct measurement **without time delay**
- For intubated and non-intubated patients
- Maintenance and calibration-free technology
- Wide range of accessories and SpO_2 sensors available

VM-2500-M Accessories Mainstream Measurement

The **IRMA™ CO_2 Analyser** sets new standards in CO_2 mainstream monitoring and provides reliable, safe and easy CO_2 monitoring by direct measurement, without time delay.

- Small and lightweight
- 'PLUG-IN and MEASURE...™' technology
- Shock resistant

The **IRMA™ Airway Adapters** are supplied in two versions; Adult/Paediatric and Infant.

- Non-condensing light transmission XTP™ window
- Single patient use

Applications

The VM-2500 with Silicone Finger Sensor is suitable for the following applications:

- Patient transport within and between hospitals
- Rescue services and emergency medicine
- Resuscitation
- General and Paediatric ICU
- Ventilator management and weaning

Nomo Adapter

Sampling Line

Airway Adapter (15 mm)

Sidestream Standard Package

- Sidestream Unit
- Nomo adapter
- Sampling Line
- Sidestream airway adapter (Adult/Paediatric)
- Reusable SpO_2 sensor*
- USB data cable
- Power supply (UK and EU Plug)
- 4 x AA batteries
- 1 x Li-Poly battery (CT-2500)
- Silicone protective cover
- PC software
- Instruction manual on CD

* Please select from the following sensor styles:
Silicone Soft Sensor (Adult or Paediatric), Finger Sensor, Silicone Wrap Sensor or Ear Sensor, and indicate at the time of ordering.

Key Features of the VM-2500-S

- Sidestream CO_2 measurement with the **ISA™ CO_2 Analyser** and Nomo technology
- Fast warm-up time of < 10 seconds to full specification
- The **Nomo Adapter** uses Nomo technology which **removes water** and **vapour** from the sampled gas
- The Nomo Adapter includes a hydrophobic bacterial filter to **protect against water intrusion and cross contamination**
- Specially designed for **low flow applications**; 50 ml/min sampling flow rate
- For intubated and non-intubated patients
- Maintenance and calibration-free technology
- Wide range of accessories and SpO_2 sensors available

VM-2500-S Accessories Sidestream Measurement

Together with the **Nomo technology**, that removes water from the sampled gas, the **ISA™ CO_2 Analyser** delivers the highest performance in an ultra compact format.

The **Nomo Adapter** incorporates a unique water separation made of a special polymer, with an integrated hydrophobic bacterial filter. The Nomo Adapter passes water vapour and condensed water through its membrane like surface and evaporates into the surrounding air, while leaving the carbon dioxide concentration unaffected.

The Nomo technology allows for up to two weeks of continuous monitoring with high moisture containing breathing gases - **a first for capnography.**

The Nomo Adapter contains a hydrophobic bacterial filter (> 99.9980%) to protect the ISA™ CO_2 Analyser from water intrusion and cross contamination.
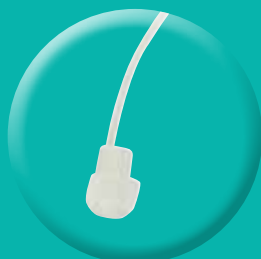
Additional Sidestream Accessories

Sidestream airway adapter available in Adult/ Paediatric

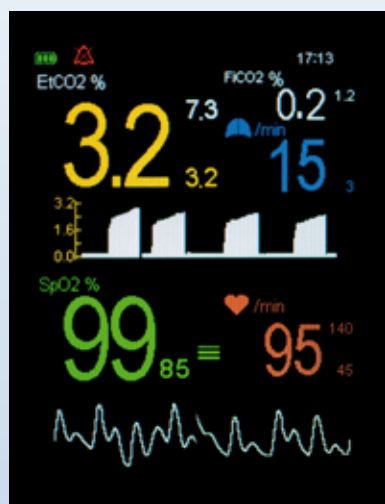**Airway adapter and sampling line**

Nasal sampling line

Nasal sampling cannula available in Adult and Paediatric

15mm airway adapters range available, I.D 2.0mm to 10.0mm

Screen Display Options
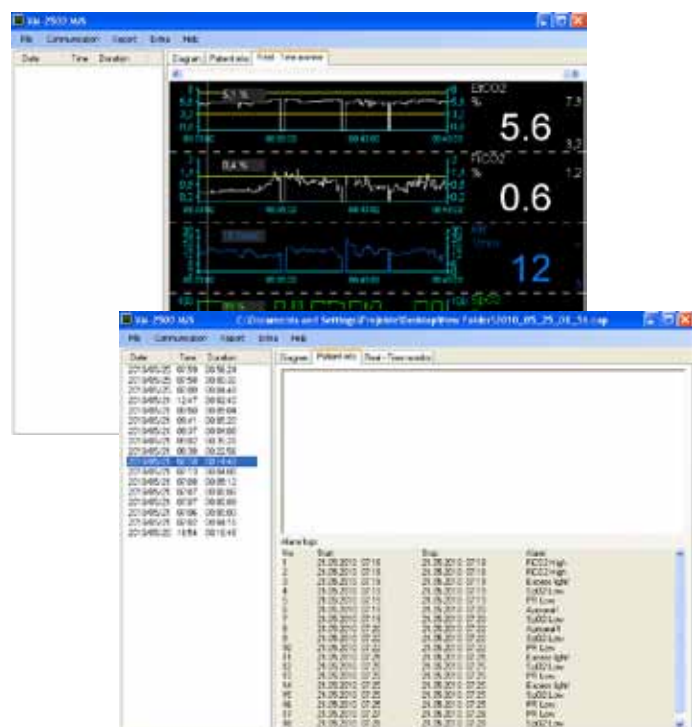

Standard Display Format

Large Digit Display

Trending Digit Display Format

Powerful Capnograph PC Software

With the convenient Capnograph PC Software all measured values, selected alarm limits and alarm messages can be transferred to the computer via the USB interface. The data can be viewed on the computer and patient information added. The PC software enables basic statistical evaluation of the stored data.

The software can also be used to display and store the measurement values and alarm messages on the computer in parallel to ongoing measurements. This function is activated by setting the real-time mode of the Capnograph. When this mode is activated, the device transfers the actual measurement values for etCO$_2$, FiCO$_2$, SpO$_2$, Respiration and Pulse Rate measurement values every second to the computer via the USB interface.

Available Sensors

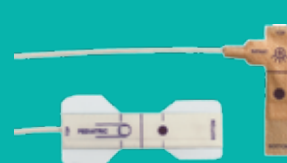Ⓐ **Also available in Autoclavable version**

Ⓐ **Adult Soft Sensor**

Ⓐ **Paediatric Soft Sensor**

Finger Sensor

Ⓐ **Silicone Wrap Sensor**

Disposable Sensors

Ear Sensor

NB. When ordering the VM-2500 please select from the following reusable sensor styles:
Soft Sensor (Adult or Paediatric), Finger Sensor, Silicone Wrap Sensor, Ear Sensor and indicate at the time of ordering. Autoclavable sensors are available.

VM-2500 CO$_2$/SpO$_2$ Monitor

Measuring Range

EtCO$_2$ and FiCO$_2$	0 - 15 Vol%, or expressed as kPa or mmHg
SpO$_2$	0 - 100%
Respiration Rate	0 - 150 breaths/min
Pulse Rate	20 - 300 bpm

Accuracy

EtCO$_2$ and FiCO$_2$	± (0.2 vol% + 2% of reading)
	± (0.3% vol % + 4% of reading) inc. interfering gases
SpO$_2$	± 2% (70 - 100%)
Respiration Rate	± 1 digit at 60 breaths/min
Pulse Rate	± 1 digit (≤ 100/min) or ± 1% (> 100/min)

Display

Features	Colour OLED, 262,000 colours, 240 x 320 pixels
Data displayed	End-tidal CO$_2$ and inspired CO$_2$ in volume %, kPa or mmHg, oxygen saturation, respiration rate, pulse rate, capnogram, plethysmogram, bar graph, short term trends
Indicators	Signal strength and signal quality, pulse amplitude, battery status, alarm silenced, volume silenced, neonatal mode, time, storage capacity full

Trend Information

Short Term Trend	15 min/1 hour/6 hours (stored and displayed)
Long Term Trend	Approximately 400 hours (stored)

Environmental Conditions

Operating temperature	0 - 50°C, 15 - 95% R.H. (non-condensing), 60 - 120 kPa (excl. Li-Poly battery)
Storage temperature	-30 - 70°C, 10 - 95% R.H. (non-condensing), 60 - 120 kPa (excl. Li-Poly battery)

Regulatory Approvals

Standards	CE Class llb in accordance with MDD 93/42/EEC
	BS EN 60601-1:2006, BS EN 60601-1-1:2001, BS EN 60601-1-2:2007, BS EN 60601-1-8:2004, EN 60529, EN ISO 21647:2004, BS EN ISO 9919:2005
Safety	Class II, Type BF

Assembly

Construction	IPX1
Dimensions	150 mm (L) x 75 mm (W) x 35 mm (H)
Weight	Approximately 400g (complete device with batteries)
Power Supply	Power supply 90 - 260 VAC/6 VDC, 50 - 60 Hz, 2.5 Ah Li-Poly battery or 4 x AA alkaline batteries
Battery Life	AA batteries: with full functionality VM-2500-M > 6 hours, VM-2500-S > 3 hours
	Li-Poly battery: with full functionality VM-2500-M > 7 hours, VM-2500-S > 5 hours
PC interface	USB 2.0

Part Numbers

VM-2500-M Mainstream Capnograph*	4410500
EAN-13 (GTIN-13) Barcode: 5051826002711	
VM-2500-S Sidestream Capnograph*	4410520
EAN-13 (GTIN-13) Barcode: 5051826002728	

* Language Package: Central European, including:
English, Dutch, French, German, Italian, Spanish, Swedish and Russian
(additional language versions available on request)

VM-2500-M - Asia Languages (English, Chinese and Japanese)	4410501
VM-2500-S - Asia Languages (English, Chinese and Japanese)	4410521

Additional Accessories Available

Pulse Oximetry Extension Cable, 1.2m cable length (XT6500)	0014895
Pulse Oximetry Extension Cable, 2.4m cable length (XT6501)	0014896
Silicone Protective Cover	0022160
Carrying Case	4420620
Carrying Case with clear front	4420621
Protective Rubber Boot	4420615
Universal Mounting Plate Rev. 1	4420600
Universal Mounting Plate Rev. 2	4420601
'V' mount wall plate	0121180
'V' mount pole clamp (Small: 14 - 25mm span)	0121181
'V' mount pole clamp (Large: 16 - 40mm span)	0121182
'V' mount rail clamp	0121184
'V' mount pole clamp, multi-position	0121197
Universal Mounting Clamp, with vertical and horizontal adjustments	0121200

NB. When ordering either the VM-2500-M or VM-2500-S please select from the following reusable sensor styles:
Soft Sensor (Adult or Paediatric), Finger Sensor, Silicone Wrap Sensor, Ear Sensor and indicate at the time of ordering.
Autoclavable sensors are available.

Specification Subject to Change

CE

Mounting Options

For use with VM-2500 range

4420615

Protective Rubber Boot
includes carrying strap

4420600 Rev. 1
4420601 Rev. 2

Universal Mounting Plate

0121200

Universal Mounting Clamp

0121180

'V' Wall Mount

0121197

'V' Mount Pole Clamp Multi-Position

0121184

'V' Mount Rail Clamp

0121181

'V' Mount Pole Clamp
Small: 14 - 25mm span

0121182

'V' Mount Pole Clamp
Large: 16 - 40mm span

Carrying Cases for VM-2500

4420620

- Fluid repellent
- Non rot
- U.V. stable
- Washable at 60°C

- Self healing and waterproof zips
- micrAgard silver-lining inners
- Abrasion and tear resistance
- High visibility and reflective properties

Carrying Case

4420621

Carrying Case
with clear front panel

4420628

Carrying Case
Accident & Emergency Text

Part Number: 0092190
Date: 09/13

BSI
UKAS QUALITY MANAGEMENT 003
FS 28344   MD 78787

BS EN ISO 9001:2008
ISO 13485:2003