

# capnography



## VM-2500 CO<sub>2</sub>/SpO<sub>2</sub> 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<sub>2</sub> and SpO<sub>2</sub> combined
- Displays EtCO<sub>2</sub>, FiCO<sub>2</sub>, SpO<sub>2</sub>, respiration and pulse rate, capnogram and plethysmogram
- Maintenance and calibration-free technology
- Clear and bright, colour OLED display offers superior clarity
- For intubated and non-intubated patients



**VM-2500-M**  
Mainstream 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<sub>2</sub> and SpO<sub>2</sub> 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<sub>2</sub> Analyser; to precisely determine gas concentration in the mixture.

The sidestream unit utilises the advanced ISAT™ CO<sub>2</sub> 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.



**VM-2500-S**  
Sidestream Unit



**The ultra-compact, ergonomic design of the VM-2500 combines outstanding performance and reliability in for either mainstream or sidestream CO<sub>2</sub> and SpO<sub>2</sub> monitoring.**

## Mainstream Standard Package

- Mainstream Unit
- IRMA™ CO<sub>2</sub> analyser
- IRMA™ Airway adapter (Adult and Paediatric)
- Reusable SpO<sub>2</sub> 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<sub>2</sub> measurement with the **IRMA™ CO<sub>2</sub> 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<sub>2</sub> 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<sub>2</sub> sensors available



## VM-2500-M Accessories Mainstream Measurement

The **IRMA™ CO<sub>2</sub> Analyser** sets new standards in CO<sub>2</sub> mainstream monitoring and provides reliable, safe and easy CO<sub>2</sub> 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<sub>2</sub> 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<sub>2</sub> measurement with the **ISA™ CO<sub>2</sub> 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<sub>2</sub> sensors available

## VM-2500-S Accessories Sidestream Measurement

Together with the **Nomo technology**, that removes water from the sampled gas, the **ISA™ CO<sub>2</sub> 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<sub>2</sub> Analyser** from water intrusion and cross contamination.

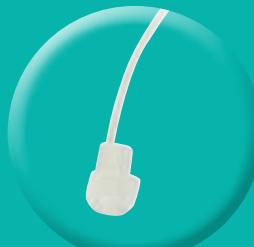
## Additional Sidestream Accessories



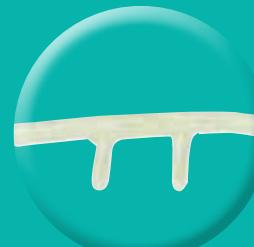
**Sidestream Airway Adapter**  
Available in Adult/  
Paediatric



**Airway adapter and Sampling Line**



**Nasal sampling line**



**Nasal sampling cannula**  
available in Adult and  
Paediatric



**15 mm Airway Adapters range available,**  
**I.D 2.0 mm to 10.0mm**

## Screen Display Options



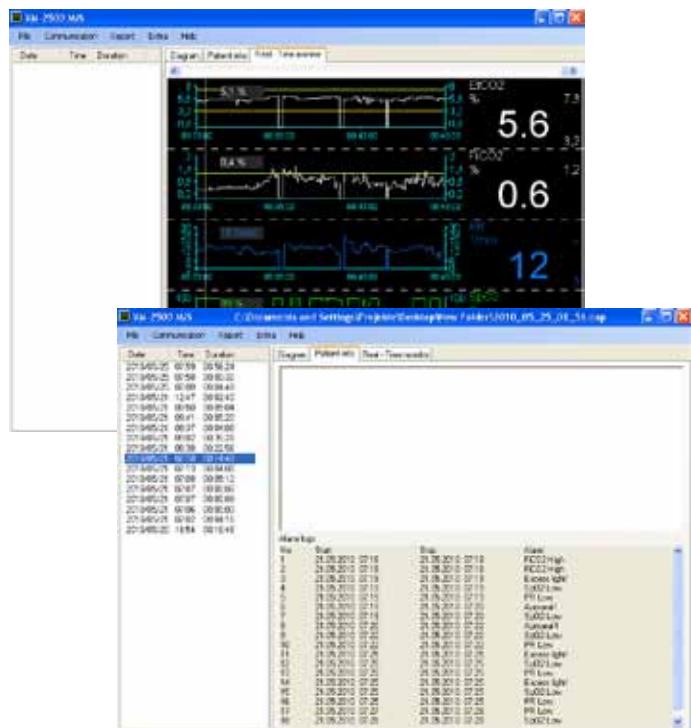
Standard Display Format



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  $\text{etCO}_2$ ,  $\text{FiCO}_2$ ,  $\text{SpO}_2$ , Respiration and Pulse Rate measurement values every second to the computer via the USB interface.

## Available Sensors

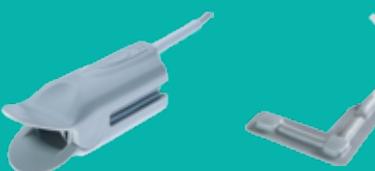
Also available in Autoclavable version



A Adult Soft Sensor



A Paediatric Soft Sensor



Finger Sensor



A 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<sub>2</sub>/SpO<sub>2</sub> Monitor

<b>Measuring Range</b>	
EtCO <sub>2</sub> and FiCO <sub>2</sub>	0 - 15 Vol%, or expressed as kPa or mmHg
SpO <sub>2</sub>	0 - 100%
Respiration Rate	0 - 150 breaths/min
Pulse Rate	20 - 300 bpm
<b>Accuracy</b>	
EtCO <sub>2</sub> and FiCO <sub>2</sub>	± (0.2 vol% + 2% of reading)
SpO <sub>2</sub>	± (0.3% vol % + 4% of reading) inc. interfering gases
Respiration Rate	± 2% (70 - 100%)
Pulse Rate	± 1 digit at 60 breaths/min
	± 1 digit (≤ 100/min) or ± 1% (> 100/min)
<b>Display</b>	
Features	Colour OLED, 262,000 colours, 240 x 320 pixels
Data displayed	End-tidal CO <sub>2</sub> and inspired CO <sub>2</sub> 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
<b>Trend Information</b>	
Short Term Trend	15 min/1 hour/6 hours (stored and displayed)
Long Term Trend	Approximately 400 hours (stored)
<b>Environmental Conditions</b>	
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)
<b>Regulatory Approvals</b>	
Standards	CE Class IIb 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
<b>Assembly</b>	
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
<b>Part Numbers</b>	
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
<b>Additional Accessories Available</b>	
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

# Mounting Options

For use with VM-2500 range



## Carrying Cases for VM-2500



- 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



# VIAMED

Viamed Limited · 15 Station Road · Cross Hills  
Keighley · West Yorkshire · BD20 7DT · United Kingdom  
Tel: +44 (0)1535 634 542    Fax: +44 (0)1535 635 582  
Email: [info@viamed.co.uk](mailto:info@viamed.co.uk) Website: [www.viamed.co.uk](http://www.viamed.co.uk)



BS EN ISO 9001:2008  
ISO 13485:2003



Part Number: 0092190  
Date: 09/13