Microstream CO₂ is an innovative, advanced technology for sidestream capnography. The Philips Microstream CO₂ Extension is designed to work with the Philips Multi-Measurement Server and provides a real-time waveform and numeric values for CO₂ on the Philips patient monitor display. Microstream CO₂ technology developed by Oridion Medical Ltd. features an ultra-low-flow capnography method and a wide variety of smartly designed FilterLine® sampling circuits for use on all kinds of patients in different application areas.

An advance in capnography
Microstream CO₂ offers significant advantages over traditional capnography:

- **Fast response time.** A sample cell volume of just 15 microliters and the small diameter of the sample lines yield a fast response time.
- **Very low sample flow rate.** The sample flow rate of 50 ml/min supports the entire patient population, does not compete for neonatal tidal volume, and does not require fresh gas flow compensation for sample flow.
- **Crisp waveform.** The 1 mm microbore tubing and the input filter maintain a laminar sample flow resulting in a crisp, undispersed CO₂ waveform.
- **Exceptional moisture handling.** An integrated water separation filter in each FilterLine connector prevents fluids from entering the measurement system. The patented multi-port airway adapter design prevents fluid from flowing into the sample port and occluding the sample line.
- **No cross-sensitivity.** Molecular Correlation Spectroscopy (MCS)™ provides a CO₂-specific measurement value with no cross-sensitivity to other gases, such as anesthetic agents.
- **Short warm-up time.** Just 45 seconds from ON until waveform and values appear.
- **No routine calibration required.** A five-minute calibration is performed once per year.

Clinical Measurements

Microstream® CO₂ Extension for capnography monitoring

Microstream CO₂ uses a sample flow rate of 50 milliliters, making it a viable solution for capnography on all patients, including neonates.
Extended applications for capnography

Microstream CO₂ expands capnography in a variety of clinical situations:

- **Procedural sedation.** Continuous CO₂ monitoring allows clinicians to assess respiratory changes of spontaneously breathing, non-intubated patients that are often the first signs of hyperventilation, apnea, or airway obstruction.
- **Critical care.** Allows the assessment of pulmonary perfusion and ventilatory status during mechanical ventilation, weaning, and post-extubation.
- **Anesthesia care.** Provides immediate feedback on proper intubation, helps manage ventilation of patients on respiratory-depressant drugs, and warns of ventilator malfunctions.
- **EMS/ED.** Valuable in verifying ET tube placement, alerting to extubations, evaluating CPR efforts, and assessing the ventilatory status of patients with respiratory diseases.
- **Transport.** The Microstream CO₂ Extension can travel with the patient to continuously assess the patient’s respiratory status.

Wide variety of FilterLine sampling circuits

Philips offers a variety of single piece, plug-and-play sampling circuits tailored to different clinical requirements and in different sizes for use with infant to adult patients. Switching from intubated to non-intubated monitoring is as easy as plugging in the appropriate accessory without recalibration.

References

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