



Alaris® EtCO₂ module

Continuous EtCO₂ monitoring and infusion therapy on a single platform

Setting the standard of care in safety

Increasingly, sedation procedures are being performed outside of the operating room and sedatives are titrated by a variety of healthcare providers. Patient safety is an important standard when performing these procedures and practices. EtCO₂ nasal monitoring may facilitate the detection of respiratory related complications, leading to earlier intervention.

PCA pause protocol provides the clinician the ability to automatically pause the PCA infusion when hospital-established respiratory rate alarm limits are exceeded. This helps provide added safety for critical patient risk factors unprotected by programming safety, such as undiagnosed clinical conditions and may help improve clinician confidence that opioid dosing could be safely increased for more effective pain management.⁴

*"The Alaris® System has heightened our awareness and **it's certainly improved our response time.** We monitor our patients on PCA, especially the sleep apnea patients."*

Sue Heatherington, RN
Patient Care Manager
Main Line Health Hospital



The Alaris® EtCO₂ module incorporating Oridion® patented Microstream® capnography technology

Bringing continuous respiratory monitoring to all patient areas

Research

Research conducted by Anderson, et al, concluded that when propofol is administered in the emergency department to facilitate pediatric orthopedic reduction, continuous capnography may detect most airway and respiratory events leading to interventions before clinical examination.¹

Additional support

- EtCO₂ monitoring and automatic pausing of the PCA helped patients realize positive medical results in situations that otherwise might have resulted in patient harm. In all cases, capnography first alerted clinicians to respiratory depression events.⁴
- Respiratory depression was detected at a significantly higher rate in the capnography group.²
- A majority of patients with acute respiratory events had EtCO₂ abnormalities that occurred before oxygen desaturation or observed hypoventilation.³

Performance

- Patented Oridion® EtCO₂ sampling technology is effective with both intubated and non-intubated patients as well as oral or nasal breathing.
- Customized profiles adds flexibility across all patient care areas.
- Oridion® CapnoLine® disposables minimize moisture and humidity entering the sampling line, reducing sampling line occlusion.
- Oridion® Microstream® technology eliminates need for moving parts, external sensors or routine calibration.
- Displays trended real-time patient respiratory rate, EtCO₂ and no breath alarm status.
- Alaris® System, together with Alaris® PCA and EtCO₂ modules, provides real-time trending data (drug dose combined with EtCO₂ values), which may assist the clinician in evaluating patient status.



Specifications

Sampling rate	50mL/minute, nominal
EtCO ₂ measurement	0-99mmHg [at sea level]
Respiration rate	0-150 breaths/minute
Fractional inspired CO ₂ [FiCO ₂]	0-99mmHg [at sea level]
No breath limit	0-60 seconds [default = 30 sec]

Accuracy

- Small sampling size (50mL/min) measures accurate EtCO₂, respiratory rate, FiCO₂, no breath values for all patient populations, from adult to neonatal.
- The Microstream® technology laser-based molecular correlation spectroscopy (MCS™) creates an infrared emission matching the absorption spectrum of CO₂ eliminating compensation or cross sensitivity when using O₂, N₂O, He, NO or anesthetic gases.

¹ Anderson R, et.al. Capnography and depth of sedation during propofol sedation in children. *Annals of Emergency Medicine* 49(1) Jan. 2007 9-13.

² Hutchison, R. Capnography and respiratory depression. *AJN*, 108(2) Feb. 2008 35-39.

³ Burton, J etal. Does end-tidal carbon dioxide monitoring detect respiratory events prior to current sedation monitoring practices?. *Society for Academic Emergency Medicine* 13(5) May 2006 500-4.

⁴ McCarter T, Shaltz, Searfolk, Thompson, L. Capnographic monitoring improves safety of PCA. *American Health and Drug Benefits* (pending publication).

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