

Capnograph

EMCO CapnoWave 3400

Plug & Play Technology from Respirationics, USA



EMCO CapnoWave 3400 is an economical, standalone, lightweight, bedside and portable Capnograph Monitor which measures End Tidal CO₂ (etCO₂), Final Inspired CO₂ (iCO₂) and Respiration Rate. It is based on the latest state-of-art Plug & Play technology from Respirationics, USA.



Emco Meditek, an ISO 9001:2000 company, was formed in the year 1989 with the main objective of manufacturing and marketing of Electronic Medical Equipment. The equipment are manufactured indigenously with the assistance of technology obtained from leading Medical Equipment manufacturing companies around the world especially USA, UK and Germany.

Flexibility to choose Mainstream or Sidestream Capnography

MAINSTREAM SENSOR (CAPNOSTAT5)



- Small, lightweight mainstream CO₂ sensor provides accurate and reliable monitoring for all intubated patients from neonates to adults.
- Built for maximum durability, the sensor is tough enough to withstand everyday life in the ICU or EMS environments.
- The easy-to-use on-airway adapters are designed to optimize system performance by reducing the effects of moisture resulting in hassle-free uninterrupted monitoring
- Useful in Long-term Ventilator Management, verification of proper ET tube placement, Confirmation of ET tube stability during transport

SIDESTREAM SENSOR (LOFLO)



- LoFlo is the newest 50 ml sampling rate CO₂ sensor that provides consistent and reliable CO₂ monitoring of adult, pediatric and neonatal patients.
- LoFlo's broad range of sampling accessories incorporate an advanced filtering system and external sample cell that provides up to 120 hours of protection against occlusions caused by moisture or secretions.
- Useful in monitoring the effects of pain-controlled analgesia, monitoring respiratory efforts during procedural sedation, safety monitor post-extubation, screening tool in the ED for respiratory complications such as asthma

Upgradeable to Pulse Oximeter



EMCO
Meditek Pvt. Ltd.

TECHNICAL SPECIFICATIONS

Sidestream (LoFlo) CO2 Sensor

Sampling Method	Built-in Sidestream Sensor
Principle of Operation	Non-dispersive Infrared (NDIR), Single Beam, Dual wavelength, no moving parts
Initialisation Time	Capnogram displayed in less than 20 seconds, at an ambient temperature of 25°C, full specifications within 2 minutes
Range (etCO2)	0 to 150 mmHg (0 to 19.7 %Vol, 0 to 20 kPa)(at 760mmHg)
Accuracy (etCO2)	±2 mmHg 0 to 40mmHg ±5% of reading 41 to 70 mmHg ±8% of reading 71 to 100 mmHg ±10% of reading 101 to 150 mmHg ±12% of reading Above 80bpm Respiration
CO2 Stability	Short Term Drift: Drift over four hours shall not exceed 0.8 mmHg Long Term Drift: Accuracy specification will be maintained over a 120-hour period
CO2 Noise	RMS noise of the sensor shall be less than or equal to 0.25 mm Hg at 5% CO2
Respiration Rate Range	2 to 150 breaths per minute (bpm)
Respiration Rate Accuracy	±1 breath
Resolution	1 bpm
Compensations	Host supplied - Barometric Pressure 400 mm Hg to 800 mm Hg Operator selectable - O2 / N2O compensation
Calibration	No routine user calibration required
Sample Cell/Filter	Proprietary single patient use sample cell and inline filter are integrated with the sample line which eliminates contamination of the internal system

Displays, Indicators & Keys

Red LED Display 0.4"	etCO ₂
Amber LED Display 0.4"	Respiration Rate
LCD Display	240x64 pixels, STN, Transmissive, Negative, White LED Backlight, Viewing Area 132.6x39.0mm Display of Capnograph, Alarm Limits
Red LED 3mm	Battery
Green LED 3mm	Charging
Keys	On/Off, Menu, Up, Down, Cancel, Waveform/Trend, Freeze, Silence

Capnogram

Wave Speed	3.12, 6.25, 12.5 mm/sec
Display type	Line or Fill
Wave Freeze	Scrolling available for previous 5 Screens

Averaging

Breath-to-Breath, 4 Breaths, 8 Breaths

Apnea

Delay of 10, 20 & 30 sec.

Alarms

Limit Violation, Apnea, Various System Failures

Silence

2 min Silence & Permanent Silence

Alarm Ranges

	High	Low	
etCO ₂ (mmHg)	1 to 150	0 to 149	(in 1mmHg steps)
iCO ₂ (mmHg)	1 to 50	0 to 49, Off	(in 1mmHg steps)
Respiration Rate (bpm)	5 to 150	0 to 145	(in 5 bpm steps)

Mainstream (Capnostat5) CO2 Sensor

Transducer Type	Mainstream CO2 Sensor
Principle of Operation	Non-dispersive infrared (NDIR) single beam optics, dual wavelength, no moving parts
Initialization Time	Capnogram, displayed in less than 15 seconds at an ambient temperature of 25°C, full specifications within 2 minutes
CO2 Measurement Range	0 to 150 mm Hg, 0 to 19.7%, 0 to 20 kPa (at 760 mm Hg)
Barometric Pressure	supplied by host
Rise Time	Less than 60 ms - Adult Reusable or Single-Patient-Use Airway Adapter Less than 60 ms - Infant Reusable or Single-Patient-Use Airway Adapter
CO2 Accuracy	±2 mmHg 0 to 40mmHg ±5% of reading 41 to 70 mmHg ±8% of reading 71 to 100 mmHg ±10% of reading 101 to 150 mmHg
CO2 Stability	Short Term Drift: Drift over four hours shall not exceed 0.8 mm Hg max. Long Term Drift: Accuracy specification will be maintained over a 120-hour period
CO2 Noise	RMS noise of the sensor shall be less than or equal to 0.25 mm Hg at 7.5% CO2
Respiration Rate Range	0 to 150 Breaths Per Minute (BPM)
Respiration Rate Accuracy	±1 breath
Compensations	Host supplied - Barometric Pressure 400 mm Hg to 850 mm Hg Operator selectable - O2, N2O, HE and Agent compensation.
Calibration	No routine user calibration required. An airway adapter zero is required when changing to a different style of airway adapter.

Memory Trends

(available on Display & Printing)

Past Trends of etCO ₂ , iCO ₂ & Respiration Rate for 72 hours (3 days)
Trends available on Display - 15min, 1hr, 2hrs, 4hrs & 8hrs
Past Trends of 1000 Alarm Violations

Printing

(available any Parallel Printer)

Real Time (etCO ₂ , iCO ₂ & Respiration Rate) at 1 min. intervals
Past Trends of 72 hours (3 days)

Power Requirements

Battery	Rechargeable Built-in Sealed Lead Acid Battery
Charging Time	8 hours
Battery Backup	3 hours
AC Mains	240 ±10% Vac, 50 Hz, 10VA Max.

Dimensions

Width	Height	Depth	Weight
10.20"	3.85"	6.70"	2.0 kgs
(260mm)	(98mm)	(170mm)	(4.4 lbs)

Environmental Specifications

Temperature	0 to 45 deg. C (Operating), -40 to 70 deg.C (Storage)
Relative Humidity	10 to 90% (Operating), <90 % (Storage) Non-condensing
Barometric Pressure	400-800 mmHg (Operating), 375-795 mmHg (Storage)

Upgradeable to Pulse Oximeter



At the heart of healthcare

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