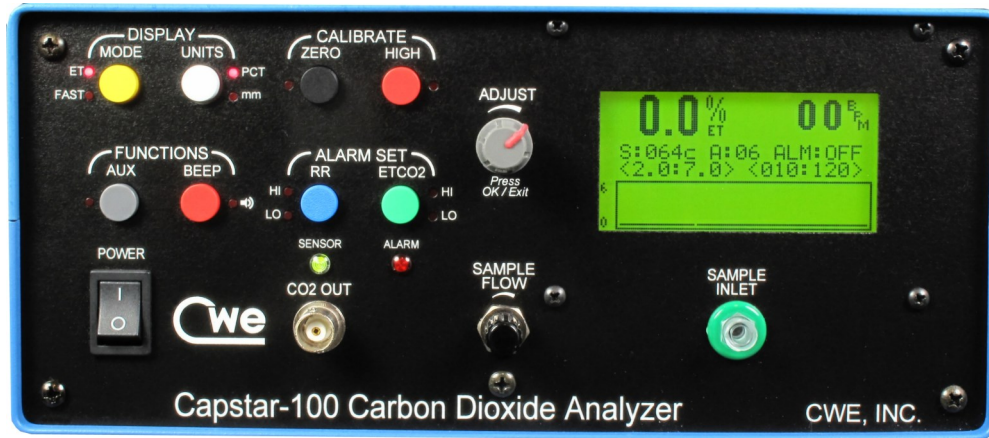


Capstar-100 CO₂ Analyzer

Advanced respiratory monitor



STANDARD FEATURES AND APPLICATIONS

- End-tidal or continuous CO₂ monitoring
- Measures respiration rate (RR)
- Small sample flow requirements.
- Suitable for rats and larger animals
- Adjustable ET/CO₂ and RR alarms
- Analog output signal and RS232 serial data output
- Use with ventilated or unassisted breathing animals
- Control-of-breathing studies and basic monitoring

The CAPSTAR-100 is a high-performance respiratory gas analyzer for the routine monitoring of expired carbon dioxide and respiratory rate. The CO₂ sensor is a temperature-controlled, infrared optical bench, which features fast response, excellent accuracy, and long-term stability. End-tidal CO₂ (ET/CO₂) and respiratory rate (RR) is computed on a breath-by-breath basis from the CO₂ excursions. The unit is completely self-contained: the sensor, control electronics, displays, and sampling pump are housed in a convenient bench-top enclosure, or rack-mountable using optional rack-mount brackets.

An important feature of the CAPSTAR-100 is its small sample flow requirement. This makes it suitable for use with rodents and other small animals, as well as larger experimental animals.

The LCD graphic display shows either the instantaneous CO₂ value, or the peak end-tidal value. An analog output provides a linear voltage corresponding to the current gas concentration. This output is directly compatible with most data acquisition systems or recorders. A standard RS232 serial output is also provided, which sends ET/CO₂ and RR information in a variety of user-selectable formats.

A simple two-point calibration makes it easy to maintain and verify the accuracy of measurements. A one-touch button zeros the instrument, and a single calibration gas (typically 5 - 10% CO₂) is used for calibration.

The CAPSTAR-100 has built-in audible and visual alarms for detecting out-of-range end-tidal CO₂ or respiratory rate conditions. These alarms have adjustable high and low limits, which are remembered by the instrument and reinstated when it is next used.

A complete Accessory Kit is included with a range of sample tubing (including Nafion sample drying tubing), fittings, and in-line miniature filters. This allows for a variety of convenient connections to different respiratory tubing setups.

Special features and advantages

The CAPSTAR-100 is the ideal instrument for monitoring the respiratory health of your experimental animal. Monitoring ET/CO₂ allows the ventilator to be set optimally to produce a normal physiological state.

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Capstar-100 CO₂ Analyzer

SPECIFICATIONS

Carbon dioxide sensor	single beam infrared
Sample inlet connector.....	Luer female
Measurement range	0-10% CO ₂
Linearity	0.1% CO ₂
Repeatability	0.1% CO ₂
Response time (T ₁₀ - T ₉₀)	110mS at 60 ml/min sampling
Response time (T ₁₀ - T ₉₀)	100mS at 100 ml/min sampling
Zero stability.....	0.1% (8 hours), 0.2% (24 hours)
Interference effects: 50% N ₂ O	0.1% at 0% CO ₂ , 0.6% at 5% CO ₂ (uncomp.)
Interference effects: vaporized anesthetic agents.....	negligible
Operating temperature range	5-40° C
Optical bench temperature	48° C, controlled
Warm-up time.....	6 min to 0.2%, 10 min to 0.1%
Sample flow adjustment range	10 - 200 ml/min
Respiratory rate measurement range	5 – 120 breaths/min
Alarm adjustment range: ETCO ₂	1.0 – 9.9%
Alarm adjustment range: Respiratory Rate	5 – 120 breaths/min
Analog signal output	BNC jacks
CO ₂ output scaling	0.4V / %CO ₂
Serial data output format	9600 baud, 8 data, no parity, 1 stop bit
Power adapter (supplied)	5VDC@4A
Mains requirements for power adapter	120VAC/220VAC universal
Dimensions	9W x 4H x 9D in. (23 x 10 x 23cm)
Weight.....	4 lbs. (1.8kg)

ORDERING INFORMATION

Part No.:	Description:
VI-11-10000	CAPSTAR-100 CO ₂ Analyzer (complete unit)
VI-11-01101	Accessory kit: sample lines, 2 Nafion [®] lines, disk filters & fittings
VI-11-01102	Sample line, 4 feet, with male Luer-loc connectors
VI-11-01103	Sample line, 2 feet Nafion (evaporates condensed moisture)
VI-11-01111	Sample line, 6 inches, Nafion (evaporates condensed moisture)
VI-11-01108	In-line miniature hydrophobic filter, 13mm dia, Luer fittings, pk of 5
VI-20-01001	USB-Serial Adapter

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