

# CAPSTAR-100 CO<sub>2</sub> Analyzer

Fast response end-tidal Carbon Dioxide monitor for small animals



End-tidal CO<sub>2</sub> has long been known to be a reliable measure of respiratory status. The CAPSTAR-100 Carbon Dioxide Analyzer provides continuous measurement of expired CO<sub>2</sub> over the range 0-10 percent. Its rapid response time, small sample flow requirements, and long-term stability make it ideal for respiratory gas measurement of rodents and larger animals.

The heart of the instrument is a miniature infrared analyzer with exceptional stability, low maintenance, and a linear output voltage for recording. The heated measurement cell prevents water condensation. The SENSORPOD, which contains the infrared measurement cell, attaches to the front panel by a 1.5m cable. This cell can be removed for cleaning, inspection, or replacement in minutes. The digital display shows CO<sub>2</sub> concentration in percent or mmHg, and allows breath-by-breath peak end-tidal reading or continuous rapid

response. Calibration is easily performed with a single calibrated gas and room air.

The reliability and ease of operation of the CAPSTAR-100 make it the perfect instrument for routine respiratory CO<sub>2</sub> monitoring. It is the natural companion to our SAR-830 series Small Animal Ventilators for monitoring respiratory status. It can also be used to monitor spontaneously breathing animals. Gas sampling rates of less than 30ml/min can be used, making it possible to monitor animals as small as rats. The fast response time of the CAPSTAR-100 allows end-tidal response plateaus with respiratory rates of up to 100 breaths/min.

A range of accessories is available to ensure easy setup and convenient operation. An accessory pack containing sample tubing, moisture traps, and Nafion® moisture-absorbing sample tubes is included with the instrument.

### **Standard Features:**

- End-tidal peak or continuous readings
- Low sample flow requirements
- Accurate and stable monitoring
- Linear output signal for recording

### **Applications:**

- Respiratory monitoring
- Use with ventilated or unassisted animals
- Suitable for rats and larger animals
- Control of breathing & sleep studies

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800-642-7719 (610-642-7719 in PA) FAX 610-642-1532

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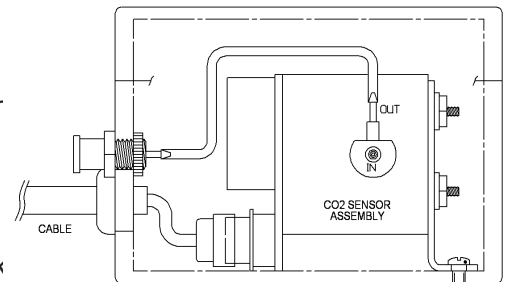
# CAPSTAR-100 CO<sub>2</sub> Analyzer

## Specifications

Analyzer type	single beam infrared
Sample cell materials	sapphire and stainless steel
Sample inlet connector	.062" OD brass tube
Recommended sample tubing size	.040" - 0.062" ID Tygon™
Measurement range	0-10% CO <sub>2</sub>
Analog output scaling	100mV/% CO <sub>2</sub> (0-1V)
Linearity	0.1% CO <sub>2</sub>
Repeatability	0.1% CO <sub>2</sub>
Response time (T <sub>10</sub> - T <sub>90</sub> )	100mS at 100 ml/min sampling
Response time (T <sub>10</sub> - T <sub>90</sub> )	130mS at 50 ml/min sampling
Response time (T <sub>10</sub> - T <sub>90</sub> )	250mS at 30 ml/min sampling
Zero stability	0.1% (8 hours), 0.2% (24 hours)
Operating temperature range	5 - 40°C
Optical bench temperature	48°C, temperature controlled
Warm-up time	.5 min to 0.2%, 10 min to 0.1%
Sample rate flowmeter	.10 - 50 ml/min
Maximum sample cell pressure	±5 psig
Interference effects: vaporized anesthetic agents	negligible
Interference effects: 50% N <sub>2</sub> O	0.1% at 0% CO <sub>2</sub> , 0.6% at 5% CO <sub>2</sub> (uncompensated)
Nitrous oxide compensation (internal jumper for 25, 50, 75%)	0.1% at 5% CO <sub>2</sub>
Controls	Zero, Span (10-turn dials)
Electrical requirements	120VAC/220VAC switchable, 35VA
Dimensions (main unit)	.9W x 5H x 9D in., 23W x 13H x 23D cm
Dimensions (SENSORPOD)	.3W x 2.5H x 3D in., 7.6W x 6.4H x 7.6D cm
Weight	10 lbs (4.5kg)

## Ordering Information

11-10000	CAPSTAR-100 CO <sub>2</sub> Analyzer, complete with accessory kit , 120/240V 50/60Hz
11-01100	Replacement CO <sub>2</sub> sample cell
11-01101	Accessory kit; 2 moisture traps, 2 13mm hydrophobic filters, 1 sample line, 2 Nafion®. sample lines (6" and 2')
11-01102	Sample line, plain, 5', with male Luer-loc connectors
11-01103	Sample line, 2' Nafion® tubing (absorbs and evaporates conder moisture), with Luer connectors
11-01111	Sample line, 6" Nafion® tubing, with Luer connectors
11-01104	Sample tubing, .040" ID Tygon™, 10' coil
11-01105	Luer-loc adapter, .040" - .062" ID flex tubing to male Luer, pack
11-01106	Luer-loc adapter, .125" ID flex tubing to male Luer, pack of 5
11-01108	In-line miniature (13mm) hydrophobic filter, Luer fittings, pack c. 5
11-01110	Calibration gas, 4 liter aerosol can, 5% CO <sub>2</sub> , 20% O <sub>2</sub> , balance N <sub>2</sub>
11-10001	Serial Port, RS232 Serial data port, with cable



SensorPod CUTAWAY VIEW

**Note 1:** This instrument is not to be used for Human Life Support applications or Critical Care monitoring. No claims are made regarding the diagnostic properties of any measurements made using the diagnostic properties of any measurements made using this device.

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