

# GEMINI O<sub>2</sub> & CO<sub>2</sub> Monitor

accurate O<sub>2</sub> & CO<sub>2</sub> monitor for rats & larger animals



## STANDARD FEATURES AND APPLICATIONS

- End-tidal O<sub>2</sub> & CO<sub>2</sub> monitoring
- Measures O<sub>2</sub>, CO<sub>2</sub>, & respiration rate (RR)
- NEW METABOLIC MODE (slower, high-resolution measurement)
- Low sample flow requirements.
- Suitable for rats and larger animals
- Paramagnetic O<sub>2</sub> analyzer
- Infrared CO<sub>2</sub> analyzer
- Graphical CO<sub>2</sub> and O<sub>2</sub> waveform display

Respiratory gas measurement has long been known to be an excellent indicator of respiratory status, for both spontaneously breathing and artificially ventilated animals. The GEMINI Respiratory Monitor measures breath-by-breath oxygen and carbon dioxide concentration for accurate respiratory status assessment. The instrument uses the latest technology fast infrared (CO<sub>2</sub>) and paramagnetic (O<sub>2</sub>) measurement cells for unsurpassed accuracy and long-term stability. Respiratory rate is computed using the normal inspiration/expiration excursion of the CO<sub>2</sub> signal. Adjustable CO<sub>2</sub> and respiratory rate alarms are standard. Linear voltage outputs are provided for both gasses and respiratory rate, and a USB serial port provides data for external monitoring or collection on a computer.

A special new feature of the GEMINI is Metabolic Mode, where the response time is slower, but with a 10X increase in

gas measurement resolution. This is especially useful for making oxygen consumption measurements with a metabolic chamber where breath-by-breath response is not necessary.

The measurements and computed results are reported directly on the front-panel color TFT display. High/Low alarm settings are individually adjustable, and are stored in non-volatile memory. These settings are restored when the unit is next used. Indicator lights and an audible signal provide status indicators for proper system operation. Measurements can be displayed as continuous (fast) or peak end-tidal readings.

### Easy setup and operation

Typical operation requires only a simple setup. The small diameter sample tubing is connected to the animal's endotracheal tube using the supplied fittings. All alarm settings are adjusted with a single knob. Alarm lights are always active, but an audible alarm can be switched on or off as desired.

The gas and rate outputs are standardized for easy external recording. The USB port provides simple ASCII formatted data that can be received using any communications software, and easily imported into a spreadsheet for calculation.

The only maintenance required is periodic inspection or replacement of the supplied moisture filters. Special input tubing includes a Nafion® membrane that automatically dries the sample gas for long, trouble-free monitoring. A miniature in-line hydrophobic filter prevents water from entering the analyzer and should always be used (and changed as needed).

VENTILATE

ANESTHETIZE

ACQUIRE

MONITOR

MEASURE



800.642.7719 info@cwe-inc.com

[www.cwe-inc.com](http://www.cwe-inc.com)

# GEMINI O<sub>2</sub> & CO<sub>2</sub> Monitor

## SPECIFICATIONS

|   |   |
|---|---|
| Carbon dioxide analyzer                           | single beam infrared  |
| Sample cell materials                             | sapphire and stainless steel                                      |
| Measurement range                                 | 0-15% CO <sub>2</sub>   |
| Linearity   | 0.1% CO <sub>2</sub>  |
| Repeatability                                     | 0.1% CO <sub>2</sub>  |
| Response time (T10 - T90)                         | 95mS at 200 ml/min sampling                                       |
| Response time (T10 - T90)                         | 110mS at 60 ml/min sampling                                       |
| Zero stability                                    | 0.1% (8 hours), 0.2% (24 hours)                                   |
| Interference effects: 50% N <sub>2</sub> O        | 0.1% at 0% CO <sub>2</sub> , 0.6% at 5% CO <sub>2</sub> (uncomp.) |
| Maximum sample cell pressure                      | + 5 psig  |
| 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%                                     |
| <hr/>   |   |
| Oxygen analyzer                                   | paramagnetic  |
| Linearity   | 0.1% O <sub>2</sub>   |
| Repeatability                                     | <0.01% O <sub>2</sub> /hour                                       |
| Zero stability                                    | +0.1% O <sub>2</sub> /day   |
| Response time                                     | <200mS  |
| Operating temperature                             | 0 – 65oC  |
| Maximum pressure                                  | 15 psi  |
| Maximum sample flow                               | 200 ml/min  |
| Measurement range                                 | 0 – 100%  |
| <hr/>   |   |
| Sample flow measurement                           | 0 - 200 ml/min  |
| Respiratory rate measurement range                | 5 – 120 breaths/min   |
| Analog signal outputs (front and rear panel)      | BNC jacks   |
| CO <sub>2</sub> output scaling                    | 0.25V / %CO <sub>2</sub>  |
| O <sub>2</sub> output scaling                     | 40mV / %O <sub>2</sub>  |
| Respiratory rate output scaling                   | 10mV / bpm  |
| Serial data output format                         | 19200 baud, 8 data, no parity, 1 stop bit                         |
| Electrical requirements                           | 5V@4A power adapter, 120VAC/220VAC 50/60Hz                        |
| Dimensions  | 12.5W x 4.25H x 9.5D in., 32W x 11H x 24D cm                      |
| Weight  | 10 lbs. (4.5kg)   |

## ORDERING INFORMATION

|                  |   |
|------------------|---|
| <b>Part No.:</b> | <b>Description:</b>   |
| 14-10000         | GEMINI O <sub>2</sub> & CO <sub>2</sub> monitor   |
| 11-01108         | In-line miniature hydrophobic filter, 13mm dia, Luer fittings, pk of 5                      |
| 11-20222         | Dri-Tech Desiccant Kit: Includes chamber, Nafion 24, & 1 lb container of Drierite desiccant |

VENTILATE

ANESTHETIZE

ACQUIRE

MONITOR

MEASURE



800.642.7719 info@cwe-inc.com

[www.cwe-inc.com](http://www.cwe-inc.com)