The **GSM-3 Gas Mixer** is a versatile and accurate device for creating custom respiratory gas mixtures. Any three gasses can be connected as inputs, and the output is the user-programmed mixture of these gasses. The instrument can operate in a stand-alone mode, with mixture programming done from the front panel controls, or it can be controlled using an attached computer running the supplied software. Besides the mixing function, the GSM-3 can operate as an accurate flow source for a single gas.

The mixer uses thermal mass flow controllers to provide any programmed mixture in the range of 0 - 10 lpm for each gas with a resolution of 0.1% concentration. Front panel controls are used to set the total desired total output flow, as well as the concentration of each of the three component gasses. The LCD display shows the set concentrations, as well as the computed flow rates for each gas.

Up to four custom mixtures can be created and stored in non-volatile memory for future use. Any of these stored mixtures can be immediately selected and executed. This function allows rapid step-changes in concentrations to be performed with the push of a button.

The flow controllers are pre-calibrated for the three most commonly used respiratory gasses: O₂, CO₂, and N₂. Other gasses can also be selected, and internal correction factors are automatically applied to compensate the flow controllers for differing gas densities.

Besides operation as a stand-alone gas mixer, the GSM-3 can also be programmed and operated from an attached computer using a serial port. A Windows™ software application is provided with the instrument. This software allows convenient setting up and storage of any gas mixtures. In addition, it allows timed protocols to be set up and executed. For example, a program could be created that periodically changes the gas mixture from room air O₂ concentrations to hypoxic values over a set period of time. Any Windows-based PC with an available serial port can be used.

The GSM-3 Gas Mixer comes ready to use with CD-ROM software and a serial cable. Up to three input gasses can be attached, with a minimum pressure requirement of 20psi.

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**Standard Features:**
- Accurate custom gas mixtures
- 0 - 10 lpm for each of three gasses
- Stored programs for immediate retrieval
- Stand-alone or computer controlled
- Software allows timed protocols

**Applications:**
- Gas mixtures for *in vivo* or *in vitro* studies
- Control of breathing studies
- Environmental chambers
- Gas analyzer calibration mixtures
- Hypoxia and sleep studies

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800-642-7719 (610-642-7719 in PA)  FAX 610-642-1532
www.cwe-inc.com
Specifications: (Note 1)

- Controlled flow range for any input gas: 0 - 10 liters/min
- Flow accuracy: ±1.0%
- Flow setting repeatability: ±0.15%
- Resolution: 0.1%
- Temperature coefficient: 0.05% / °C
- Pressure coefficient: 0.01% / °C
- Response time (to 0.2%): 1 second
- Materials exposed to gas: Delrin with Viton seals
- Standard gasses for input (Note 2): Air, O₂, CO₂, and N₂
- Operating temperature range: 5 - 40° C
- Input gas temperature range: 0 - 50° C
- Minimum input gas pressure: 20psi
- Maximum input gas pressure: 200psi
- Gas inlet connections: quick push/pull 1/4" OD tubing connectors
- Gas mixture outlet connection: quick push/pull 1/4" OD tubing connector
- Analog gas concentration output scaling for each channel: 0.1V / %
- Serial data format: 9600 baud, 8 data, no parity, 1 stop bit
- Electrical requirements: 120VAC/220VAC switchable, 35VA
- Dimensions: 19W x 5.25H x 12D in., 49W x 13H x 30D cm
- Weight: 20 lbs. (9kg)

Note 1: Not to be used for Human Life Support applications.

Note 2: Many other gasses can be selected, except explosive mixtures, which MAY NOT be used.

Rear-panel view of the GSM-3 Gas Mixer, showing the three gas inlet connections and the mixture outlet to the left (1/4” quick push/pull connectors). The three BNC jacks provide an analog voltage corresponding to the concentration of each input gas in the programmed mixture.

Ordering Information

- 18-10000 GSM-3 Gas Mixer with software and serial cable

Related instruments:
- 12-01100 SAR-830/A Small animal ventilator, volume-cycled with internal air pump
- 12-02100 SAR-830/AP Small animal ventilator, volume/pressure-cycled, with internal air pump
- 11-10000 CapStar-100 End-Tidal CO₂ Analyzer
- 14-11000 OxyStar O₂ anlayzer
- 15-10000 MicroCapStar End-Tidal CO₂ analyzer for mice

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