

# FoxBox Respirometry System

Portable system for measuring oxygen and carbon dioxide in the field

The FoxBox Respirometry System is a field portable combined oxygen and carbon dioxide analysis system including a variable pump and mass flow meter integrated into a compact, dustproof, waterproof case. Equally at home in the lab or the field, the FoxBox is the core of a complete respirometry system.

The FoxBox can be ordered with a rechargeable Li-ion battery pack. Optional ExpeData data acquisition software allows simple analysis of respirometry data. The Foxbox Daemon translates the serial data stream into an ExpeData file.



## FEATURES

With 2 analog inputs, the Foxbox allows the user to connect additional instruments (e.g., water vapor or temperature measurement devices) to integrate into the data output stream

Barometric pressure compensation eliminates errors caused by ambient pressure variation

3 year warranty

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## SPECIFICATIONS

<b>ACCESSORY INPUTS</b>	Two configurable for temperature (-5 deg C – 60 deg C, accuracy 0.2 deg C, resolution 0.001C with included thermistor probe) or voltage, 0-5V, 16 bit resolution
<b>ACCURACY AND RESOLUTION*</b>	
• <b>OXYGEN:</b>	Accuracy better than 0.2% of full scale (1 - 100%); resolution 0.001%
• <b>CARBON DIOXIDE:</b>	Accuracy better than 1% of calibrated span; resolution to 1 ppm/0.0001%
• <b>BAROMETRIC PRESSURE:</b>	Accuracy better than 0.1% of full scale; resolution 0.001 kPa 0 -10%
<b>ANALOG OUTPUTS:</b>	BNC; O <sub>2</sub> , CO <sub>2</sub> , 2 user-assignable by menu system; 0-5V output with 16 bit resolution on all outputs
<b>CONNECTIONS:</b>	Nickel plated barb fittings for 1/8 in (3mm) ID flexible or semi-rigid tubing
<b>DIGITAL FILTRATION:</b>	Adjustable from zero to 50 seconds for 0-63% of a step change, in 0.2 second increments
<b>FLOW RANGE:</b>	20 - 1500 mL/min, measured and/or controlled via linearized mass flow meter; accuracy 2% of reading; temperature and barometric pressure compensation to STP is not required
<b>INTERNAL DATA STORAGE</b>	8100 data points (all parameters included), 0.1 - 600 sec interval, multiple recordings supported, non-volatile, upload to PC-compatible computer using included software
<b>MEASUREMENT RANGE</b>	
• <b>OXYGEN:</b>	0 - 100% (best accuracy above 1%)
• <b>CARBON DIOXIDE:</b>	0-5% CO <sub>2</sub> standard; 0-10% CO <sub>2</sub> optional
• <b>BAROMETRIC PRESSURE:</b>	30 - 110 kPa
<b>NOISE AND DRIFT*</b>	
• <b>OXYGEN:</b>	Noise < 0.004% peak-peak over 20 minutes, drift < 0.03% over 24 hours
• <b>CARBON DIOXIDE:</b>	Noise < 1 ppm RMS over 20 minutes, drift < 15 ppm over 24 hours
<b>OPERATING TEMPERATURE:</b>	5 - 45 degrees C, relative humidity non-condensing
<b>PANEL DISPLAY:</b>	Digital 4 x 16 line alphanumeric LCD
<b>READOUT:</b>	Simultaneous display of O <sub>2</sub> , CO <sub>2</sub> , flow rate and barometric pressure
<b>RESPONSE TIME</b>	
• <b>OXYGEN:</b>	< 7 seconds for 10-90% of a step change at 200 ml/minute
• <b>CARBON DIOXIDE:</b>	< 2 seconds for 10-90% of a step change
<b>SERIAL OUTPUT:</b>	RS232-8N1; baud rate 115200; both polled and broadcast modes available
<b>TECHNOLOGY:</b>	O <sub>2</sub> fuel cell, up to 36 month life, user-replaceable; CO <sub>2</sub> dual-wavelength non-dispersive infrared
<b>RECOMMENDED CALIBRATION INTERVAL:</b>	1 Year
<b>POWER REQUIREMENTS:</b>	12 -24 VDC; universal adapter supplied
<b>DIMENSION (W X D X H):</b>	11 x 10 x 7 in. (28 x 25 x 18 cm)
<b>WEIGHT:</b>	7 lbs (15 kg)

\*At constant temperature

## ABOUT US

Sable Systems International designs and manufactures leading-edge gas, metabolic and behavioral measurement systems for calorimetry, respirometry, metabolic/behavioral phenotyping, and gas analysis. Our products enable the highest precision and resolution, optimum workflow and reliable performance – giving you utmost confidence in your results. Scientists the world over rely on Sable technology for their research needs in physiological, biomedical, environmental, and gas analysis applications.



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