

Respirometer Systems and Applications

Pulse-Flow Respirometers PF-4000, PF-8000



PF 8000 Pictured

Applications:

- Biodegradation Assessments
 - Activated Sludge Respiration (ASR) Tests
 - OUR Fingerprinting (OUR Respirograms)
 - Biomass Activity Tests
 - Extant Kinetic Measurements
 - Performance Evaluations
 - Toxicity Assessments
 - Short-Term BOD Measurements

Respirometer Systems and Applications, LLC
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System Configuration

PF-4000 and PF-8000 Respirometers

RSA's PF-4000 and PF-8000 Pulse-Flow respirometers are designed specifically to measure oxygen uptake for aerobic biological reactions and gas production from anaerobic and anoxic biological reactions. Modular system design allows easy expansion. The 8-position PF-8000 units can be expanded easily to 16 and 24-position units. Oxygen uptake is measured at rates as low as 0.05 mg/min and as high as 1,200 mg/hr. Units can be used in a constant-temperature incubator or can be fitted with optional water bath and heating/cooling units.

Features

Accuracy and Precision

High accuracy and precision are accomplished through quality design and construction. Each system is factory-calibrated to ensure accuracy.

Data Collection

Oxygen or gas flow data are monitored by computer and stored in convenient spread-sheet format for ease of data evaluation. The PF Systems software was designed for user convenience and provides on-screen tabular and graphical indications of the cumulative oxygen uptake and gas flow rates. Data record intervals can be set at intervals ranging from 1 to 720 minutes.

Operation

The operation of PF respirometer systems is simplified through the use of standard laboratory glassware. No grease or specialized lubricants are required to seal the reaction vessels, thereby reducing the set-up and cleanup time. Gas or liquid samples can be withdrawn easily from reaction vessels at any time during a test.

Flexibility

PF respirometers allow maximum flexibility in application. Operation in the low-flow mode provides maximum sensitivity for monitoring low-rate aerobic or anaerobic reactions. Operation in high-flow modes allows measurement of oxygen uptake or gas production for large laboratory-scale pilot plants at rates in excess of 1000 mL/hour. Reactor volumes for normal respirometric applications are 500 mL, but can range from less than 50 mL to 2 L or larger.

Specifications

PF-4000 and PF-8000

Equipment Items

- 4- or 8-position flow measuring base
- USB output to any computer for data acquisition*
- Accessories kit
- 4 or 8-position magnetic stirring base
- Readout interval (1 to 720 minutes)
- Electrical requirements (110 to 240 VAC, 50-60Hz)

Specifications

- Reaction vessel size (50 mL to 2+ L)
- Temperature of operation (5 to 70°C)
- Minimum flow rate detection: < 0.05 mg O₂
- Maximum flow capacity: ~ 1200 mg O₂/hr
- Sensitivity: as low as 0.05 mg
- Measurement precision: < 3% C_V

*Requires Pentium 233+ Computer with 500 MB+ HD, CD, USB port, and Windows[™] XP+

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