

Parameter	Required Specification
Analysis Type(s)	System must be able to measure the kinetics of a microbial fermentation for applications that include, but are not limited to, Rumen Nutrition, Human Digestion, Yeast Activity, Biomass-to-Fuel, Biodegradability, Biochemical Oxygen Demand (BOD), Soil Quality, and more.
Official method	N/A
Automation level	<ul style="list-style-type: none"> <li>- System must be able to measure the kinetics of a microbial fermentation in an automated fashion by monitoring the gas pressure within multiple Modules and remotely recording the data in computer spreadsheets using wireless technology.</li> <li>- From the computer interface, the system must allow the operator to control numerous variables such as data recording intervals and the automatic release of pressure through internal valves in each module.</li> <li>- System must be able to support at least 75 individual modules.</li> <li>- Each module within the system must be equipped with a temperature sensor that can measure the temperature of the module's environment.</li> <li>- Each module must be equipped with a mechanism to collect gas from the bottle during an assay.</li> <li>- Modules must be able to function in a regulated temperature environment such as an incubator or a water bath.</li> <li>- Modules must use rechargeable batteries to allow for extended assays.</li> <li>- System must include a battery charger.</li> <li>- Modules must be able to release pressure automatically based on parameters set in the computer software.</li> <li>- System must include a module vent valve cleaning kit.</li> <li>- System must include a test kit to validate function.</li> </ul>
Filter technology	N/A
Accuracy and precision	<p>At Room Temperature (25C)</p> <p>Cumulative Pressure Range: -10 - 500 psi.</p> <p>Resolution: +/- 0.04psi</p> <p>Accuracy: +/- 1%</p>
Capacity	<ul style="list-style-type: none"> <li>- System must be able to support at least 75 individual modules.</li> <li>- System must include fermentation module bottle sizes of 100ml, 250ml, 500ml, 1000ml, and 1.8L.</li> </ul>
Sample size	Dependent on assay and bottle size
Measuring range	0-100%
Sample types	Dependent on assay

Software	<ul style="list-style-type: none"> <li>- From a Windows computer interface, the system must allow the operator to control numerous variables such as data recording intervals and the automatic release of pressure through internal valves in each Module.</li> <li>- The software must monitor the gas pressure within multiple Modules and remotely record the data in MS-Excel spreadsheets using wireless technology.</li> <li>- The software must be able to graph pressure and temperature data in real time and display the graphs.</li> <li>- The software must capture and display battery voltage level in real time.</li> </ul>
Data interface	<ul style="list-style-type: none"> <li>- From the computer interface, the system must allow the operator to control numerous variables such as data recording intervals and the automatic release of pressure through internal valves in each Module.</li> <li>- The software must monitor the gas pressure within multiple Modules and remotely record the data in MS-Excel spreadsheets using wireless technology.</li> </ul>
Safety functions	<ul style="list-style-type: none"> <li>- To avoid bottle stress, modules must be able to release pressure automatically based on parameters set in the computer software.</li> </ul>
Power requirements	Battery powered
Ventilation requirements	<ul style="list-style-type: none"> <li>- Modules must be able to release pressure automatically based on parameters set in the computer software.</li> <li>- System must include a module vent valve cleaning kit.</li> <li>- System does NOT have to be positioned under a hood.</li> </ul>
Solvent recovery	N/A
Training	Video installation and training
Warranty	1-year included by manufacturer