lab owl
Bioreactor Control System

Lab Owl is a flexible and fully integrated bioreactor-agnostic control system for cell culture and fermentation applications. Lab Owl features an easy-to-use interface that has been utilized in applications ranging from benchtop bioreactors in development labs through pilot plants and production.

Ease of Configuration

A few simple steps and your Lab Owl system is ready to go. 1. Set up your equipment, 2. Set up your experiment, 3. Calibrate.
Lab Owl accommodates the physical configuration of your bioreactor and walks you through pH and DO calibration.
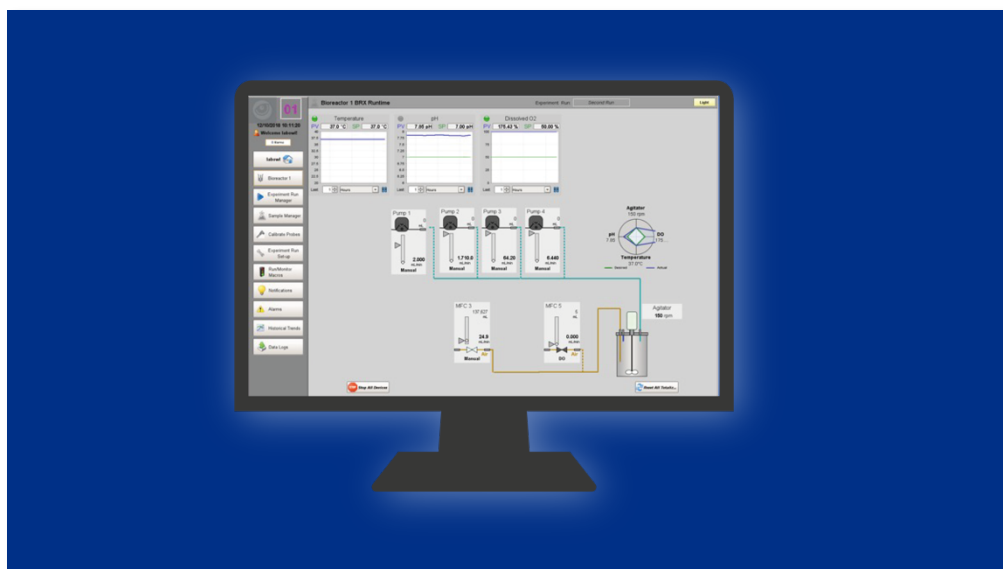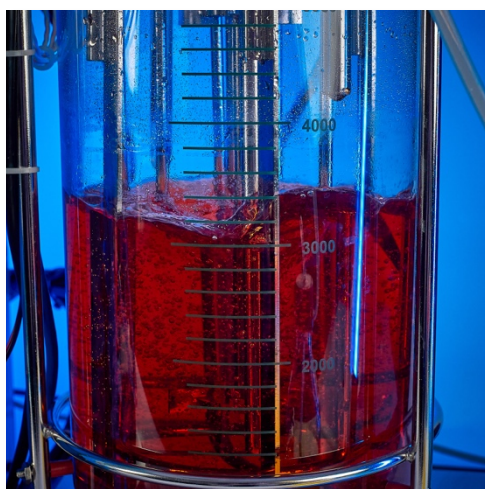
Remote Access

How many times have you wished you could monitor, correct, fine tune, or adjust an experiment run without having to physically return to the lab? Lab Owl provides remote access from anywhere, at any time.

Flexible Control

Improve the quality, repeatability, and robustness of your runs by ensuring consistent operations. Define control methodologies for each loop and trigger specific control functionality based on time or an event to allow for unattended operations such as set-point changes, feeds, and more.

Data Collection and Reporting

Lab Owl doesn't just record data from your bioreactors, it captures data output from all integrated analytical instruments. Collection of all your data makes it easier and faster to identify experiment run errors and issues, and to make necessary adjustments.

Industry Standard Components

Lab Owl is powered by a standard controller making it easy to maintain, extend, and scale. Bring the reliability, support and maintainability that is the standard in production to your lab. Data integration to external systems and analyzers is provided using OPC or MQTT.

Modular and Adaptable

Lab Owl is available in configurations to accommodate your specific requirements from laboratory, to Pilot, to Scale. One supervisor can serve as the interface for multiple bioreactor units. Control schemes – and recipe macros that have been built in the lab are easily utilized in pilot and production.

inflexion point

Lab Owl is a division of InflexionPoint
3535 State Route 66 | Neptune, NJ 07753
www.inflexionpoint.ai

"Being able to generate reports that include information from all my bioreactors and analytical instruments is data nirvana! Lab Owl has eliminated our manual data entry and transcription errors."

"Lab Owl allows us to focus on discovery and innovation rather than routine lab functions."

"Since integrating Lab Owl, I can leave the lab without a concern over routine lab operations that would have otherwise required attention overnight."

"We can now conduct our research with the assurance that our fermenter and control system will perform consistently and reliably."

"Lab Owl improves the quality, repeatability, and robustness of my experiment runs."

See more. Know more. Control more.

Lab Owl is a division of InflexionPoint
3535 State Route 66 | Neptune, NJ 07753
www.inflexionpoint.ai

Instrumentation	Max Devices	Option 1	Option 2
Temperature Probe Input	1	PT100	N/A
DO Probe Input	1	Analog (BNC Connection)	Digital (Modbus, M12 Connection)
pH Probe Input	1	Analog (BNC Connection)	Digital (Modbus, M12 Connection)
External Device	1	Analog 4-20 mA, 0-20 mA, 0-10V (M12 Connection)	N/A
Scales	4	3 Digital (RJ45 Connection)	1 Analog (M12 Connection)
Cooling	1	Integrated Cooling water valve and connections for supply and return	Peltier Chiller *(purchased separately)*
Control Devices			
Agitator Motor	1	Teknic Servo (Speed adjustable up to 1000 Rpm)	N/A
Peristaltic Pumps	6	Watson-Marlow 114 Series	Watson-Marlow 300 Series
Mass Flow Controllers	6	Parker X-Flow series (50:1 turndown)	N/A
Electric Heater Outputs	2	1 Controlled by PID	1 Vent Heater
Options			
Pressure Monitoring	1	PendoTECH PressureMAT	N/A
Metabolite Sensor Input *(Sensor Purchased separately)*	1	Jobst (RS232, M12 Connection)	N/A
Cell Density Sensor Input *(Probe purchased separately)*	1	Digital (Modbus, M12 Connection)	N/A
Foam Detection / Anti-Foam Control	1		

Lab Owl is a division of InflexionPoint
3535 State Route 66 | Neptune, NJ 07753
www.inflexionpoint.ai

Lab Owl Supervisor

Software Features

Lab Dashboard shows all reactors Drill into Individual bioreactor home page to access control and data functions	Manage experiment data • Log start and end of experiments for ease of data retrieval by experiment name • Create custom markers to log events such as induction, feeds and samples during a run
Historical collection of process parameters	Manage samples and enter corrections to DO and pH readings
Log alarms and events to SQL database Alarms configurable as absolute or relative	Retrieve data by time or experiment for viewing in trends or export to csv
Calibration Wizards drive accuracy and consistency of DO and pH readings	User configurable Notifications via email or text based on process conditions or time period
Pump Head and Tubing Database to store and setup rpm to ml/min conversions	User defined Macros for recipe setpoint download or advanced coordination of setpoint changes or device control based on time or process condition
User management and full audit trail for 21CFR11 compliance	Remote access for service and support via outbound only port

Control Features

PID Control Loops for • DO (bi-directional) • pH (separate acid / base tuning) • Temperature (heating / cooling) • User Configurable Input	Multi-Step Cascade of DO, pH and User Input loops to any combination of pumps, gas flows and the agitator Linear and Exponential Pump Ramping Modes Charge by time and volume or flow rate or by gain or loss in weight with scale

System Capabilities

Standard supervisor controls up to 16 bioreactors	Expandable by request.
Redundant options are available for larger systems	OPC US compatible