



**New Brunswick Scientific**

*Where Quality and Innovation Have Become Tradition*

**7.0L - 19.5L BIOFLO®415  
SIP FERMENTATION SYSTEM**

*For Research Labs, Process Development & Pilot Plants.  
No External Steam Supply Needed!*



# Eliminate Lifting Heavy Vessels to the Autoclave!

New Brunswick Scientific's new BioFlo® 415 sterilizable-in-place fermentor, with advanced touchscreen interface, provides an unprecedented level of convenience and control for research through production applications. This cGMP-compliant, validatable benchtop system is uniquely capable of automatic sterilization using only your lab's water supply and the unit's built-in heater. With the ability to control up to 32 process loops and regulate one to four gasses, it's an ideal system for high-yield production of bacteria, yeast & fungi in aerobic and anaerobic cultures.

## Sterilizable-in-Place Convenience

Why struggle carrying heavy vessels to and from the autoclave? Now you can sterilize your vessel, air and exhaust lines — with no external steam supply needed.

- Sterilization sequences are fully automated.
- Rapid heat-up & cool-down
- Sterilization sequences are easily initiated and configurable to match any requirement.

## Powerful Controller with Large Touchscreen Display

We've seamlessly blended power & simplicity into one easy-to-use control station.

- Large 15" touchscreen interface simplifies entering setpoints and provides easy-to-read displays of current values, cascade loops, sterilization cycles and more.
- Controls up to 32 process loops.
- Easily integrates up to 10 external devices including your scales, analyzers or sensors for optimized yields.
- User-customizable trend graphs make it easy to track and export data. Trends up to 8 loops simultaneously.
- Saves up to 10 of your recipes for repeat usage.

## Pre-Configured or Customizable to Fit Your Process Needs

Simplify ordering by choosing one of our pre-configured packages, or select from a wide array of options to customize the BioFlo 415 to your process needs.

- Offered with interchangeable 7, 14 & 19.5 L stainless-steel vessels. There's no hard piping, so you can interchange another vessel of any size, at any time.
- 1 Thermal Mass Flow Controller (TMFC) is standard. Multiple TMFCs optional.
- Multiple impeller options are available, individually suited for a particular process.
- Optional probes, addition kits and BioCommand® supervisory software can be added. Validation & training packages are also available.

## BioFlo 415 Makes Scale-Up Easy

New Brunswick Scientific's BioFlo 415 is just one of a full line of unique solutions for research through production-scale processing. This SIP system combines dependable operation, with system flexibility, increased throughput and affordable pricing. Ask your NBS sales representative for a quotation today.



New sparger and exhaust condenser with integral heating pad eliminate clogging during sterilization. Process-controlled solenoid allows for proper condensate draining during SIP.



Multiple connections are provided for integrating ancillary equipment & BioCommand supervisory software. USB ports are provided for exporting trend data and importing firmware upgrades. All are easily accessed from the rear of the unit.



Parameter	Unit	Setpoint	Value	Control Mode	Units	Units
Flow	0	20	0.0	ON	SLPM	None
Temp	30.0	30.0	0.0	ON	degC	None
pH	6.75	6.80	0.0	ON	pH	None
pH1	2.0	0.0	0.0	OFF	N/A	None
Airflow (1)	-0.1	0.0	20.0	Min	SLPM	None
O2 (1)	-0.0	0.0	0.0	Min	SLPM	None
O2 (2)	-0.0	0.0	0.0	Min	SLPM	None
O2 (3)	-0.1	0.0	0.0	Min	SLPM	None
CO2 (1)	0.0	0.0	0.0	ON	%	None

Summary screen lets you conveniently view setpoints, current values, cascade loops and more — for up to 10 parameters simultaneously. All 32 parameters can be viewed simply by scrolling up or down.

**Standard Pre-Configured Packages** include a Control Station with touch-screen interface, vessel with magnetic drive, and foam/level sensor to simplify ordering

**New Headplate Design** lets you incorporate optional redundant probes and multiple septums

**Safety Features** A sanitary rupture disk in the vessel and an ASME safety release valve on the drain jacket are standard

**Adjustable-Angle, User-Friendly 15" Touchscreen Interface** simplifies control and provides clear viewing of process parameters

**A Thermal Mass Flow Controller (TMFC)** with 4-gas control is built into each Control Station to precisely control total gas flow rate. Additional TMFCs can be added for individual gas control of 2, 3 or 4 gasses

**Customize PI Values for All Process Parameters** or select factory defaults

**Synoptic Screen provides pictorial alternative** to the summary screen for viewing & editing process values

**Connections for Gasses & Vessel Components** are easily accessible

**Front-Mounted On-Off Switch** is easily accessed

**ASME & CE Certified** Designed and built to ASME and CE standards

**Illuminated Sight Glass** 1½" window and momentary light provide clear viewing of vessel contents

**Quick Connects** allow utilities to be added in seconds

**Three Built-in, Assignable, Peristaltic Pumps** are provided for addition, harvest, foam, level, etc. Controls and connections are also provided for easy addition of your external pumps

**Optional Drain Valve** is easily accessed through an opening at the bottom of the vessel

**Recommended options include pH, DO and Redox Kits, 7-port septum, 8-port serial box for scales.** Options are also available for second pH, DO and level/foam probes and optional impellers



**The trend graph screen** makes it simple to track & export data on up to eight process variables over a six day span. Customize the view by selecting the parameters, colors & interval between sample measurements.

Phase	Device	Control	Valve A	Valve B	Valve C	Valve D	Valve E	Valve F	Valve G	Valve H
Wash Temp (Min)	PT-2A									
Heat W Temp (2) 100.0	PT-2B									
Heat W Temp (2) 123.5	PT-2C									
Heat W Temp (Max) 100	Heater									
Cool W Temp (2) 100.0	TY-2A									
Wash Temp (2) 30.0	Substrate									

**Enter and view sterilization parameters and valve sequences** from the sterilization screen. Across the bottom are quick links to screens for **synoptic view, calibration, cascades, trends, pumps, alarms and setup.**

To	From	Start Input	With Start Act	End Input	With End Act
Agit	10.5	250	0.0	1200	75.0
O2 (2)	10.5	0.0	75.0	100.0	100.0
None	ND				
None	ND				
None	ND				

**The cascade screen** provides sophisticated process control by altering any one or more variable, (in this case **Agitation** and **O<sub>2</sub>**), based on the value of any other one or more variables. Cascades run in parallel, not just serial sequence, for optimized control.

