



Extra versatile

New Brunswick's BioFlo®/CelliGen® 115 Autoclavable Fermentor and Bioreactor handles a wide variety of cells to meet your every need

Easy to use and versatile too!

New Brunswick's BioFlo®/CelliGen® 115

New Brunswick Scientific's BioFlo®/CelliGen® 115 is an exceptionally capable benchtop fermentor/bioreactor. Offered in 1 to 10 liter capacities, this system has been designed to provide the versatility to grow a wide variety of cells, making it ideally suited for biotechnology and pharmaceuticals, biofuels, R&D, testing labs, academic institutes, and much more!

- > All 115 systems are pre-programmed with both fermentation and cell culture operating modes for total flexibility. Switching between modes automatically adjusts gas flow and speed ranges
- > Grow virtually any cell type: aerobic or anaerobic; microbes, yeast, insect, plant and mammalian cells
- > The compact control station includes everything needed for total process control: color touchscreen interface, three built-in pumps, gas flow controllers for up to four gasses (air/O₂/N₂/CO₂), foam/level sensors, pH/DO controllers and more
- > Offered with water-jacketed or heat-blanketed vessels in four sizes: 1, 2, 5 and 10 L
- > Pre-packaged fermentation and cell culture kits make ordering easy, or select from a wide range of options to meet your exact needs
- > Single-use adapter kit available



Gas control options include:

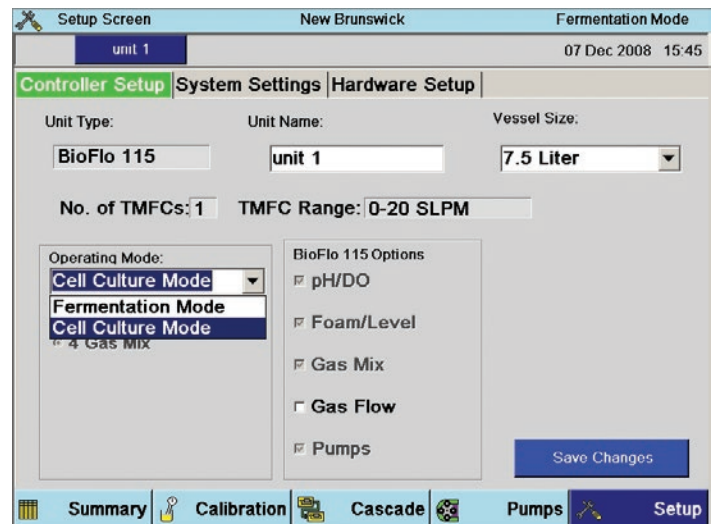
- > Automatic 4-gas mixing via solenoid valves
- > Manual gas mixing via Rotameters
- > Automatic gas flow control via Thermal Mass Flow Controller (TMFC)
- > Manual gas flow control via 0 to 4 manual Rotameters; multiple gas flow ranges available
- > Ring sparger
- > Microsparger

Simple operation

- > Control screens are easy to understand and use
- > Pre-defined drop-down selections, radio buttons and tabs help you to quickly set up your process
- > Quick links at the bottom of each screen make it one-touch simple to navigate between Set-Up, Calibration, Cascade, Pumps and Summary displays
- > New Brunswick's Reactor Process Control (RPC) software is provided as standard on all New Brunswick benchtop fermentors and bioreactors for easy transition when you're ready to scale up

Exceptional application support

Our experienced and highly trained application specialists are readily available to support you. Hands-on training is also available. Ask your sales representative for details



Setup screens let you manage connections and operating modes for each vessel in your process.

LoopName	PV	Setpoint	Out%	Mode	Units	Casc.
Agit	250	250	41.0	Auto	RPM	None
Temp	34.9	37.0	21.7	Auto	DegC	None
pH	7.05	7.00	-8.7	Auto	pH	None
DO	55.6	35.0	1.2	Auto	%DO	None
Air (1)	100.0	100.0	100.0	O2 Enrh	%	None
O2 (2)	0.0	0.0	0.0	O2 Enrh	%	None

Summary displays all of your critical process values on one screen for easy monitoring. View the setpoint, present value (PV), current percent output and control mode for each loop, as well as cascades you've programmed and unit of measure.

Need a second or third system?

Up to three independent fermentors/bioreactors can be controlled from a single touchscreen interface. Budget-saving utility stations (without touchscreen) and "Add-A-Vessel Kits" make it easy to expand your system as needed.

Easy to get going and start growing

The compact New Brunswick BioFlo®/CelliGen® 115 sets up in minutes. Adding extra vessels or a second/third utility station is plug-and-play simple. No configuration needed.

Control/Utility Station

Compact design. Cabinet footprint measures just 39.6 x 40.6 cm (15.6 x 16 in) W x D

Touchscreen Interface

Standard on control stations. Not provided on utility stations

Water-Jacketed Vessel

Shown with base heater, exhaust gas condenser and magnetic drive motor

Heat-Blanketed Vessel

Shown with vessel stand, exhaust gas condenser and direct drive motor

Easily Accessed Connections

For probes, motor, heater and sparge

Gas Control

Up to four Rotameters or a Thermal Mass Flow Controller. (Two Rotameters shown)

Quick Connects

For Water In/Out allow utilities to be attached in seconds

Peristaltic Pumps

Three fixed-speed (12 rpm) pumps can be linked directly to acid, base, foam, level

On-Off

Easily accessed from the right side

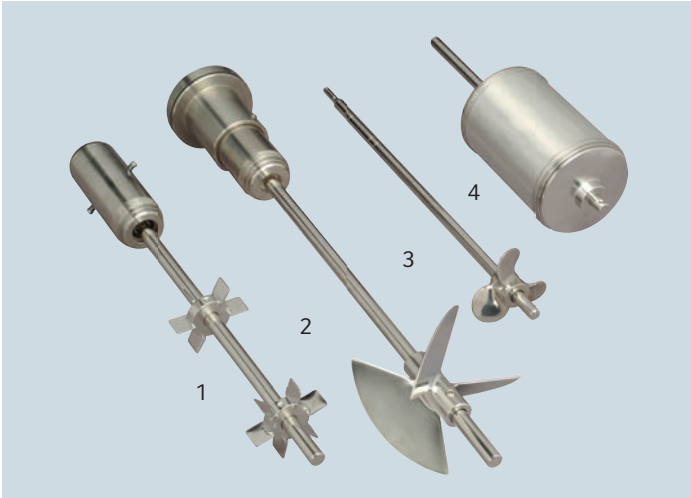
Optional Additional Bottle Holder

Saves bench space

Sampling Assembly



A wide range of options and accessories to meet your specific requirements



Four impeller options provide flexibility to grow a wide variety of cell lines:

1. Rushton impeller for standard fermentation applications
2. Low-shear pitched blade
3. Marine blade impellers for gentle mixing of shear-sensitive cell lines (i.e. insect, plant and animal cultures)
4. Spin filter — a cell-retention device used with a marine blade impeller — for perfusion processes using anchorage-dependent or suspension cultures



Exceptional flexibility

Numerous threaded ports provide a high degree of flexibility for positioning probes, sampling tube and exhaust gas condenser to suit your process

Vessel Size	Port Size			Total Ports
	6mm	12mm	19mm	
1 L	1	9	0	10
2 L	6	7	0	13
5 L	7	8	1	16
10 L	7	8	1	16

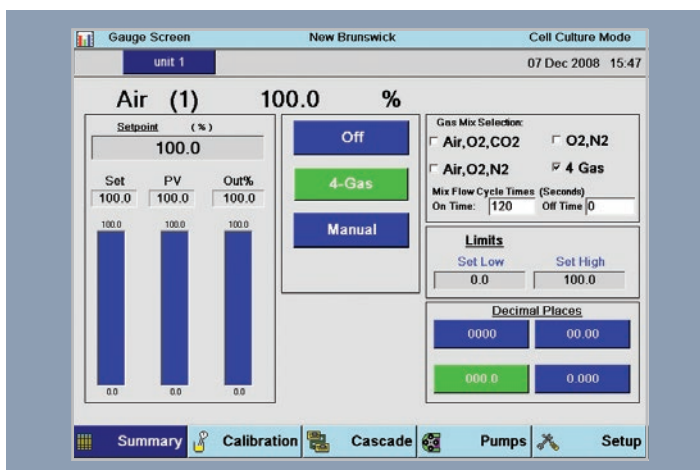


A wide range of accessories allows easy customization

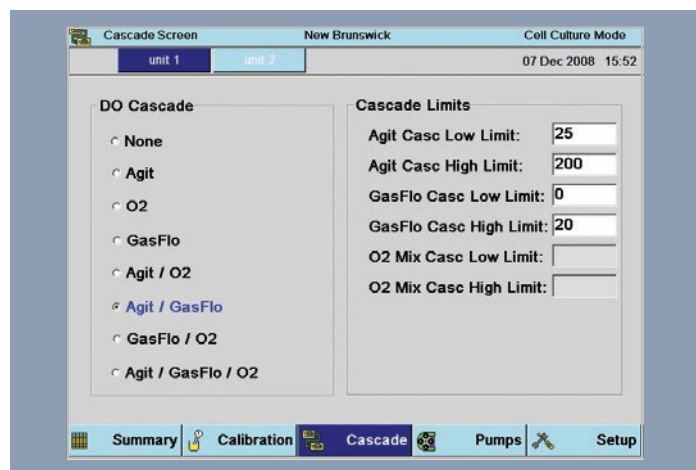
Intelligent controls

Operation made simple

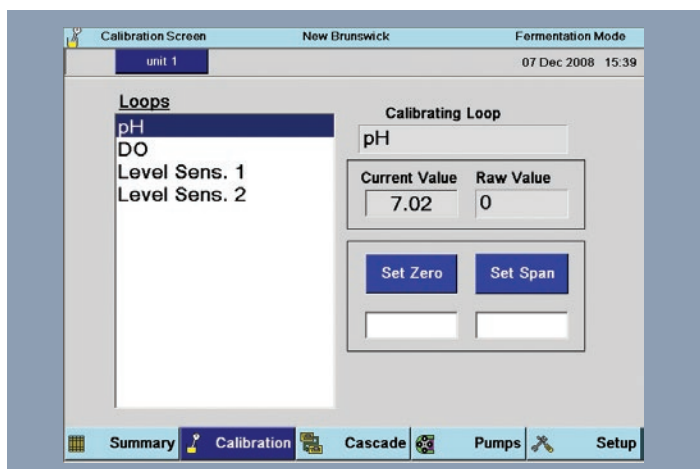
- > Cell culture mode automatically mixes two, three or four gasses for optimized cell growth. Two-gas mixing option in fermentation mode enables mixing air and oxygen for high cell yields. Easily switch between modes through touchscreen controls.
- > Highly customizable gas flow options allow you to design a system specific to your needs. Choose one, two, three or four manual Rotameters of various flow rates. Or select a digital TMFC.
- > Adjustable PID values for pH and DO are automatically defined by vessel size or can be fine tuned for the ultimate in control flexibility
- > Free firmware updates are easily accessed from our website. No service technician or downtime
- > Compatible with New Brunswick BioCommand® software for advanced control strategies and data logging



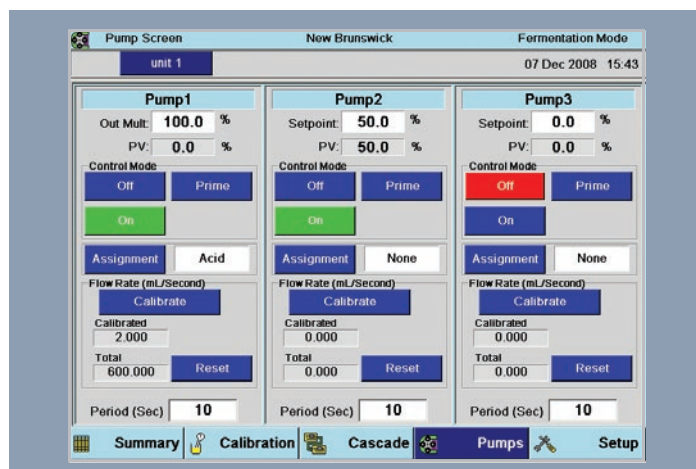
Gauge screen: Change gas control modes and mix, customize decimal displays, set deadbands or change PI settings all from loop gauge screens.



Dissolved Oxygen (DO) Cascade: automates maintaining DO setpoint through single- or multi-step cascade control.



pH/DO Calibration screen: pH and DO probes are easily calibrated by selecting the probe and entering the zero and span.



Pump screen: Control, calibrate and assign all three pumps from one screen.

Turn-key solutions

Simplify ordering; choose one of our pre-configured **Basic** or **Advanced Kits**. Or, design a fully configured system with our many options. Easily add a second or third independently-operated vessel; select a **Vessel Kit** and add a Control or Utility Station. Ask your rep about more options.

	Advanced Fermentation Kit		Advanced Cell Culture Kit		Basic Fermentation Kit	
Fermentor/Bioreactor Kit Contents						
Vessel Kit – Basic					■	
Vessel Kit – Advanced	■		■			
Master Control Station (Touch Screen)	■		■		■	
Temperature Control	■		■		■	
Agitation Control	■		■		■	
pH/DO Control	■		■			
Foam/Level Control	■		■			
3 Fixed-Speed Pumps	■		■			
Manual Gas Mix	■				■	
Automatic Gas Mix (via 4 Solenoids)			■			
Manual Gas Flow (via Rotameters)	■		■		■	
Automatic Gas Flow (0-20 SLPM TMFC); available in configured systems only)						
Add-A-Vessel Kit Contents						
	Heat Blanket	Water Jacket	Heat Blanket	Water Jacket	Heat Blanket	Water Jacket
Dish-Bottom Vessel with stainless steel headplate	■	■	■	■	■	■
Vessel Stand	■		■		■	
Agitation Motor, 50 - 1200 rpm (ferm. direct drive)	■	■			■	■
Agitation Motor, 25 - 200 rpm (cell cult. magnetic drive)			□	□		
Agitation Motor, 25 - 400 rpm (cell cult. direct drive)			□	□		
Heater Blanket	■		■		■	
Jacket Water Heater		■		■		■
Immersion Cooling Coil	■		■		■	
Thermowell & RTD Probe	■	■	■	■	■	■
pH/DO Probe Kit	■	■	■	■	□	□
Foam/Level Probe	■	■	■	■	□	□
Baffle Assembly	■	■			■	■
Rushton Impellers (two blades)	■	■	□	□	■	■
Pitched Blade Impeller (one blade)	□	□	■	■	□	□
Ring Sparger	■	■	■	■	■	■
Microsparge	□	□	□	□	□	□
Exhaust Condenser	■	■	■	■	□	□
Sampling Assembly	■	■	■	■	□	□
Tri-Port Adapter	■	■	■	■	□	□
Septum Kit	■	■	■	■	□	□
Liquid Addition Tube and Headplate Adapter	■	■	■	■	□	□
Two Addition Bottles and Tubing	■	■	■	■	□	□

■ Standard □ Optional

Vessel specifications*

Total Volume	1 L	2 L	5 Liters	10 Liters
Working volume	0.4 - 1.0 Liters	0.8 - 2.2 Liters	2.0 - 5.6 Liters	4.0 - 10.5 Liters
Design	Heat-blanketed and water-jacketed • All vessels are borosilicate glass, autoclavable, with dished-bottom			
Weight	6.8 kg (15.0 lb)	9.3 kg (20.5 lb)	18 kg (39.5 lb)	19.5 kg (43.0 lb)

BioFlo®/Celligen® 115 System specifications*

Control Station & Utility Station		Aeration	
Design	Compact control station with advanced integrated controller is capable of supporting up to 2 additional (optional) independent utility stations and vessels	Gas Flow Options	0 - 4 Rotameters: 0 -150 mLpm 250 - 2500 mLpm 1 - 5 Lpm • 1 - 20 Lpm (and more) 1 Thermal Mass Flow Controller (TMFC): 0.04 - 20 SLPM
Display	21.3 cm (8.4 in) industrial color touchscreen display is standard on the control station Not included on optional utility stations	Gas Mixing	Options: Automatic 4-gas mixing & manual gas mixing. Both via 4-gas manifold
Function	Fermentation and cell culture monitoring and control	Sparger	Standard: Ring Sparger Optional: Microsparger
Temperature		Inlet Filter	0.2 µm Absolute filter
Range	1.3 - 7.5 L: 70°C maximum temperature 14 L: 65°C maximum temperature	N ₂ Gas	For calibration of DO probe
Control	PID for heating and cooling Heat-blanketed Vessels: External heating blanket and immersed stainless steel cooling coil Water-jacketed Vessels: Water jacket heater and circulation loop	Exhaust	
Sensor	Platinum RTD probe (Pt 100)	Filter	0.2 µm Absolute filter
Agitation		Condenser	Stainless steel counterflow, water-cooled in headplate
Drive	Magnetic Drive or Direct Drive	3 Pumps	
Range	Direct Drive: Ferm 50 - 1200 rpm; Cell Cult 25 - 400 rpm • Mag Drive: 25 - 200 rpm	Control	60 Hz / 14.4 rpm 50 Hz / 12 rpm
Control	PID control; manual, automatic, or cascade settings	Utility Requirements	
Impellers	Rushton-style standard with fermentation system. Pitched blade standard with cell culture. Optional: Marine blade and/or Spin filter	Water	10 PSIG maximum, 50 µm filtration
Baffles	Removable 316L stainless steel; fermentation only	Gasses	10 PSIG maximum
pH		Electric Requirement	
Range	2 - 14 pH	100 - 230 V	50/60 Hz • Single Phase
Control	PID, link to pumps or gasses, adjustable deadband	100 - 120V: 10 Amps; 200 - 240V: 6 Amps	
Sensor	pH probe	Dimensions (Height x Width x Depth)	
DO		Control/Utility Station	Height: 67.6 cm (26.6 in) Width: 39.6 cm (15.6 in) Depth: 40.6 cm (16.0 in)
Range	0 - 200%	Warranty	One-year, parts and labor covering the entire system except glassware. Probes: one-year manufacturer's warranty. Factory-trained service technicians are located worldwide.
Control	PID, cascade to agitation, gasses, gas flow if equipped with TMFC	Regulatory Compliance	
Sensor	Polarographic DO probe		