

BIOCELL™ LABORATORY SERIES GMP BIOREACTOR 10 UP To 30L WV

EXPERIENCE AND INNOVATION

Utilizing its expertise in process vessel manufacturing, cell culture and automated systems, **DCI-BIOLAFITTE** introduces its **BIOCELL™ LABORATORY SERIES**, a new generation of SIP / CIP laboratory bioreactor. These systems represent the best tool for optimization of your batch, fed-batch or continuous cell culture processes using suspended cells or micro-carriers.

BENEFITS

- ❑ Open frame units are pre-mounted and pre-wired, allowing easy installation and maintenance
- ❑ High thermal transfer performance and minimum shear force via use of patented HTPG4™ impellers
- ❑ User friendly control interface based on Windows™ operating system
- ❑ Software packages for cell culture research/process optimization or production
- ❑ Designed to meet all needs for cGMP validated applications:
 - Material and component traceability - Endoscopic control of welds
 - Comprehensive testing and documentation package to support validation
 - Software compliant with cGAMP revision 4, 21 CFR Part 11 and S88 standards (batch module)

TECHNICAL SPECIFICATIONS

REACTOR

- ❑ Bottom and wall jacketed vessel with flat cover - aspect ratio of 1 : 1 - available sizes: 10/20 L, 20/35L, 30/50L
- ❑ Material and finish: stainless steel grade 1.4404 (316L) Ra ≤ 0.4 µm; all parts in contact with the culture are electro-polished
- ❑ Design pressure: 3 bar g (43 PSI) for vessel and jacket
- ❑ Standard features: round sight glass, illumination lamp, sanitary relief valve, pressure gauge, product inlets, DN25 ports for probes and sample valve

Options: Oval sight glass, clean in place devices, independent spin filter with magnetic drive for continuous culture, vessel insulation (bottom and wall)

AGITATION

- ❑ Top-mounted agitation system equipped with one HTPG4™ impellers - tip speed of 2 m/s
- ❑ Magnetic coupling

AERATION

- ❑ Via sparger (O₂) and overlay in headspace (air and CO₂)
 - ❑ 0.2 µm absolute filters on gas inlet and outlet
 - ❑ O₂ flow-rate controlled via mass flow controller
- Options: Additional gas supplies (N₂), automatic pressure control, exhaust gas condenser, exhaust gas heater, double filtration of exhaust gas, mass flow controller on air inlet, resterilizable filters*

PRODUCT ADDITION LINES

- ❑ 3 resterilizable lines for addition or transfer of product
- ❑ Combined resterilizable harvest and sampling line with flush-mounted diaphragm valve
- ❑ Connections for 4 peristaltic pumps, including one with adjustable speed for fed-batch cultures

Option: Additional resterilizable product lines, independent resterilizable sampling line



TEMPERATURE CONTROL

- ❑ Cultivation temperature controlled by injection of hot or cold water into jacket
 - ❑ Sterilization via direct / indirect steam injection
- Options: Glycol water heat exchanger, steam heat exchanger, electrical heater*

INSTRUMENTATION AND AUTOMATION

- ❑ PLC or DCU and PC workstation - Pentium 4 microprocessor, 1 GHz minimum
 - ❑ Operator interface with touch screen
 - ❑ Highly flexible control loops - Control types include PID, digital on/off, and others - Cascade mode for advanced control strategies
- Options: Color printer, measurement and/or control of all cell culture parameters: air flow / head pressure / anti-foam / weight / additional temperature monitoring on drain lines / low level / positive feedback of valve positions / nutrient flow / optical density / gas analyzer*

CONTROL SOFTWARE

WINPROGRESS™ SCADA/PLC combination or NEPTUNE™ SCADA/DCU combination

Basic version:

- ❑ Graphical representation of system, updated in real time
- ❑ Data logging and archiving with trends and graphs - Data can be exported via standard file format for use in reports or for further analysis
- ❑ Archive management
- ❑ Color printing of graphs, events and alarms
- ❑ Audit trail
- ❑ Alarm monitoring
- ❑ Access by password

Option: Advanced version

- ❑ *Calculation module allowing users to define additional calculations and apply control based on those calculations - Also adds set point profile feature – Cultivation file management*

Option: Expert version

- ❑ *Batch module compliant with ISA S88 guideline or Sequence module for process strategy optimization*

QUALIFICATION AND VALIDATION

- ❑ Full material traceability - All manufacturer certifications supplied
- ❑ 100% endoscopic control of process welds + 10% with CD record
- ❑ Comprehensive test and documentation program designed to ease and support validation

BIOCELL™ LABORATORY SERIES - SELECTION GUIDE

Indicate your selection here →

Code	Vessel Capacity (Working/total)	
B01	10/20 L	
B02	20/35 L	
B03	30/50 L	
	Other capacity on request	

Code	Version	
M	Semi-automatic	
A	Automatic	

Code	Control System	
N	NEPTUNE	
W	WINPROGRESS	

Code	Construction code	
C	CODAP 2000	
B	BRITISH STANDARD 5500	
A	ASME	

- (1) To replace round sight glass
- (2) Also requires option 21, jacket circulator
- (3) Basic version already fitted with 3 lines

Additional equipment (peristaltic pumps, reagent flasks, autoclavable or SIP vessels, scales, CIP units, ...) and customized designs for specific applications and biological containment are also available on request.

Indicate your selection here →

Code	Available Options	
00	Oval sight glass ⁽¹⁾	
01	Vessel insulation	
03	Independent spin filter fitted with magnetic drive for continuous cell culture	
20	Resterilizable gas filters	Qty:
21	Jacket circulator	
22A	Cooling via chilled water circulation in jacket	
22B	Cooling via glycol water heat exchanger ⁽²⁾	
23A	Heating via steam heat exchanger ⁽²⁾	
23B	Heating via electrical heater ⁽²⁾	
24	Resterilizable product addition line ⁽³⁾	Qty:
26	Cleaning in place device	
27	Independent resterilizable sampling valve	
30	Nitrogen line with rotameter	
31	Exhaust gas condenser	
32	Double filtration of gas inlet and exhaust gas lines	Qty:
34	Exhaust gas heater	
40	Air flow rate measurement and control	
41	Vessel pressure measurement and control	
43	Anti-foam control	
44	Vessel low level switch	
45A	Vessel weight measurement	
45B	Continuous level measurement	
46	Temperature measurement on drain lines	Qty:
47	Feedback control of valve position	
48	Feedback measurement of agitation speed	
49	Color printer	
50	Nutrient flow rate control	
51	Optical density measurement	
52	Gas analyzer	
60B	Advanced version supervision software	
60C	Expert version supervision software	

AVAILABLE SKID SIZES

Nominal working volume	Minimum working volume	Length	Width	Height	Weight Empty
10 L	2.5 L	1000 mm (40 in)	1050 mm (42 in)	2000 mm (80 in)	175 kg (390 lbs)
20 L	5 L	1000 mm (40 in)	1050 mm (42 in)	2000 mm (80 in)	185 kg (410 lbs)
30 L	8 L	1050 mm (42 in)	1100 mm (43 in)	2000 mm (82 in)	220 kg (490 lbs)

Other sizes available upon request

