

xCUBIO in-situ

SIP/CIP Technology for High-end and Scaled Applications

Reliable and reproducible aseptic conditions

Standard systems 5, 10, 20, 30 and 50 litre vessels

Customized engineering for scaled systems

GMP-compliance ready

Manual up to fully automatic operation: flexible automation degree

Up to 10 internal pumps, up to 6 MFCs, scaled external equipment, integrated upstream processes

xCUBIO provides the most equipment options among all bioreactors and fermentors worldwide.



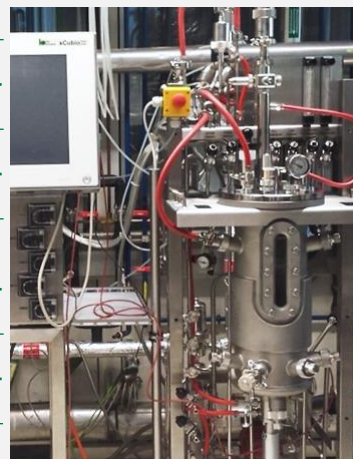
General Parameters

Design	Compact, integrated skid installation of vessel, control unit and supply technologies	
	Engineered for reproducible sterility by design	
	Complex production plants with seed- and main-fermenters, media supply vessels, CIP/SIP-supply units, steam generators – all in closed connection and fully automated	
Materials	GMP-compliant design with all options for qualified and validated operation	
	Certified stainless steel pressure vessels 1.4435/1.4571 or other	
	Stainless steel pipes and frames	
Automation	All media contact parts chemically resistant and biologically inert	
	19" touchscreen with intuitive menu design	
	Superior trend display with data analysis and visualization capabilities	
	Self-explanatory sequence editor and easy-to-handle control loops	
	Fully automated and logged sterilization sequences	
Media Handling	Bidirectional OPC-communication with SCADA-software	
	License-free remote access with VNC-client via Ethernet	
	Up to 10 peristaltic pumps	Free sizing of all pumps
	Free pump purpose allocation	Independent drive for each pump
Gas Handling	Digital or analogue drive selection	External pumps from lab to scale
	Up to 6 mass flow controllers	Rotameters for manual flow control
	Up to 4 gasses	Input pressure reducers
	Complex gassing regimes	High cell density cultivation possible



Example Configuration: Standard Minimal Setup for Microbial Application with 10 Litre Vessel

Measures (W x H x D)	1,300 x 1,900 x 800 mm		
Media Handling	5 x peristaltic pumps	3 x digital, 2 x analogue	
	For corrective media & harvest/feed	2 x AO for external pump	
Gas Handling	1 x MFC for oxygen	1 x magnetic valve for air/nitrogen	
	1 x sum flow rotameter	1 x microsparger	
Sensors	1 x temperature in medium	1 x pH in medium	1 x pressure in exhaust line
	1 x pO ₂ in medium	1 x level or foam detection	1 x foam in exhaust line
Stirrer	Top drive	Powerful servo drive	
	3 x Rushton impellers	Continuous speed control 0...1,200 rpm	
Equipment	Integrated steam generator 50 kg/h		



Options

Vessels	Double jacket steel vessels 5, 10, 20, 30, 50 litres, customized scale up to 15 m ³ on demand		
Automation	Free automation level selection from semi to fully automated process design		
Sensors	pH (2...12)	Temperature (0...130 °C)	Level/foam (on/off)
	pO ₂ (0...100 %)	pCO ₂ (0...100 %)	Turbidity inline (0...4 CU)
	Exhaust O ₂ (0...25 Vol.-%)	Exhaust CO ₂ (0...10 Vol.-%)	Turbidity bypass (0...4 CU)
	Conductivity (0 μS...2 GS)	Redox/ORP (± 1,000 mV)	Pressure (-1...+3 barg)
	Balances (± 0.001...± 100 g)	Many more! Customize ranges, media, types and scales!	

