

# Technical Specifications 5L Bioreactors



## OPERATING PARAMETERS

OPERATING PARAMETERS		5L MICROBIAL CULTURE
Agitation speed		0 - 1,500 rpm
Temperature range		15 - 45 °C ± 0.5°C
Temperature shift rate		1.0 °C / min
pH monitor type		Reusable glass electrolyte probe
pH range		0 - 14 pH
pH accuracy		0.02 pH
DO monitor type		Reusable fluorescence probe
DO monitoring range		4 ppb to 25 ppm (0 - 300 %-sat) (0 - 62.85 %-vol)
DO accuracy		1 ± 0.05 %-vol : 21 ± 0.2 %-vol : 50 ± 0.5 %-vol
DO control range		5 - 95 %
Sparge	Air	0 - 20 slpm ± 0.4 slpm
	O <sub>2</sub>	0-1000 sccm ± 20 sccm
	CO <sub>2</sub>	0-1000 sccm ± 20 sccm
Overlay	Air or N <sub>2</sub>	0-1000 sccm ± 20 sccm
Exhaust gas O <sub>2</sub>		0 - 25% ± 0.5%
Exhaust gas CO <sub>2</sub>		0 - 20% ± 5% relative
Pump style		Peristaltic (6 independent pumps)
Pump flow rates		1.8 mL/min - 220 mL/min
Scale feedback		4 of 6 pumps & reactor vessel

## VESSEL PARAMETERS

VESSEL PARAMETERS		5L MICROBIAL CULTURE
Wetted materials	Vessel	Polycarbonate
	Headplate	Polypropylene
	Agitator	Polycarbonate
Vessel dimensions	Diameter	160 mm
	Height	350 mm
Total volume		7.0 L
Working volume		1.50 - 5.0 L
Baffles		3 baffles, 20 mm width
Sparger type		Drilled pipe; 11 x 1.2 mm diameter holes
Impeller type		Rushton turbine - 2 or 3 x 60 mm
Impeller spacing (2x/3x configuration)		90 mm / 50 mm (2x / 3x)
Submerged volume (1st/2nd impeller)		1.50 L / 3.25 L
Tip speed		4.71 m/s (at 1,500 rpm)