

OVERVIEW



BIOFORS

BioTech Engineering

PLF Series...

Modular | Predesign | Configured turnkey system from research to small scale pilot production

PLF series offers you all the flexibility you need when it comes to the development and production of pilot | production-scale bioprocesses. The modular design enabling system tailored to various process and applications requiring vessels in the range from 10 L to 5000 L. The PLF is designed so that batch, fed-batch and continuous cultivation strategies such as chemostat or perfusion processes can be carried out or further developed at the highest level.

PLF series is a modular, predesigned and configured turnkey system incorporates the most commonly required functions and latest technologies. Quiet, user friendly and cleanroom-compatible operation. It is made to cater wide range of applications in cell and bacterial applications. It can be sterilised (SIP) and cleaned (CIP) in situ. The CIP option is either permanently installed or available as a mobile CIP unit.

Key of Features

- Various vessels selections from 10L to 5000L of total volume
- In-situ sterilizable, high efficiency, and high accuracy design
- Excellent for microbial fermentation and enzyme bioconversion
- Suitable for special culturing processes such as tissue culture, animal cell culture, insect cell culture (with optimal add-on devices)
- Open frame design providing ready access for operation and maintenance
- Splash-proof control cabinet
- Inclusive powerful PC with 17" TFT color LCD panel which run a C-Bio software for digital control and measurement of the hardwares.

Ideal For

- Microbial culture growth (bacteria, yeast and fungi)
- Cell culture growth (animal, insect and plant cell)
- Transition from shake | tissue culture flask
- Production, research and education



BIOFORS is your specialist for bioreactors. You benefit from high quality, innovation and flexibility systems, in which your cell lines or microorganisms develop their full potential in a reproducible way, thus contributing to your success.

Biofors Pilot Fermenter [PLF-Series]

Culture Vessel

Vessel configuration	10L ~ 5000L
Working volume	[3 - 10L] ~ [500 - 5000L]
H/D ratio	2 : 1 3 : 1
Materials	SS316L main vessel SS304 jacketed vessel Chlorine free ceramic wool with SS304 sheath FDA approved & elastomero
Vessel design	Flat flange top head plat c/w lifting lugs, fastened with C-clamps and sealed with O-ring
Temperature	150 °C (vessel) 150 °C (jacket)
Pressure	3 barg/vaccum (vessel) 4 barg/vaccum (jacket)

Stirrer System

Impeller	2 Roshton Impeller + foam breaker
Optional impeller	Marine Blade Pitched Blade Spin Filter Cell Lift Packed-Bed Basket
Stirrer drive	IP54 top driven geared motor, mechanically coupled
Seal Type	Double mechanical seal with condensate lubrication
Speed range	50 ~ 500 rpm

Aeration System

Aeration rate	1.5 vvm at 1 barg overpressure
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pH Control System

Measurement	pH probe (Mettler Toledo or equivalent)
Type	Gel type, In-situ sterilizable
Range	2 ~ 12 pH
Controls	Acid and alkali at peristaltic dosing pump
Feature	Automatic on/off with input volume function

DO Control System

Measurement	DO probe (Mettler Toledo or equivalent)
Range	0 ~ 200%
Controls	Anti-foam peristaltic transfer pump

Foam Control System

Measurement	Foam detector (Bioforce)
Type	Conductivity, In-situ sterilizable
Controls	Foam detector

Temperature Control System

Type	Closed pressurized circulation system
Temperature range	10 ~ 150°C
Sterilization temperature	30 ~ 121°C
Equipments	Circulation pump Heat exchanger Control valves
Features	Automatic sterilized as filled via heating/ cooling jacket via direct steam

Peristaltic Pump

Pump Head	Watson Marlow or equivalent
Unit	5 unit
Controls	acid base anti-foam feed other

Local Control Unit

Equipment	Graphical touch screen user interface with 17" colour display
Functions	Measurement Controls Callibrations Data logging
Accessories	Stainless steel cabinet
Software	C-BIO software package operated on Microsoft Windows XP
Features	Powerful visualization software for process visualization, data acquisition and trend display