

**FOGALE** nanotech

# biopod c2000

PROCESS DEVELOPMENT & OPTIMIZATION  
CELL LINE AND STRAIN CHARACTERIZATION  
PROTEIN PRODUCTION & CELL EXPANSION

WITH THE **biopod** series



## ***Multi-Bioreactor platform***

2 bioreactors, each with 800 ml working volume  
Online monitoring and control of T°C, pH, DO, viable Biomass  
Parallel advanced control of process  
Perform any culture mode: batch, fed-batch, continuous and perfusion

# biopod c2000 - Specification

<b>Control unit</b>	Dimensions ( H x L x P ) / Weight	625 x 390 x 370 mm / 35 kg (70 Lbs.) Process variables monitoring, pumping, mixing gaz, control and supervision
<b>Bioreactor support</b>	Number of bioreactor per socket Dimensions ( H x L x P TBC) Functions	1 or 2 (800 ml) 180 x 130 x 200 (for 2 bioreactor control) Thermal control Temperature control with Peltier stability 0.1 °C
<b>Power supply</b>		110-230 V ac / 200 W
<b>IP classification</b>		IP65 working area
<b>Connexion to fluids</b>		6 mm external diameter, quick connector Gas : Air, Oxygen, Nitrogen 1 bar nominal pressure
	Pressure	
<b>Regulation loops</b>	Type and modes	T°, pH, pO <sub>2</sub> , Anti-Foam, gas mixing station for 4 gas Improved PID on T°, PID on pH (3 modes acid, alkaly, acid+alkaly), PID on pO <sub>2</sub> , O <sub>2</sub> flow profile from Biomass signal PID on each gas control loop
<b>Temperature probe</b>	Range, noise (10 Hz), repetability	0 / 65°C , 0.003 °C rms, +/-0.05°C
<b>pH electrode</b>	Range, repetability, noise (10 Hz)	0-14 pH, 0.01 pH, 0.0007 pH rms
<b>Dissolved oxygen probe</b>	Range, electronic repetability	300 % air saturation (or 1600nA from probe), 0,01%
<b>Anti-Foam</b>		Up to 100mS/cm
<b>Biomass control</b>		Biomass capacitance technology
<b>Aux. inputs</b>	Per bioreactor	4 analog, 2 digital
<b>Aux. output</b>	Per bioreactor	4 analog, 4 digital
<b>Pumps</b>		Up to 6 pumps (30 ml/min, up to 450 ml/min) - modular set-up Two speeds selectable, involved in loops, Pseudo continuous flow rate by pulse modulation
<b>Connexion</b>	Ethernet, USB 2.0	
<b>SCADA software</b>	Integrated in the control unit Storage of culture parameters, supervision and culture recipe Web server for remote control 3 access levels : Viewer, Operator, Programmer	B.O.S.S. View software

## B.O.S.S. View (Bioreactor's Operation & Supervisor System view) specifications

- Parallel process control system for up to 2 fermentors
- Independent monitoring for each culture
- Data acquisition, display and recording
- Integrated recipe management
- User management with access control and automatic logout
- Configurable online charts feature zooming and scrolling
- Online changeable controller parameters
- Data export and support generation in CSV and XML file format
- Remote access via Ethernet network
- Alarm management via email
- Metabolic activity monitoring and feeding



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