

# BIONEER

## Desktop Intelligent Bioreactor



### Highly effective aeration and stirring

Bioneer can realize certain sterility and highly effective aeration and stirring by high power agitation motor, powerful magnetic bottom drive and specially designed impeller. Bioneer-N corresponds incubation of high viscosity range and animal and plant cell culture by adopting the mechanical seal and small size high torque motor. The direct drive agitation mechanism realizes compact shape and easy handling. Unique designed impeller (retrogression paddle impeller).

Fullzone is the most suitable for high viscosity range culture and obtain high  $K_La$  and homogenization with low shear stress. It is ideal for production of antibiotic and bio-polymer and for animal and plant cell cultivation.

### For new biotechnology age, standard bioreactor BIONEER

In these days, "Biotechnology" plays a more important role in human life. It is required flexibility and expansibility to researcher's various requests. Bioreactor is demanded harmoniously with remarkably evolving information technology. And it should be very easy to use anyone and be excellent in operativity. We, B.E. MARUBISHI propose the user-friendly desktop intelligent bioreactor which can clear the strict conditions for the new biotechnology age.



### Compact Bottle Stand

Reagent bottles can be set into an autoclave together with the vessel by special designed bottle stand. The bottle stand with bioreactor vessel can be set into standard vertical type autoclave (ID > 32 cm). Vessel size: 1, 2, 3, 5 L: 4 bottle stands. Vessel size: 7.5, 10 L: 3 bottle stands.

### 6 Vessel sizes

Six kinds of different size vessel are available [1L (only-magnetic driving system), 2, 3, 5, 7.5, 10L] as standard models. A different size of vessel is interchangeable on the same console as shown below.

Combination 1: [1, 2L].

Combination 2: [3, 5L].

Combination 3: [7.5, 10L].

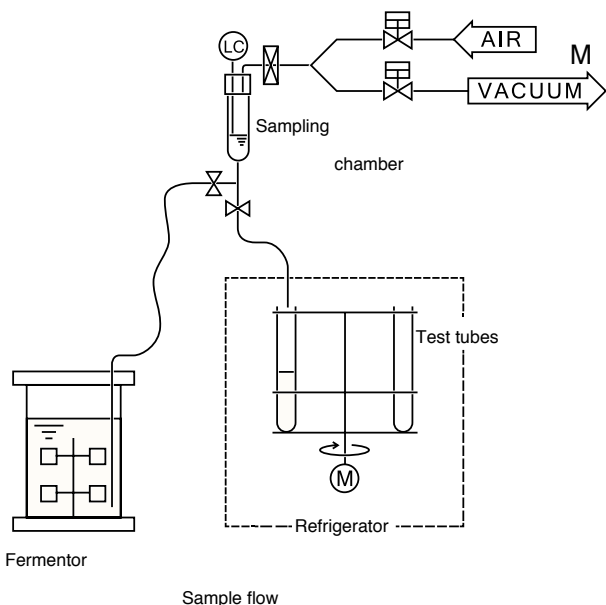
The material of standard vessel is made of PYREX® glass and stainless steel. The other material can be selected according to the purpose for which the bioreactor used (Whole stainless steel, titanium and stainless steel with PTFE coating, etc.)



# OPTIONS

## Connection to auto sampling device

Compact auto-sampler Collectcool releases you from over-night and holiday sampling work. The sampling time can be set up on the graphic panel.



## Features

Simple piping of PTFE tube gets rid of broth residue. The sampling chamber and level sensor system ensure quantitative sampling. The pneumatic pinch valve refrains from contaminating the process. The special pumping mechanism gets rid of cell disruption or damaging a tube. The sample volume is adjustable. A desk-top refrigerator cools down the sample rapidly to store. Our unique covering mechanism prevents the sample from evaporation. Compact design saves your experiment space.

## Automatic sampling system for desk-top fermentor collectcool

The Collectcool will take sample automatically during your desk-top fermentation experiment even in overnight or holiday running.

## Specification

**Number of sampling :** 16 times.

Time setting : Day of the week and time for module type/  
Elapse time in hours with MDL-8C.

**Maximum setting time :** 7 days (168 hr) for module type/  
99.9 hours with MDL-8C.

**Minimum setting time :** Minute (000h: 00m) for module type/  
0.1 hour with MDL-8C.

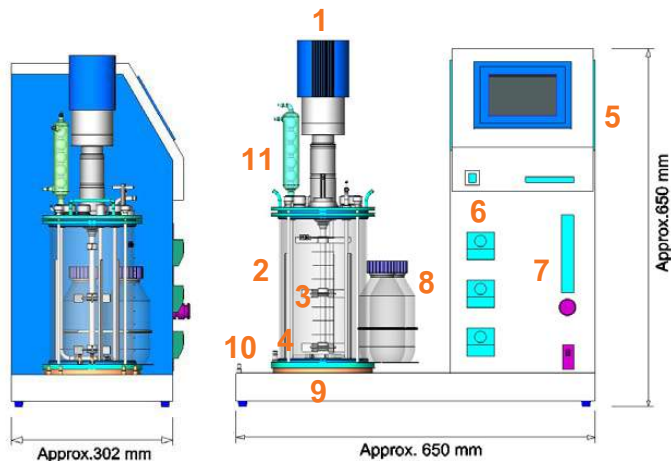
**Minimum interval time :** 5 min.

**Sampling volume :** 3 - 18 ml.

**Size :** Control box H291, W204, D352 module type refrigerator  
H538 x W440 x D306



# Standard Specification (BIONEER / BIONEER-N)



- 1 Servo Motor
- 2 Glass vessel
- 3 Impeller
- 4 Air sparger
- 5 Control panel
- 6 Peristaltic pump
- 7 Air Rotameter
- 8 Addition bottles
- 9 Heating plate
- 10 Water in/ out
- 11 Condensor

MODEL (Bioneer / Bioneer-N)	100	200	300	500	750	1000
Vessel Material	Borosilicate Glass PYREX® SUS304					
Vessel Total Volume (L)	1	2	3	5	7.5	10
Vessel Working Volume (L)	~0.8	~1.6	~2.4	~4	~6	~8
Vessel Inside Diameter (mm)	95	114	133	153	173	190
Vessel Depth (mm)	158	193	228	262	312	350
Fermentor Head Plate (ports)	6		8			
Heater Capacity (W)	160		220		300	
Range of Temperature Control (°C)	Water Temp. +5°C~50°C					
Agitation Speed (rpm)	100-1000		100-900		100-800	
Aeration Rate (Sl/min.)	0.2~2		0.5~5		1~10	
Driving System	"Magnetic Bottom Drive / Top Drive, Mechanical Seal"					
Dimension (Console) [W x D x H] mm	650 x 302 x 650 / Motor Not Included					
Components	6-Bladed Turbine Impeller (2 pcs.) Mechanical Foam Breaker (1 pcs.) Baffles (3 plates) Filters (2 pcs.) Sparger Pipe (Horseshoe) Triple Port Sampling Port pH Electrode Port DO Electrode Port Thermo-resistance Bulb Port (Pt100) Rotameter for Air Exhaust Condenser Fixed Speed Pump (2 pcs.) for Acid and Base					
Optional	Fixed Speed Pump (2 pcs.) for Anti Foam and Feed Medium Level / Foam Sensor					
Utility Requirements	Air / Gas (2 bar) Water (2 bar)					
Motor (W)	60 / 200		180 / 200			
Power Source (V.)	220V AC, 50 Hz					