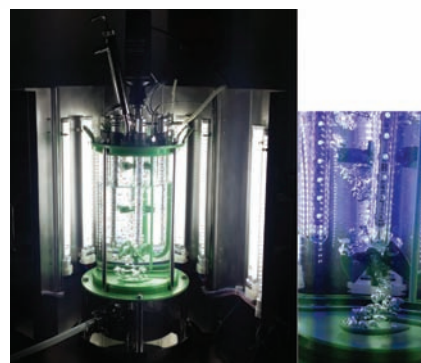
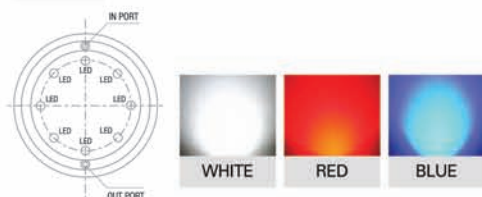


Autoclavable Fermentor

Bio-Master PB Photo Bioreactor

1.5L~10L
Vessel

Volume : 1.5L ~10L
Temp : Ambient +3°C~80°C
Illumination : 430nm, 680nm, WHITE LED



These days, lots of studies demonstrated that ordinary plants could be grown by Light Emitting Diodes instead of sun light. LED are very small semiconductor chips generating light when power supplied.

The elements of diode determine the light spectrum emitting, these solid state devices have been progressed over the years. And now, it has greatly improved light intensity and specific wavelengths. Light power and spectral composition, temperature and aeration gas composition can be set control.

Features

- Intelligent 7" wide touch screen fermentation controller
- Self data logging system within fermentation controller
- LED illumination with Full spectrum imitates natural sunlight as closely as possible by emitting light peaks at 430nm and 630nm, without NDIR and ultraviolet spectrum components
- Parallel design of vessel and controller : 4 peristaltic pump and pH, DO, foam, temperature sensor port
- Remote control by PC software Data Logging system
- Easy to calibrate temperature, pH, DO, foam sensors using graphic calibration mode
- Intelligent self diagnostic system to maintain fermentation process from start to the end
- Programmable multi stage operation : Setting pH, DO, Foam, temperature for each stage to the end of the fermentation process
- Easy control of external device by fermentation controller : O₂ / CO₂ analyzer, glucose analyzer, spectrophotometer, fluorescence spectrophotometer, NIR, gas mixer, level, weight, etc
- Accurate PID temperature controller system

Specification

Agitation	Drive	Top drive motor(mechanical drive)
	Range	50~1,200 rpm
	Impeller	2-Rushton turbine impeller
Temperature	Range & Sensor	Ambient + 3°C~80°C RTD(Pt-100), PID control
Aeration	Sparger & Gas mode	Ring sparger, 2gas with CO ₂
Exhaust system	Filter & Condenser	0.2µm air filter cartridge, SUS 316
pH	Range	2.0~12.0 pH of set point, PID control
	Electrode	Gel Type
DO	Range	0~200%, PID control
	Electrode	Polarographic Type
Anti-foam	Electrode	Conductivity Type
Peristaltic Pumps	Control	4 constant speed pumps each assignable to a wide variety of function for control of acid, base, foam and feed
Recording		pH, DO, Temp, Foam, Agitation, Peristaltic pump, etc.

■ Please note that technical specifications subject to change.

Bio-Master

Plate Photo Bioreactor

20L~
100L

Vessel

Volume ; 20~100L
Illumination : 430nm,
680nm, WHITE LED
Temp, pH, DO

Specialized in chlorella, ocean-bio industry

Using for producing clean fuel

Photosynthetic microorganism cultivation

Algae are a natural renewable resource of unique products, Microalgae require only sunlight, carbon dioxide, phosphor and nitrogen to grow rapidly. They produce a broad variety of basic chemical substances such as vitamins, fatty acids and carotenoids with high added value potential for the pharmaceutical and food industries.

Plate photobioreactors have received much attention for cultivation of photosynthetic microorganisms due to their large illumination surface area. Plate photobioreactors are very suitable for mass cultures of micro algae, developed by using thick transparent PC materials.

Features

- Able to measure precise growth of biomass
- Sensor monitoring in real time
- Innovative offering light source for photosynthesis
- Controlling system for adequate light source
- Easy scale-up
- Various type of photo bio reactor (flat, α -type, pipe and etc)

Specification

Total volume illuminated	20 L	100 L
Sterilization autoclave	possible	possible
Photosynthetic module	plate	plate
Illumination unit	430nm, 680nm, WHITE LED	430nm, 680nm, WHITE LED
Illumination control	dimmer	dimmer
Illumination	control	control
Air Flow rate	5 l/min	20 l/min
pH-Value	measurement & control	measurement & control
pH-Control	CO ₂ Gas	CO ₂ Gas
Temperature	measurement & control	measurement & control
Optical density	turbidity sensor	turbidity sensor

* Please note that technical specifications subject to change.

