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HOLVES

FERMENTOR

Cla210

Laboratory
Classic Fermentor



THANK YOU VERY MUCH FOR YOUR TRUST AND SUPPORT TO HOLVES
WE ARE PLEASED TO PROVIDE YOU WITH INFORMATION ABOUT THE EQUIPMENT DEVELOPED AND MANUFACTURED BY BEIJING HOLVES BIOTECHNOLOGY CO.,LTD

CLASSICS

Dainty
Practical
Multiple System.

Classic | Dainty | Multiple System

Fermentor Cla210 is a classic and standard system developed by HOLVES for laboratory users. Cla210 adopts the latest design language and modular design concept, which is suitable for the design requirements of multiple working conditions in the laboratory. Absorbing foreign sophisticated design concepts, the product is small in size. And it is painted in classic white, with a novel appearance and a strong sense of design. The series adopts imported glass rotor flowmeter, high-precision flip pump and bus control communication method, which greatly improves the precision and stability of the equipment.

Cla210 adopts a deep modular process design language, an all-in-one structure of the vessel and the control unit, which makes overall space small. All kinds of weak wires are short and easy to install that can be quickly put into laboratory use. The compact size is especially friendly to female users. The modular design concept makes the Cla210 series the best presentation for multiple fermenters. By building blocks, it can easily realize double, triple, quadruple,quintuple, sextuple, and more combined vessel systems. The system can be used separately or in a unified way, which is very adaptable to users and scenarios with different needs.

Since its launch, Cla210 has gradually replaced the company's previous models and become the most popular product for clients based on feedback.



Second Generation GUI

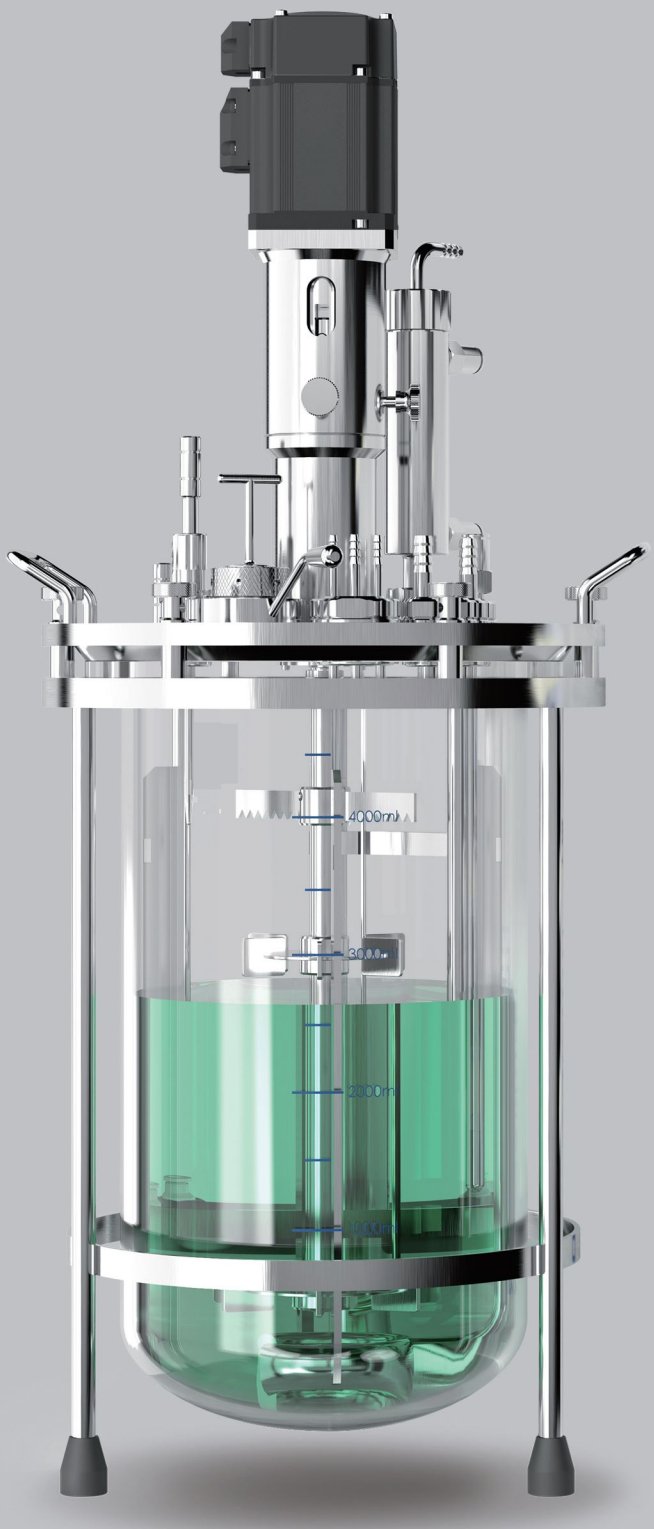
- Updated second generation GUI, Industry-leading design
- Digital dynamic dashboard: dynamic changes of fermentor are apparent to the eye
- Detailed design, Bright colours, Quick and simple operation
- Excellent functions

All-round Control Unit

- Standard independent cold water control system, Imported CPC self-locking joint
- Wrap-around control cabinet
- Solid and removable base for flexible table placement

High-precision Flip Pump

- Simple to use, strong stability
- Suitable for multiple sizes of silicone tubes, flow rate up to 326.55ml/min
- Customizable and Interchangeable pumps including FOAM, ACID, BASE, FEED



Comparable to Imported Manufacturing Process of Vessel

- The design ideas of vessel derived from Sartorius and Applinkon, Replaceable vessel
- Stable air-tightness, Convenient for laboratory operation with quick disassembly and assembly
- Stainless steel material of AISI 316L with fine grinding and electrolytic polishing. The overall manufacturing process is comparable to imported products from abroad.

Smallest Cla-M Controller

- Integrated cold water temperature control of independent vessel and condenser
- One of the smallest cabinets in the industry to date
- Glass rotor flowmeter can be upgraded to 2~6 channels
- Built-in HF-Control V2.2 control software: online monitoring, recording and curve displaying
- Available for external data communication of OPC XML DA via Ethernet

Component Brands

Reliable components are the guarantee of product durability, the key components of Cla210 series are selected from domestic and foreign first-line brands. Our suppliers include: SEMENS, METTLER TOLEDO, SCHNEIDER ELECTRIC, Dwyer and other partners, Holves truly accomplish quality control from the source.



S/N	NAME	Technical Parameters
		* refers to features and key functions for HOLVES fermentor Cla210
01	Vessel	* Full volume: options include 3L, 5L, 7L, 13L. No need to replace the controller ○ Liquid volume: Max. 80% ○ Design pressure: Max 0.15Mpa ○ Glass vessel: high temperature resistant borosilicate glass ○ Fermenter lid: AISI 316L with fine grinding and electrolytic polishing * Fermenter lid inlets: Air inlet, four-in-one feed inlet, temperature tube, cooling coil, pH/DO electrode inlet, feed inlet, alternate inlet, offgas condenser(detachable), harvest tube, defoamer electrode port
02	H-Mix® stirring system	○ Servo motor with high precision and low noise. Special mechanical seal ○ RPM: 0~1000rpm ±1rpm * Innovative no machine seal design, the first in the industry, for a cleaner and more hygienic stirring system ○ It can be used without installation * Smart-SC® intelligent smooth control, adjustable mixing parameters within a customizable time period
03	Air inlet system	○ Air inlet: Air, quick disassembly structure * Imported thermal mass flow meter ○ Annular gas distributor, optional microporous bubble distributor
04	pH	○ Range: 2.00~12.00pH, precision: ±0.02 ○ Sterilization temperature: 0~140°C * Controllor: HN-K integrated transmitter with filter, signal isolator and RS-485 communication * Association setting: pH is automatically associated with acid-base pump, dead zone customization * Smart-SC® intelligent smooth control, custom time period regulation of pH
05	DO	○ Range: 0~100% O2 saturation, precision: ±0.1% ○ Sterilization temperature: 0~140°C * Controllor: HN-K integrated transmitter with filter, signal isolator and RS-485 communication * DO and stirring, replenishment multi-stage cascade regulation, to ensure sufficient gas output during the experiment * Custom time period regulation of DO
06	TEMP control system	○ Electric heating mode of thermal blanket and cooling water to dual temperature control ○ 24V safe voltage ○ Temperature control range: Cooling water+5°C~65°C ±0.1°C ○ Temperature sensor: Imported PTI00 platinum electrode(quick disassembly resistant to high temperature) ○ The cooling water system is controlled by the integrated Cla-M controller, which communicates with the host PLC and the solenoid valve controls the on/off * Cooling water connector adopts imported self-locking fast interface, the interface contains self-locking valve * Temperature value can be adjusted as needed at any time

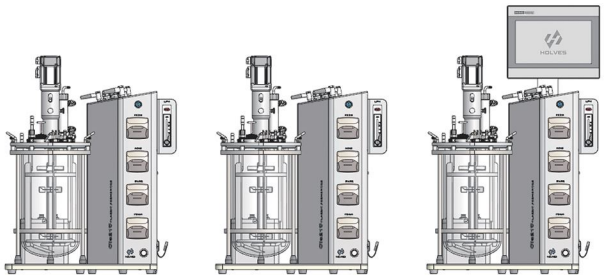
S/N	NAME	Technical Parameters
* refers to features and key functions for HOLVES fermentor Cla210		
07	Peristaltic pump	○ 4 channels peristaltic pump including FOAM / FEED / ACID / BASE * High-precision Flip Pump with variable speed, quick connection ○ Suitable for multiple sizes of silicone tubes, flow rate up to 326.55mL/min * Peristaltic pump: Accumulated flow, instantaneous flow, speed adjustment, 100% adjustment, associated PID adjustment, manual control and other functions * The new feed-sup® feed supplement system: support direct, timed, exponential and equation replenishment * With Smart-SC® intelligent smooth control can be adjusted at any time according to the needs of the supplement parameters
08	Defoaming system	○ Mechanical defoaming paddle with rake and compression ○ Defoamer: Flow addition by peristaltic pump ○ High-sensitive defoaming electrode
09	Sampling	○ Sterile sampling system: autoclave sterilization ○ Syringe negative pressure design: remove bacteria contamination during sampling
10	Cla-M Controller HF-Control v2.2 control system	○ 10 inch HMI touch screen, brightness>350 cd/m^2 ○ The second generation graphical interface makes the experiment parameters clear at a glance, realizes Data and information visualization, information charting, better human-computer interaction, and more convenient experiment operation ○ Siemens SIMATIC - Smart Series processor ○ Low voltage electrical appliances use schneider and other international well-known brands * HF-Control V2.2 embedded control software configuration for full local operation ○ pH / DO / TEM / FOA can realize automatic and manual control ○ Curve display, historical data records and USB export functions of RPM / pH / DO / TEM * Meta-Tri® audit trail Exclusive developed system can automatically store operation records. Experimental process can be tracked. ○ Real-time protection of experimental data, advanced permissions can restrict export and deletion to prevent data breach. * It can be used with the Analysis software HW-Analysis V1.0 * External OPC XML DA via Ethernet data communication * Extensible: glass rotor flowmeter of 2~4channels, balance, external peristaltic pump, etc.
11	Multi fermentors extension	* Multiple system expansion of 2-8 fermentors * Local HMI centralized control ○ Multi-fermentors adopt network cable bus communication mode
12	Power	○ Input: AC110~240v/1.2kw ○ Output: Motor, thermal blanket, peristaltic pump and other power parts use 24V safety voltage

Multiple Fermentors

Cla210 has been deeply integrated with the modular design concept from the beginning of its design. Its compact size makes it easy to implement the multiple fermentors strategy. The most advanced BUS wiring system is also adopted in the process of automation research and development.

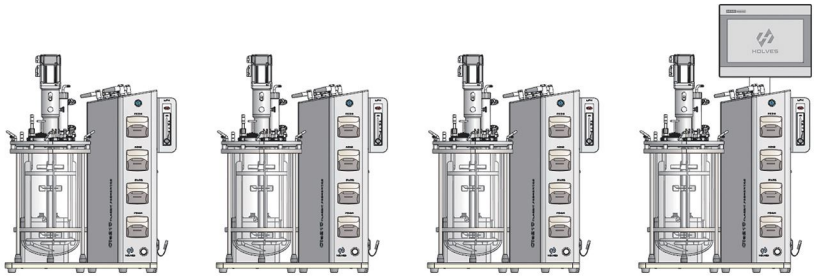
Each product of Cla210 is equipped with a local touch screen HMI which is an independent fermentor for standalone use. And apart from HMI, it is a host system matched on site. Multiple fermentors can be connected to a local HMI, which can realize multi-connection. The multi-use scenarios and adaptability of customers have never been easier.

3#



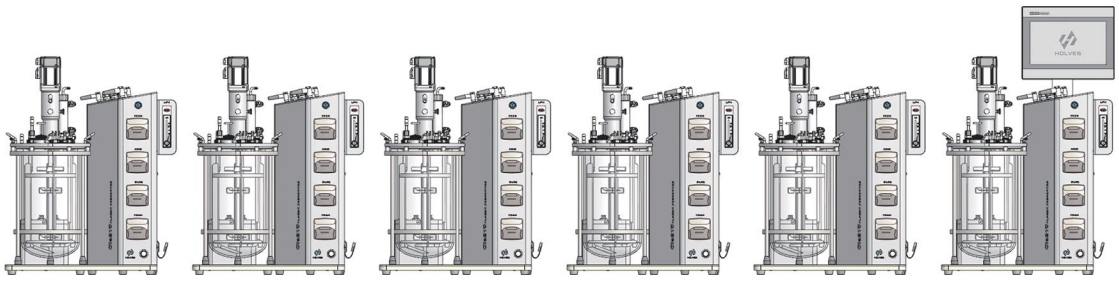
F03 F02 F01 Master Control

4#



F04 F03 F02 F01 Master Control

6#



F06 F05 F04 F03 F02 F01 Master Control



HMI 15'

15 inch large screen controller

The parameter monitoring electrode line of each vessel is connected to the chassis, and a switch is placed to connect each chassis through a network cable for data transmission and control. One of the chassis is equipped with a 15-inch HM for total control, which can easily realize a multi-parallel system.

Functional modular design

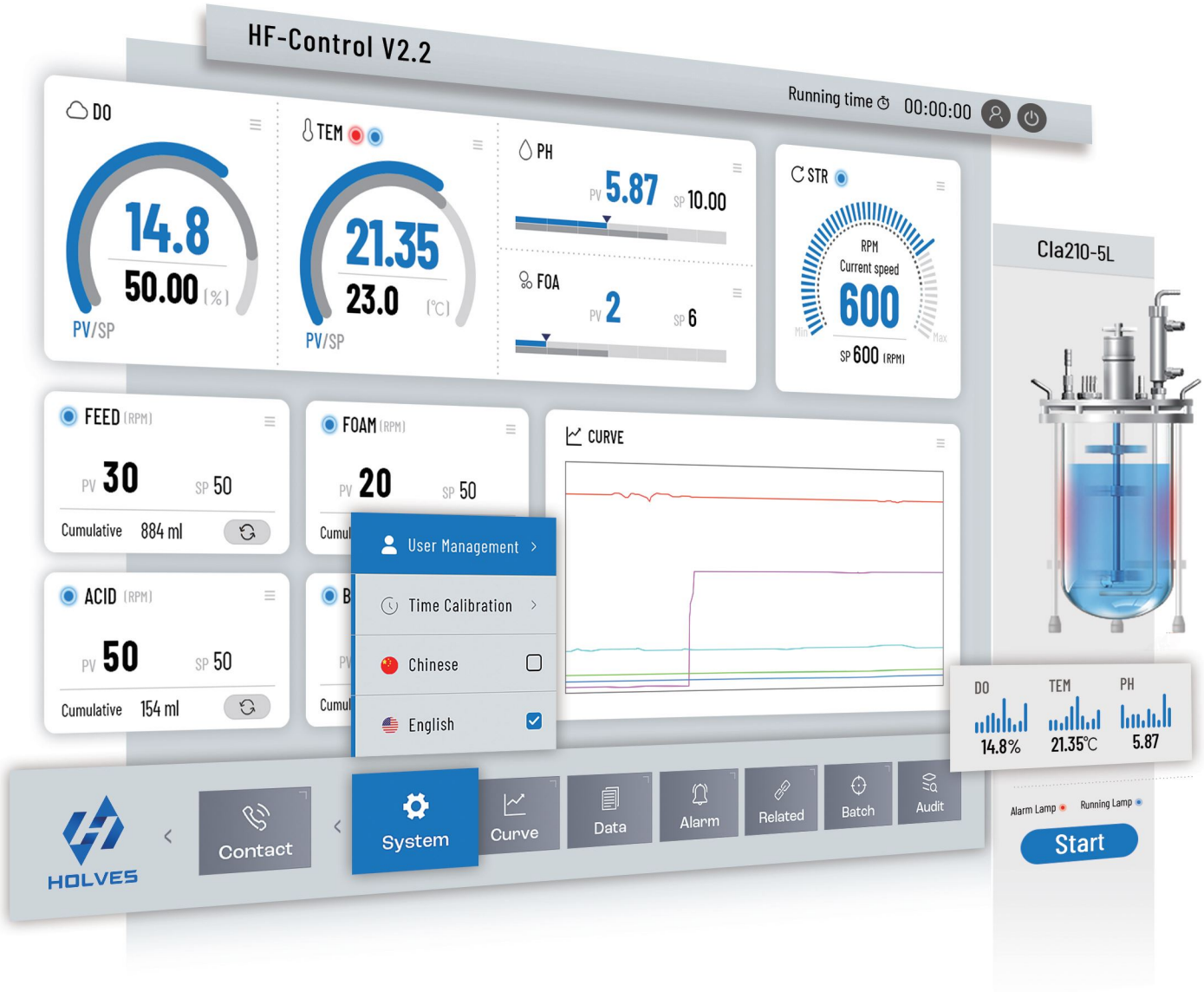
The Cla multi-parallel system is similar to building blocks. Combine function templates with chassis and vessel. Satisfy the diverse needs of users to the greatest extent possible.

Bus wiring system

The whole equipment adopts bus-type wiring to exchange data, and the data is directly and quickly transmitted to the destination chassis through the bus series connection, and the efficiency and safety of data transmission are very high.

Single vessel&multi-parallel vessel interconversion

The Cla series can be used separately and controlled flexibly. Realize interconversion between single vessel and multi-parallel, which is very adaptable to users and scenarios with different needs.



Second Generation GUI

Since the creation of the first-generation GUI, Holves has received many feedback from customers, with comments on aesthetics, ease of use, and more. In 2022, By the improvement of the usual GUI design features of the fermentor, Holves works with a professional graphic design team combined with users' feedback to create the second generation GUI with visual impact and practicality.

The second generation GUI uses the latest dashboard design language to update the dynamic numbers and graphics that users care about most. The user can observe the key data in the fermentation process at a glance by looking at the digital panel, without entering the secondary interface. Animations and dynamic presentations are made for graphics, which tend to be more flexible and intuitive. With the second generation GUI, the user can grasp accurately the parameters and status of the fermentors, thus making rapid decisions.

GUI created by the professional design team has both a sense of design and practicability. The data and operations that users care about are convenient and easy to identify, enhancing familiarity and efficiency.

Sort out the layout logic from the perspective of user needs Build a truly usable operating system

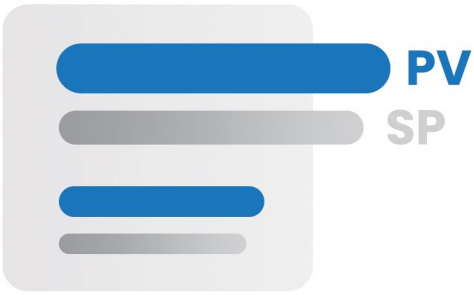
Data visualization

Dashboard display of important data, animation display of vessel status, including stirring, heating, defoaming and other working state.



PV/SP values are displayed on the same screen

It is extremely important to observe the parameters of fermentation process, PV/SPER display is more convenient for users to control the information change and give the setting solution in time.



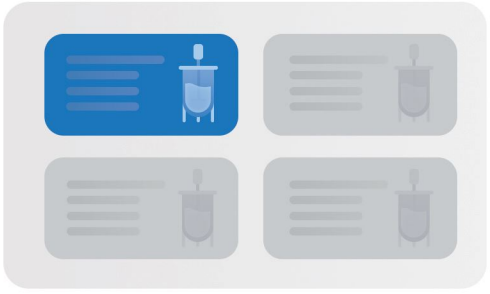
Complete functions

HF-Control v2.2 system has comprehensive functions, can set administrator rights, switch main language, support USB data export, support curve data, alarm, association and other operations.



Multiple system interface

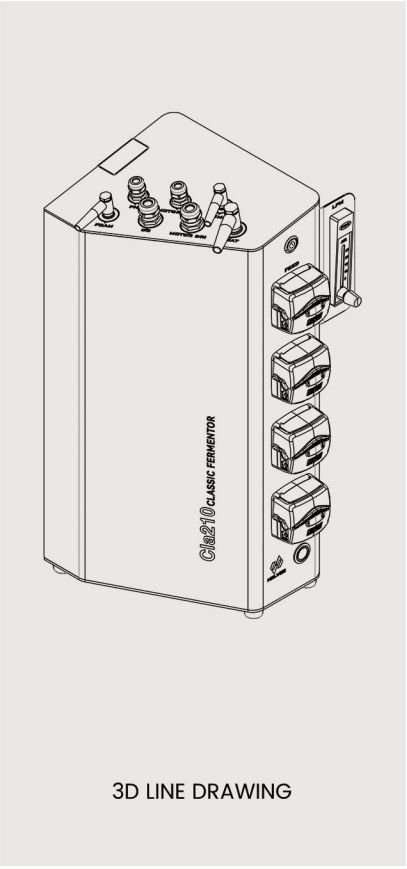
Cla series supports flexible exchange of single vessel and multi-parallel. When users use the multiple system, the operation interface will be changed synchronously according to the number of vessels, and the vessel data will be displayed on the same screen, which is convenient for users to operate in a unified manner.



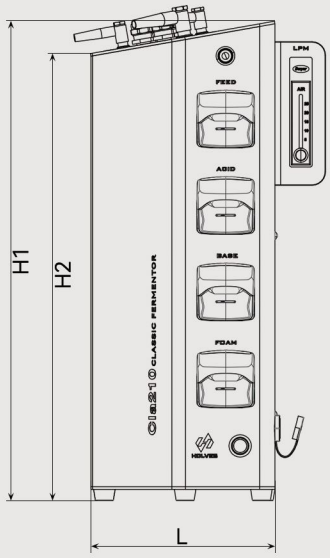
Compact & Powerful

The Cla210 series follows the concept of deft design. After calculating the internal structure in detail, engineers reduce the size of the chassis by more than 20% to achieve a compact and comprehensive characteristic. The height of the main control box is only 54cm, with a modular design, it is an integrated structure with the tank body, and the overall occupying space is small, which is in line with the market. Compared with other laboratory fermenters, the volume advantage is obvious.

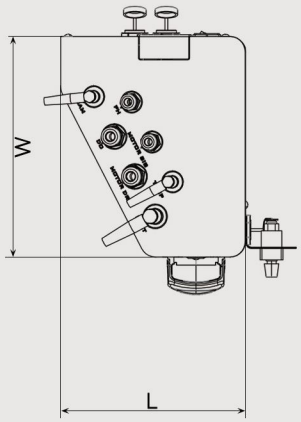
Exquisite and compact at the same time, taking into account the powerful functions. The whole series adopts imported glass rotor flowmeter, convenient and quick clamshell peristaltic pump and bus control the communication mode, which greatly improves the precision and stability of the equipment.



3D LINE DRAWING



FRONT VIEW



TOP VIEW

External dimensions of the chassis

	Size(cm)		Size(cm)
L	21cm	H1	54cm
W	24cm	H2	50cm



Novel modeling

The equipment is painted in classic white, and the appearance is bold and irregularly cut, which is full of design.

Compact size

The chassis is small in size, saves space, and all kinds of weak wires are short and easy to install, which can be quickly put into laboratory to use.

Automatic control

One-click to start fermentation, highly automatic control, saving time.

Strong stability

Parameter correlation regulation to keep the fermentation environment stable.

All-round control software

Built-in HF-Control v2.2 the latest control software, can implement multiple data monitoring.

External communication

It can be external connected with OPC XML DA via Ethernet data communication.

HOLVES

HOLVES
After-Sales Service

AFTER-SALES SERVICE COMMITMENT

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After-Sales Service

Timely Response
Service

Lifelong Support
For Software Upgrade

After-Sales Service
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HOLVES IS COMMITTED TO PROVIDING PROFESSIONAL EQUIPMENT AND SERVICES IN THE FIELD OF BIOENGINEERING.
IN ORDER TO CREATE A NEW GENERATION OF FERMENTOR, HOLVES WILL PROVIDE THE MOST PERFECT AFTER-SALE SERVICE FOR THE CUSTOMER IN THE INDUSTRY.
WE HEREBY MAKE THE ABOVE COMMITMENTS.