



HCP-188W

Water Jacketed CO₂ Incubator

Scope of Application:

A water-jacketed CO₂ incubator is a laboratory culture device specifically designed for culturing cells and tissues. It is widely used in fields such as cell biology, molecular biology, immunology, bioengineering, and drug development. Its excellent heat preservation performance and temperature control ability make it especially suitable for applications in the fields of assisted reproduction and genetics.

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Innovative Design

● To cultivate with a high survival rate

Accurate control of temperature and concentration to optimize the cell growth environment.

● A more reliable environment

Multiple air circulation filtration technology creates a Class 100 clean environment inside the cabinet.

● Full process monitoring

A comprehensive and improved safety alarm system.

Water level alarm inside the box, audible and visual alarm reminder; Temperature, CO₂ concentration, O₂ concentration exceeded alarm level and door open timeout and other alarm functions; Optional IOT.

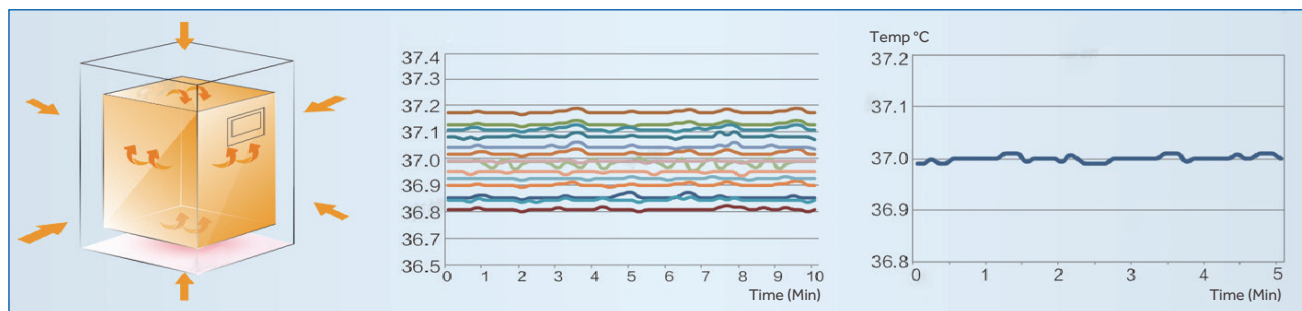
Product Advantages

Optimize the cell growth environment and precisely control the temperature and concentration.



Precisely control the temperature to safeguard the experimental results

Based on the principle of fuzzy PID control, using water jacketed heating and outer door heating, the temperature is precisely controlled within the fluctuation range of $\pm 0.1^{\circ}\text{C}$, and the temperature uniformity is $\leq \pm 0.2^{\circ}\text{C}$ to ensure the normal growth of cells throughout the life cycle.



Schematic diagram of water jacketed heating and outer door heating

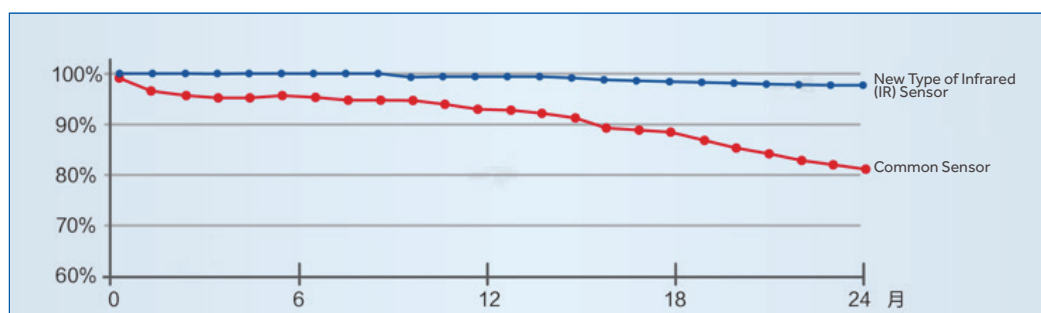
The uniformity of 27 test points is less than $\pm 0.2^{\circ}\text{C}$

The fluctuation degree at the center point is less than $\pm 0.1^{\circ}\text{C}$



Precise CO₂ concentration control, no calibration required for daily use

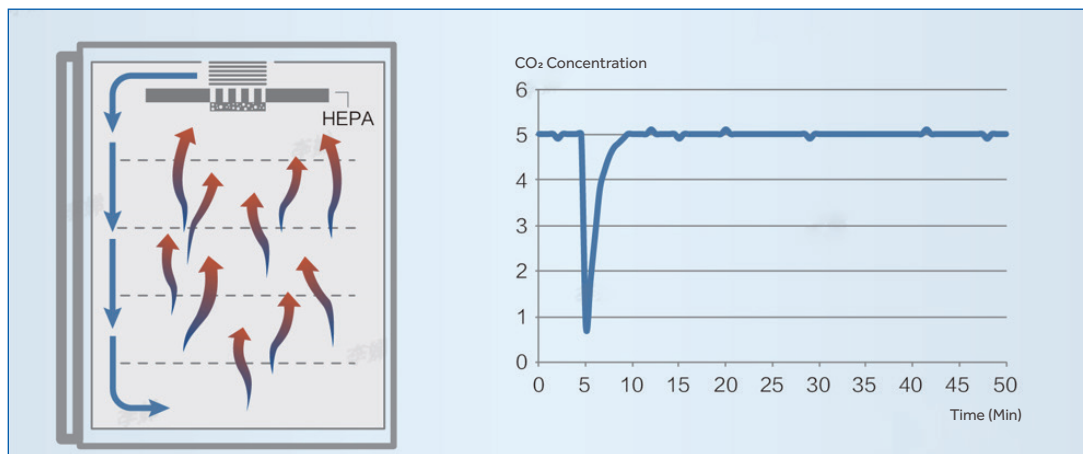
- Using a new type of IR sensor that can withstand high temperatures of 100°C , based on the NDIR measurement principle, and using a silicon MEMS emitter with a service life of up to 15 years.
- With built-in temperature and humidity compensation to reduce the influence of humidity and temperature, no need to recalibrate after high-temperature sterilization.
- Using five-point calibration has higher measurement accuracy, sensitivity, accuracy, and small drift, and the measurement offset is less than 0.3% within 2 years.





The rapid recovery system of the environment inside the cabinet

Using active airflow control technology, based on the principle of fuzzy PID control, after opening the door for 30 seconds, the CO₂ concentration can quickly return to the set state within 3 minutes. Even if multiple people share one CO₂ incubator and open and close the door frequently, it can still ensure the stability and uniformity inside the cabinet.



A schematic diagram of the purification airflow

The CO₂ concentration recovery curve (with the door open for 30 seconds)



Precise O₂ concentration control to meet more incubator requirements (optional)

Using a ZrO₂ sensor to achieve control of the oxygen concentration, with an oxygen control range of 1 to 21% and a control accuracy of 0.1%. After opening the door for 30 seconds, it only takes 12 minutes for the O₂ to recover to 5% and 24 minutes to recover to 1%.

A Class 100 clean environment inside the cabinet



Multiple air filtration technologies with a filtration efficiency of up to 99.99%

- The HEPA filtration system ensures that the air quality inside the enclosure reaches Class 100 within 5 minutes after the door is closed.
- The inlet filter can capture particles larger than or equal to 0.2um with a filtration efficiency of 99.99%.



The real-time air purification circulation system inside the cabinet

The three-layer thermal stability design of the water jacketed interlayer



Heating the outer door to prevent condensation on the inner door



Water jacketed technology for longer insulation time

Power outage insulation: within 1 hour of power outage, the temperature $\leq 1^{\circ}\text{C}$; within 10 hours of power outage, the temperature $\leq 7^{\circ}\text{C}$

Seamless one-piece stainless steel inner tank for easy cleaning with no dead corner



The working chamber is made of mirror stainless steel, with a seamless one-piece inner tank and a large rounded corner and easy-to-remove bracket design.



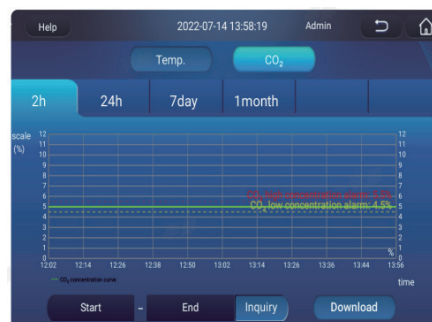
A complete safety alarm system and flexible and convenient interface operation.



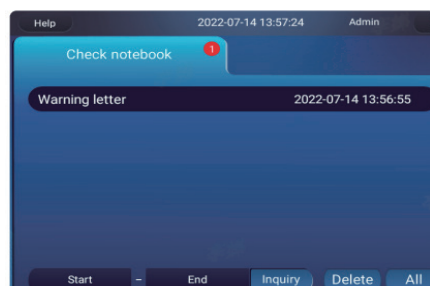
- A comprehensive and improved safety alarm system water level alarm inside the cabinet, audible and visual alarm reminder; Temperature, CO₂ concentration, O₂ concentration exceeded alarm level and door open timeout and other alarm functions; Optional IOT.
- Standard 7-inch touch screen, even wearing rubber gloves can be quickly recognized.
- The status data is clear at a glance: normal operating parameters are displayed in green; abnormal operating parameters are displayed in red for warning.



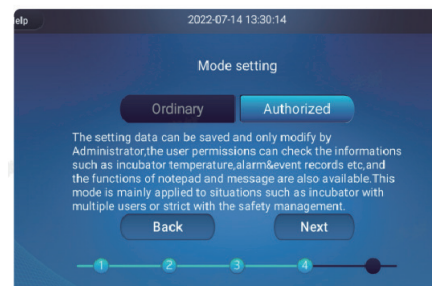
Home screen red warning



Real-time viewing of operating data



Announcement function designed for multiple persons to use the same incubator making it clear to all users on important matters



Operation mode clear management authority: three-levels of authority to ensure the security of data

Specification Data



Model	Volume (L)	External Dimensions (W*D*H)	Internal Dimensions (W*D*H)	Net Weight/ Gross Weight (kg)	Shelf Dimensions (W*D)(mm)	Shelf Qty Standard/Max	The Humidity Control Range	Temperature Sensor
HCP-188W	185	680*635*998	540*506*679	120/140	473*445	4/17	93%RH±2.5	PT1000

The Temperature Control Range	Temperature Fluctuation	Temperature Uniformity	Power Outage Insulation
Ambient temperature + 3~55℃	±0.1℃	±0.2℃	within 1 hour of power outage, the temperature ≤1℃; within 10 hours of power outage, the temperature ≤ 7℃

Temperature Control Mode	CO ₂ Sensor	CO ₂ Control Range	CO ₂ Control Accuracy
water jacketed	IR	0-20%	0.1%

Accessories



Optional List	Functional Description
Three-Gas Incubator	Control the oxygen concentration to achieve a hypoxic / hyperoxic culture environment
IoT	Remote monitoring of equipment operating status
4/8 Inner Door	Reduces the impact of opening the door on the environment inside the box and reduces air consumption
Pressure Reducing Valve	Reduce the outlet pressure of the gas cylinder to the operating pressure range of the machine to ensure stable operation
Cylinder Changer (2in1/4in1)	Connect two or four gas cylinders simultaneously to achieve uninterrupted gas supply and reduce the frequency of gas cylinder replacement
Electromagnetic Lock	Private use to avoid cross-disturbance, can not open the door during sterilization
Humidity Display	Humidity display real-time display of humidity environment inside the box
4-20mA	Temperature/concentration and other signals are transmitted, solving many problems such as signal interference in long-wire transmission
Shelve	Increase the number of cultured samples; Various materials available: 304/316/single mirror/double mirror
Stack Module	Supports stacking models of different volumes up and down to save lab space; supports stacking between different volumes
Removable Bottom Frame / Wheeled Trolley	Prevents bacterial contamination of the floor, easy to move position, height can be customized

*Haier Biomedical reserves the right to change products and specifications without prior notice.