

# CO<sub>2</sub> Incubator

## HCP-190

Sterile Sanctuary, Natural Renewal



Precise Control of  
Stable Environment



Multi-dimensional  
Aseptic Protection



Intelligent Human-  
Computer Interaction

**HCP-190**

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## Multi-dimensional Application Scenarios:

As a core piece of equipment in life sciences, clinical medicine, biopharmaceutical R&D, and cell therapy, this incubator precisely controls temperature, CO<sub>2</sub> concentration, and a clean environment to simulate in vivo physiological conditions, thereby providing a stable and reliable growth environment for the in vitro culture of cells, tissues, microorganisms, and more. It is widely used in stem cell culture, immune cell expansion, drug screening, virology research, vaccine production, embryo culture, and other scenarios, making it an indispensable key instrument.



## Superior Product Excellence: Core Technology, Renewed Experience

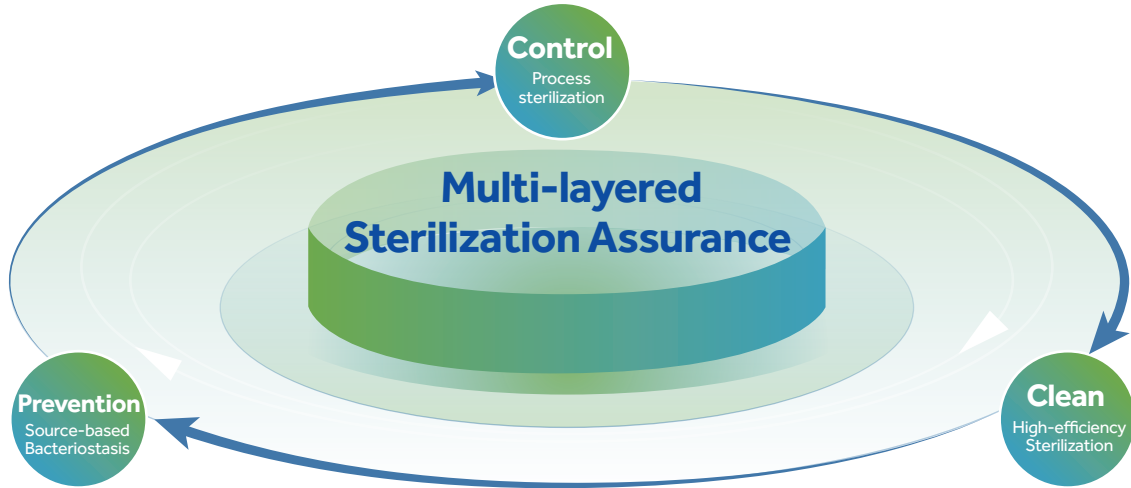
### Real-time sterile purification during cell culture

Real-time sterile purification during cell culture

Eliminate downtime and waiting

HEPA real-time filtration and sterilization during the culture process

Purifies to Class 100 clean air environment



### Inhibit bacterial growth from the source

Large-radius, dead-angle-free precision forming process

Ra≤0.3μm → Chamber with precision 8K mirror finish, Ra≤0.3μm

Inlet high-efficiency filtration module

### Thorough Sterilization After Use

All Components are High-Temperature Resistant and Support In-Situ Sterilization

Effectively Avoid the Risk of Secondary Contamination



## Multi-dimensional Aseptic Assurance

### Seamless Bacteriostasis: Structural antimicrobial design

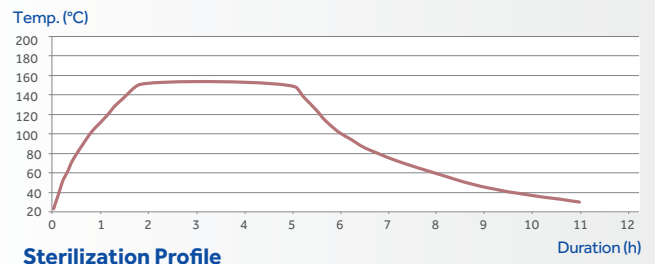
- Ra≤0.3μm → Mirror-finished inner chamber, Ra ≤ 0.3μm
- Large-radius, dead-angle-free stainless steel inner chamber

### Full-process Sterilization: Process purification 99.999%

- HEPA high-efficiency particulate air filtration

### 99.999% → In-situ Sterilization: Stepwise dry heat sterilization 99.999%

- Modules such as sensors and sterile filtration components
- High-temperature resistant selection supports in-situ sterilization



| Strain                             | Time   | Tests | Groups | Rate      |
|------------------------------------|--------|-------|--------|-----------|
| Escherichia coli                   | 120min | 3     | 5      | > 99.999% |
| Staphylococcus aureus              | 120min | 3     | 5      | > 99.999% |
| Pseudomonas aeruginosa             | 120min | 3     | 5      | > 99.999% |
| Candida albicans                   | 120min | 3     | 5      | > 99.999% |
| Bacillus atrophaeus                | 120min | 3     | 5      | > 99.999% |
| Aspergillus niger                  | 120min | 3     | 5      | > 99.999% |
| Bacillus stearothermophilus spores | 120min | 3     | 5      | > 99.999% |

\*Third-party validation confirms sterilization effectiveness. When maintained at 150° C for 120 minutes, the microbial kill rate reaches 99.999%. Third-party validation reports are available upon request.

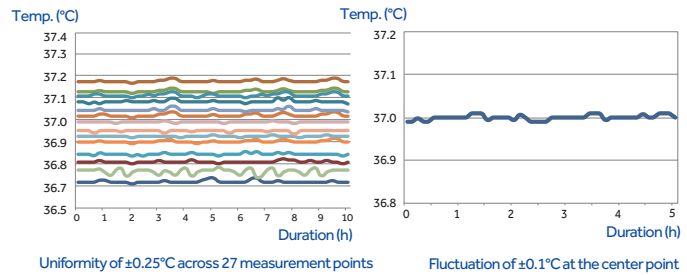


## Precise and Stable Environment Control

### ● Precise Control:

#### Temperature and CO<sub>2</sub> Concentration

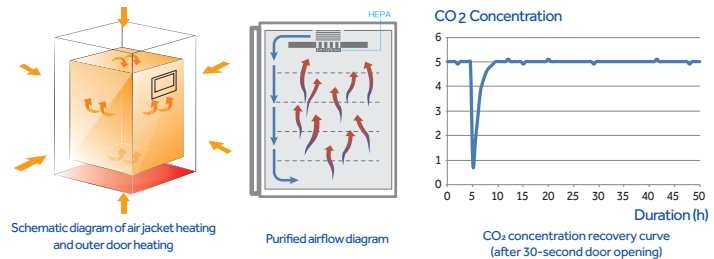
- Uniformity  $\pm 0.25^{\circ}\text{C}$ , Fluctuation  $\pm 0.1^{\circ}\text{C}$
- Dual-channel IR sensor, control accuracy 0.1%



### ● Fast Recovery:

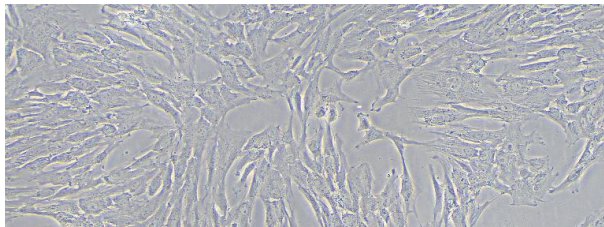
#### Temperature and concentration recovery after door opening $\leq 4$ min

- Adopting fuzzy-PID algorithm control to deliver excellent performance

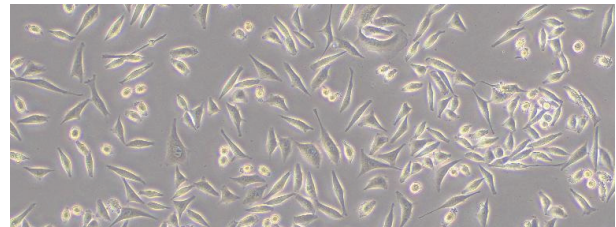


### ● Efficient Culture: High cell viability

- Six-sided heating mechanism
- PT1000 temperature sensor



Effect on umbilical cord mesenchymal stem cells



Effect on MCF-7 cells



## Smart Human-Machine Interaction

### ● Friendly Interaction:

#### Smart Touch Screen for Convenient Operation

- 7-inch Touch HD Display
- Key parameters displayed at a glance

### ● Remote IoT (Optional):

#### Real-time Monitoring of Culture Status

- Real-time data logging and export
- Key parameters displayed at a glance

### ● Emergency Protection

- Audible and visual alarm for operational anomalies



Key Specifications

| Model                            | Volume (L)                 | External Dimensions<br>(W x D x H) (mm) | Internal Dimensions<br>(W x D x H) (mm) | Net Weight /<br>Gross Weight (kg) | Shelf Dimensions<br>(W x D) (mm) | Number of Shelves<br>(Standard / Maximum) | Humidity<br>Control Range | Temperature<br>Sensor    | Sterilization Cycle          | Recovery Time after<br>30-second Door Opening |
|----------------------------------|----------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------|----------------------------------|-------------------------------------------|---------------------------|--------------------------|------------------------------|-----------------------------------------------|
| HCP-190                          | 190                        | 680x635x998                             | 540x521x679                             | 98/125                            | 473x445                          | 4/17                                      | 93%RH ± 2.5               | PT1000                   | ≤ 11hr                       | Temperature ≤ 4min<br>Concentration ≤ 3min    |
| Temperature<br>control range     | temperature<br>fluctuation | temperature<br>uniformity               | temperature+<br>control accuracy        | temperature<br>control mode       | sensor                           | control range                             | control<br>accuracy       | particle filtration      | O <sub>2</sub> control range | O <sub>2</sub> sensor                         |
| ambient<br>temperature<br>+3~60℃ | ± 0.1℃                     | ± 0.25℃                                 | ≤ ± 0.1℃                                | Air jacketed                      | Infrared (IR)                    | 0~20%                                     | ≤ ± 0.1℃                  | Class 100<br>cleanliness | 1~21%<br>(optional)          | ZrO <sub>2</sub>                              |

\*Tested in-house per Haier Biomedical factory standards, with reference to DIN 12880 and Chinese industry standard YY1621-2018.

Options



Tri-gas Incubator



4/8 Inner Doors



Pure Copper Shelf



Electromagnetic Lock



Gas Cylinder Changeover

| Options List                                                                     | Functional Description                                                                                                    |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Tri-gas Incubator                                                                | Control oxygen concentration to achieve a hypoxic culture environment.                                                    |
| IoT Module                                                                       | Remotely monitor the operating status of the equipment.                                                                   |
| 4 Small Inner Doors / 8 Small Inner Doors                                        | Reduce the impact of door opening on the internal environment and minimize gas consumption.                               |
| Pressure Reducing Valve                                                          | Reduce the cylinder outlet pressure to the machine's applicable pressure range to ensure stable operation.                |
| Gas Cylinder Changeover (2in1 / 4in1)                                            | Connect 2 or 4 gas cylinders simultaneously for uninterrupted gas supply, reducing the frequency of cylinder changes.     |
| Electromagnetic Lock                                                             | Designate for exclusive use to avoid cross-interference or contamination.                                                 |
| Humidity Display                                                                 | Display the internal humidity environment in real time.                                                                   |
| 4-20mA Communication                                                             | Transmit temperature/concentration signals, solving issues such as signal interference over long - distance transmission. |
| Inner Chamber Shelves<br>(Standard / Double-Mirror Finish / 316 Stainless Steel) | Increase the number of culture samples.                                                                                   |
| Pure Copper Shelf                                                                | Provide relatively better antibacterial performance.                                                                      |
| Tempered Glass Shelf                                                             | Meet the needs of heavy-load culture applications, such as using culture bags.                                            |
| Ag+ Antibacterial Coating                                                        | Spray Ag+ antibacterial coating on the surfaces of the chamber and door to reduce the risk of contamination.              |
| Elevating Stand / Rolling Cart                                                   | Elevating stand / wheeled cart (or rolling cart).                                                                         |