Specifications

CO₂ Incubator
HCP-80/168/258

Product Features

- Uniform and Stable Temperature
- Precise CO₂ Concentration
- 180°C Dry-heat Sterilization
- IoT APP Available for Real Time Monitoring (optional)

	Model		HCP-80	HCP-168	HCP-258
Type			Air Jacket	Air Jacket	Air Jacket
Construction	Chamber Volume (L)		80	170	258
	Interior Chamber		Stainless Steel		
	Exterior Chamber		Cold-rolled Steel Powder Coated		
	Access Port		35mm Diameter		
	Data Outputs		Remote Alarm Contacts, USB, and Optional 4-20mA		
Dimensions	Net/Gross Weight (approx)	kg	75/100	110/140	135/170
		lbs	165/220	242.5/308.6	297/374
	Interior Dimensions (W*D*H)	mm	400*420*490	490*560*650	570*610*745
		in	15.7*16.5*19.3	19.3*22*25.6	22.4*24.0*29.3
	Exterior Dimensions (W*D*H)	mm	625*684*735	714*812*887	794*867*985
		in	24.6*26.9*28.5	28.1*32*34.9	31.3*34.1*38.8
	Packing Dimensions (W*D*H)	mm	695*755*915	760*840*1050	865*940*1135
		in	27.3*29.7*36.0	29.9*33.1*41.3	34.0*37.0*44.7
Shelves	Dimensions (W*D)	mm	380*300	470*434	550*484
	Number Standard/Maximum		3/7	3/11	3/13
	Max.load Per Shelf/Total Load	kg	10/30	10/30	10/30
	Construction		Perforated, Adjustable		
Electrical	Rated Voltage Power Supply (V/Hz)		220/50	220/50	220/50
	Nominal Consumption (kw) (Steri-run)		0.07 (0.9)	0.095 (1.4)	0.12 (1.6)
Control	Controller		Microprocessor	Microprocessor	Microprocessor
	Display		7"LCD Screen	7" LCD Screen	7"LCD Screen
CO₂	Control		±0.1%	±0.1%	±0.1%
	Range		0-20%	0-20%	0-20%
	Alarm Range		±0.5%	±0.5%	±0.5%
	Inlet Pressure		12-17Psi (0.8-1.2 Bar)		
	Gas Purity	%	Min.99.5 or Medical Quality		
	Sensor		IR	IR	IR
	Recovery Time at 5vol.-%/CO₂ for a 30 Second Door Opening * (min)		4	4	4
	CO₂ Inlet Filter (µm)		<0.2	<0.2	<0.2
Alarms	High/Low Temperature		Y	Y	Y
	Remote Alarm		Y	Y	Y
	Excessive CO₂ Concentration		Y	Y	Y
	Water Shortage		Y	Y	Y
	Door Ajar		Y	Y	Y
Temperature Parameter	Control (°C)		±0.1	±0.1	±0.1
	Range		Range 3°C Above Ambient to 55°C		
	Uniformity (°C)		±0.3	±0.3	±0.3
	Ambient Range (°C)		18-32	18-32	18-32
	Sensor		PT1000	PT1000	PT1000
	Recovery Time at 37°C for a 30 Second Door Opening* (min)		4	4	4
Sterilization Cycle	Cycle Temperature		180°C on all Internal Surfaces		
	Cycle Duration		Under 12 Hours	Under 12 Hours	Under 12 Hours
Humidity	RH (Relative Humidity)		Setting 37°C ≥90%	Setting 37°C ≥90%	Setting 37°C ≥90%
	Humidity Reservoir		Max.1.3L/Min 0.5L	Max.3L/Min 0.5L	Max.3.6L/Min 0.5L
Optional	Hepa Filter		Y	Y	Y
	Pressure Reducing Valve		Y	Y	Y
	RS485		Y	Y	Y
	4-20mA		Y	Y	Y
	The Cylinder Switch		Y	Y	Y
Certification			CE	CE	CE

Product appearance and specifications are subject to change without notice

CO2 Incubator

Haier Biomedical IoT enabled CO_2 incubator with 180°C dry heat sterilisation provides a safe, reproducible growth environment for cell cultures.

IR Sensitive Control of CO_2 Concentration

The new IR sensor with high temperature resistance of 190°C is based on the NDIR measurement principle and uses a silicon MEMS transmitter to replace the traditional light source. It can withstand more than 300 dry heat sterilization cycles with a service life of up to 15 years and control accuracy of ±0.1%. German IR infrared sensing technology, zero drift, without need for calibration, drift less than 0.3% within 2 years.

7-inch Touchscreen

It displays CO_2 concentration and temperature data in real time. 15 years of data can be exported via USB.

Inner Door

It ensures the sealing inside the cabinet.

Outer Door

The heated outer door prevents the condensation of the inner door.

Precise Temperature Control

With six-sided heating based on fuzzy PID control, it has internal dual PT1000 high precision sensors.
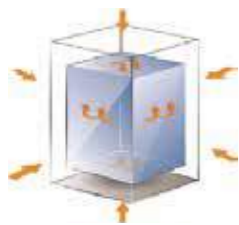
6-sided heating sketch

Internal Partition

Safety anti-slip design of pull out shelves.

304 Stainless Interior

Adjustable Feet

It can be double stacked.

180°C Dry-heat Sterilization

All internal components do not need to be disassembled and do not need separate autoclave sterilization to prevent secondary pollution. Do not need consumables, one-click sterilization. German INFRARED CO_2 sensor, NDIR light source technology drift < 0.3% within two years. It can withstand sterilization at 180°C with no disassembly and no manual calibration.
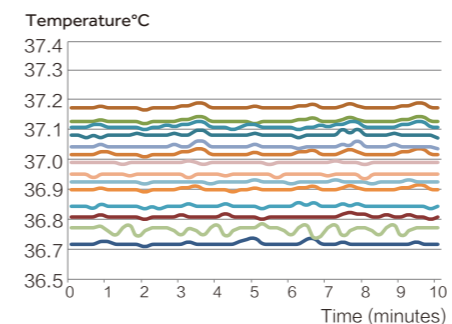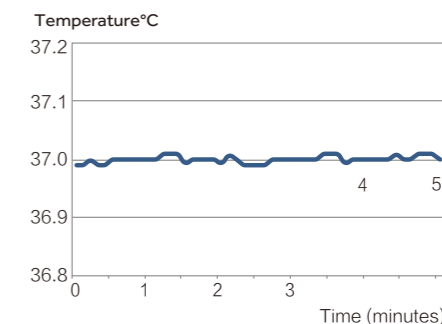
Precise and Accurate Temperature Control

Controls the temperature precisely, within ±0.1°C, with six-sided heating based on the fuzzy PID control principle, to provide a stable temperature to ensure the normal growth of cells throughout their life cycle.

Uniformity of 27 measuring points < ± 0.3℃

Central consistency point < ± 0.1℃

Precise CO_2 Concentration Using New IR Sensor Control Technology

Haier Biomedical's new IR Sensor technology uses NDIR measurement principles and withstands high temperatures of 190°C. The silicon MEMS transmitter can carry out more than 300 dry heat sterilization cycles to extend the service life to 15 years. Built-in temperature and humidity compensation technology reduces the impact of changes of humidity and temperature without the need for calibration after the high temperature sterilization. Five point calibration yields a higher measuring accuracy, sensitivity with less drift.

A New Type of Infrared (IR) Sensor

Ordinary Sensor
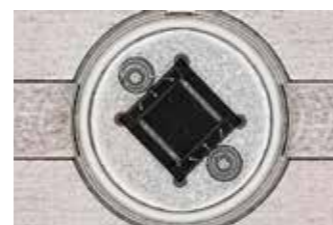
Silicon−based mems transmitter
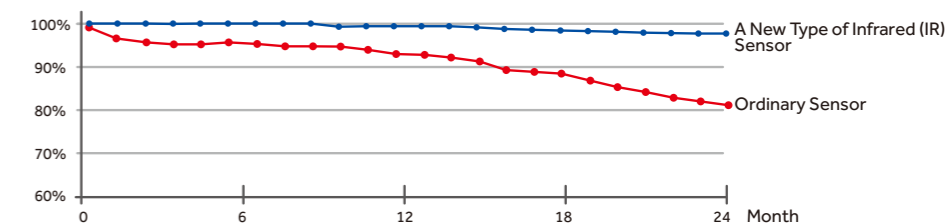
Sketch of drift less than 0.3%

Fast Environment Recovery for Optimal Cell Growth

Adopting active air flow control technology, based on the fuzzy PID control principle, the parameters can be restored without overshoot. After opening the door for 30 seconds, the temperature and CO_2 concentration can be quickly restored within 4 minutes. Even if multiple users share a CO_2 incubator and frequently open and close the door, the stability and uniformity of the incubator can be ensured.
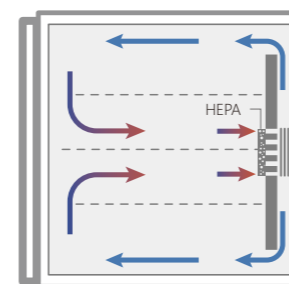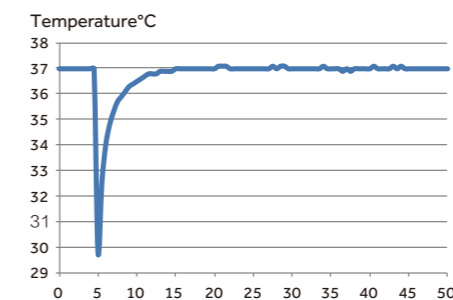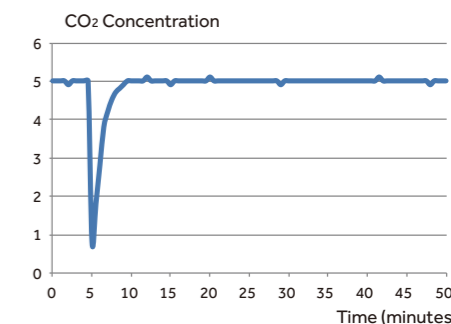
HEPA

Illustration of purified airflow

**Temperature recovery curve (door open for 30s)**

CO_2 concentration recovery curve (door open for 30s)

180°C Dry-Heat Sterilization Technology Minimises Contamination

Easy and effective sterilization of microorganisms including bacteria, fungi and microplasma with strong resistance, at 180°C high temperatures without the need for consumables. Simply press the "sterilization key" to activate and complete the sterilization process automatically in just 12 hours.

Delivers sterility level within the chamber of all surfaces to meet WS/T367-2012 standards.

All components are sterilized during the process, there is no need to dissemble internal components (including CO_2 sensors) and decontaminate separately, thus avoiding secondary pollution.

Temperature°C

Time (hours)
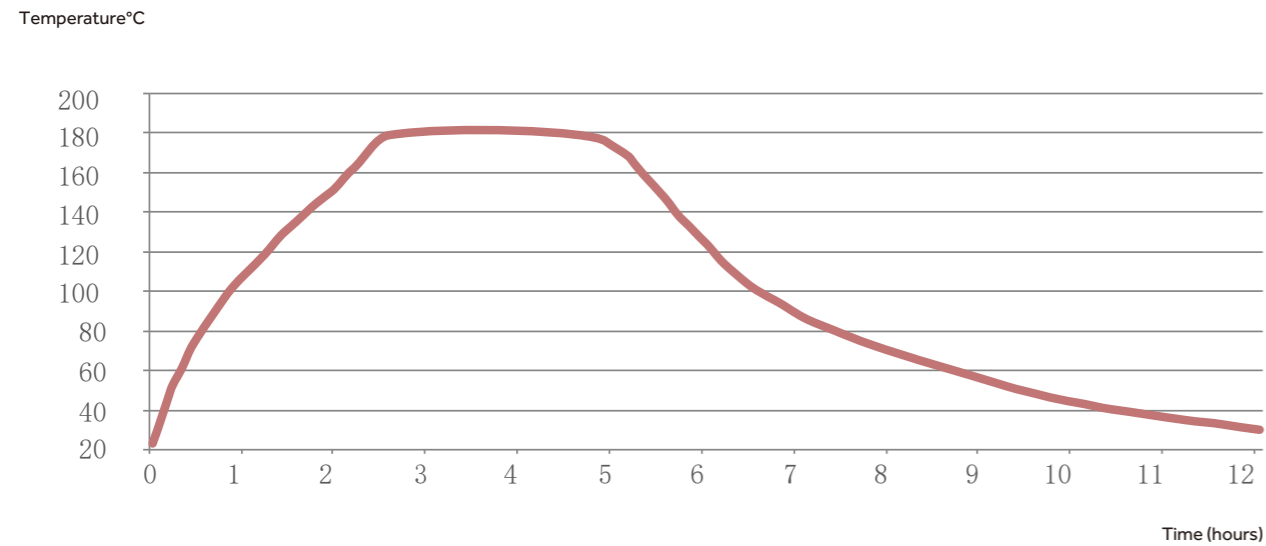
Sterilization Temperature Profile

Forty-seven points were tested in the working chamber, including glass inner doors and partitions.
All regions reached 180°C and maintained for 2 hours.

Ultraviolet disinfection

Cells exposed to bacterial environment

90°C hygrothermal disinfection

Cells exposed to bacterial environment

180°C dry-heat sterilization of haier CO_2 incubator

Pollution-free cell growth environment

High Efficiency Microbial Filter

The CO_2 inlet is equipped with a high-efficiency microbial filter, with 99.99% filtration efficiency for particles larger than or equal to 0.2μm in diameter. It can effectively filter bacteria and dust particles in CO_2 gas line to ensure the safety of experimental results.

Easy to Clean Interior

The working chamber is plasma electro polished, stamped stainless steel with wide-arc, laser welded corners. Bracketless shelving design ensures is quick and easy to clean.
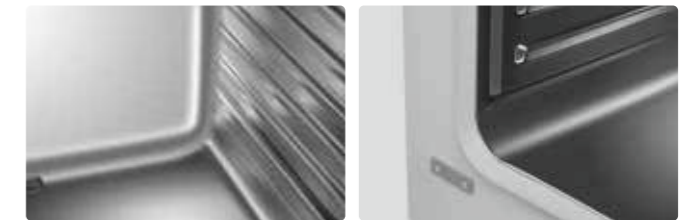
Interactive Intelligent Display with Easy Touch Operation

Touch-sensitive screen with rapid sensing even in rubber gloves. Green indicates normal operational parameters while a red warning display indicates abnormal making it easy to view data at a glance. A red warming display and audible buzzer will alarm when water level is low.

Home screen red warning

Real-time display of operation data real-time display of temperature, CO_2 concentration and O_2 concentration, and the data during the culture cycle can be viewed at any time.

Announcement function designed for multiple persons to use the same incubator make clear to all users on important things.

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

Realtime Monitoring via Optional IoT Module

IoT module with multi-screen interaction, provides real-time upload of set parameters, operation parameters, operation curves, records and event records through the IoT cloud platform. The operation of incubator can be monitored anytime anywhere through mobile APP or computer terminal. The alarm function and service function are available with just the touch of a button.

Anti-Condensation Heating System to Reduce Pollution Risk

The door on the CO_2 incubator radiates heat to the inner glass door, effectively preventing the glass door from forming condensation. The possibility of microbial contamination caused by the condensate water is eliminated.

Intelligent Control of Circulating Air Maintains Uniformity

Automatically adjusts the circulation of the air flow, optimising the air flow to avoid air volatilization of samples and ensuring proper uniformity throughout the chamber.

Comprehensive Safety Alarm System

The system ensures the safety of experiments and processes by utilizing an independent temperature alarm system including a sound light and remote reminder. Other alarms include CO_2 concentration, door ajar and water shortage.
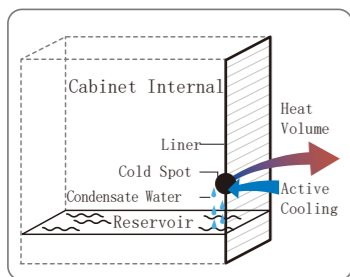
Thoughtful Design with Attention to Details

Safe anti-slip design of pull out shelves.

Convenient drainage design

Cabinet Internal
Heat Volume
Liner
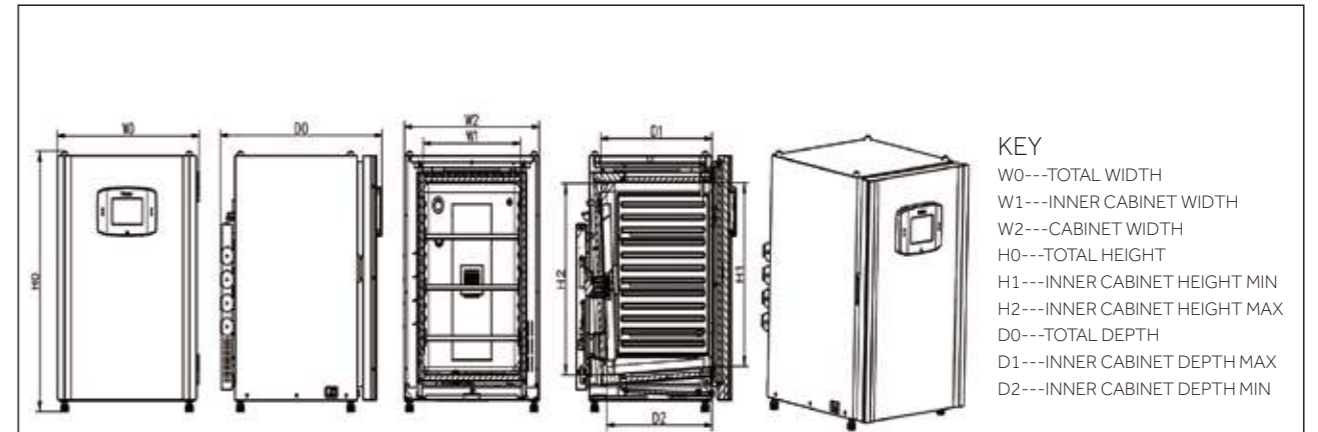Cold Spot
Condensate Water
Active Cooling
Reservoir

Active heat pipe condensation technology with condensate water directly return to reservoir.

Data traceable for 15 years with large storage capacity and data exportable through usb.

CAD Dimensions

KEY
W0---TOTAL WIDTH
W1---INNER CABINET WIDTH
W2---CABINET WIDTH
H0---TOTAL HEIGHT
H1---INNER CABINET HEIGHT MIN
H2---INNER CABINET HEIGHT MAX
D0---TOTAL DEPTH
D1---INNER CABINET DEPTH MAX
D2---INNER CABINET DEPTH MIN

Code / Mode	W0	W1	W2	H0	H1	H2	D0	D1	D2
HCP-80	625	400	588	735	475	490	684	420	420
HCP-168	714	490	678	887	623	650	812	560	529
HCP-258	794	570	758	985	721	745	867	610	610

Optional Accessories

Name	Picture	Name	Picture
Relief Valve		Water Tray	
HEPA Filter		Oxygen Senser (only for HCP-168)	
HEPA Filter Cover		Solenoid Valve (only for HCP-168)	
Stacking Frame		6 Inner Door (only for HCP-168)	
Internal partition		3 Inner Door (only for HCP-168)	
Roller base			