Life Science

Heal Force

CO2 Incubator

Ideal Culture Conditions for Your Success

Heal Force Leads You to Healthier Life

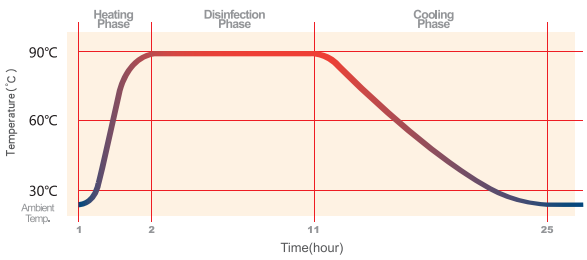
Air-jacketed CO_2 Incubator

Introductions

CO_2 incubators are widely used in scientific research to grow and maintain cell cultures. A Heal Force CO_2 incubator provides you with unsurpassed natural simulation to ensure optimum growth conditions for your culture at all time. That's why they become the first choice of researchers in fields of application include tissue engineering, in vitro fertilization, neuroscience, cancer research and other mammalian cell research.

Safe for cultivation

Cell cultivation in particular is a highly sensitive process in which bacteria, viruses, fungal spores and mycoplasmas can destroy valuable cultures or distort test results, causing more work. Heal Force solves this problem using a unique design and effective method to ensure sterile conditions.



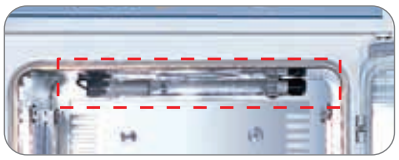
90℃ moist heat disinfection pattern

90℃ moist heat disinfection (HF90 & HF240)

HF90 and HF240 are equipped with 90℃ moist heat disinfection system. The validated overnight sterilization cycle ensures reliable destruction of germs that could interfere with your work and requires no extra work, such as removal of interior fittings. Mycoplasma is 100% eliminated in a routine disinfection cycle.

Ultraviolet disinfection (HF151UV & HF212UV)

A long-life ultraviolet lamp is equipped at the inner back of HF151UV and HF212UV to sterilize chamber air and water in the reservoir to maintain contamination-free conditions within the chamber. To take maximum effect of disinfection, the wavelength of UV light is kept at 254nm.


UV lamp

Coved corners

Easy-to-clean design

The cleaning process is significantly simplified by Heal Force's unique, seamless, deep-drawn interior chamber, which reduces any areas where contamination could accumulate. Heal Force incubators offer the best usable-space-to-volume ratio due to the total absence of any additional fittings in the interior chamber

Inlet filter for CO_2 supply

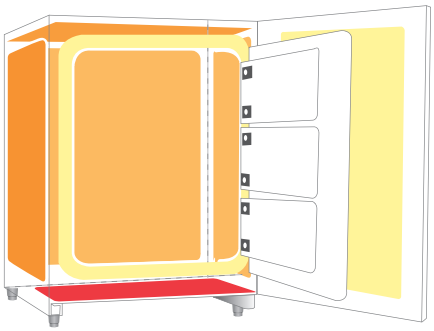
All gas injection lines are filtered via HEPA filter to remove impurities and contaminants before being injected into the chamber. The HEPA filter is able to filter particles larger than 0.3μm at 99.998%.

CO_2 inlet filter

Absolutely condensation-free, even at high air humidity level

The high air humidity prevents cell cultures from drying out and also keeps the osmolarity constant in the culture medium. With our CO2 incubators, you can work with air humidity up to 95% while the interal walls remain completely dry (In order to prevent contamination, however, no condensation must occur). The patented tilted water reservoir system keeps the air humidity absolutely stable.

Water reservior



Optimum temperature control

A reliable air jacketed heating system combined with PT1000 temperature sensors ensures high precision with homogenous heat distribution in the interior.

Outstanding dynamics ensure short recovery times and balance out any fluctuations caused by door open for Heal Force CO_2 incubators. This provide reliable protection at any time, particularly for sensitive cultures.

- The main heater provides precise temperature control.
- The bottom heater warms the distilled water and ensures chamber humidity.
- The outer door heater prevents condensation on the inner door and facilitates quick temperature recovery after door openings.

Divided, inner glass door

Three inner glass doors (HF90) maintains stable climatic conditions, minimizes any changes to the humidity, heat and gas concentration, shortens recovery times significantly and also further reduces the risk of contamination. Six half-size sealed inner glass doors and shelves are optional for model HF240. This makes it possible for several users to work with the same equipment

HF90 with 3 inner glass doors (standard)

HF240 with 6 half-size inner glass doors and shelves (optional)

Auto-start function

The auto-start function, which considerably simplifies the equipment's operation, contains the incubator's automatic start-up and the measuring system's calibration. The thermal conductivity CO_2 sensor has its baseline automatically reset without manual adjustment. The incubator can be loaded immediately after the start-up routine is completed.

Auto-start function

Specifications

Model	HF90	HF240	HF151UV	HF212UV
Construction				
Exterior dimensions (W×D×H)	637×762×909(mm) 25.1×30.0×35.8(inch)	780×820×944(mm) 30.7×32.3×37.2(inch)	615×768×865mm) 24.2×30.2×34.1(inch)	"910×763×795(mm) 35.8×30.0×34.1(inch)"
Interior dimensions (W×D×H)	470×530×607(mm) 18.5×20.8×23.9(inch)	607×583×670(mm) 23.9×22.9×26.4(inch)	470×530×607(mm) 18.5×20.9×23.9(inch)	"600×588×600(mm) 23.6×23.1×23.6(inch)"
Interior Volume	151L/5.3cu.ft.	240L/8.5cu.ft.	151L/5.3cu.ft.	212L/7.5cu.ft.
Net Weight	80kg/176lbs.	80kg/176lbs.	75kg/165lbs.	95kg/209lbs
Interior	Type 304, mirror finish, stainless steel			
Exterior	Electrolyzed galvanization steel, powder coated			
Inner door	3 inner doors standard	6 mini inner doors optional	one inner door standard	one inner door standard
Temperature				
Heating method	Direct Heat & Air Jacket (DHA)			
Temp. control system	Microprocessor	Microprocessor	Microprocessor	Microprocessor
Temp. sensor	PT1000	PT1000	PT1000	PT1000
Temp. range	5℃ above ambient temperature to 50℃			
Temp. uniformity	±0.2℃	±0.2℃	±0.2℃	±0.3℃
Temp. stability	±0.1℃	±0.1℃	±0.1℃	±0.1℃
CO_2				
Inlet pressure	0.1 MPa	0.1 MPa	0.1 MPa	0.1 MPa
CO_2 control system	Microprocessor	Microprocessor	Microprocessor	Microprocessor
CO_2 sensor	Thermal conductivity	Thermal conductivity	Thermal conductivity	Thermal conductivity
CO_2 range	0 to 20%	0 to 20%	0 to 20%	0 to 20%
CO_2 stability	±0.1%	±0.1%	±0.1%	±0.1%
Humidity				
Humidifying system	Special designed water reservoir			
Relative humidity	≥95%	≥95%	≥95%	≥95%
Water reservior volume	3L	3L	4L	6L
Shelves				
Shelf dimensions (W×D)	423×445(mm) 16.7×17.5(inch)	423×445(mm) 16.7×17.5(inch)	423×445(mm) 16.7×17.5(inch)	590×510(mm) 23.2×20.1(inch)
Shelf construction	3,10	3,12	3,10	3,12
Standard, Maximum	Type 304, mirror finish, stainless steel			
Fittings				
Access port	Standard	Standard	Optional	Optional
Air filter	0.3μm, Efficiency:99.998% (for CO_2)			
Remote alarm contacts	Standard	Standard	Standard	Standard
De-contamination	90℃ moist heat disinfection	90℃ moist heat disinfection	UV lamp	UV lamp
Rated power	600W	735W	600W	700W
Power supply	220V/50Hz (standard), 110V/60Hz (Optional)	220V/50Hz (standard), 110V/60Hz (Optional)	220V/50Hz (standard), 110V/60Hz (Optional)	220V/50Hz (standard), 110V/60Hz (Optional)
Alarm system	Power interruption * High/low temperature * Deviation of CO_2 * RH * Door ajar * Independent overheat protection			
Data output	RS232	RS232	-	-

HF90

HF240

HF212UV

HF151UV

Water-Jacketed CO_2 Incubator

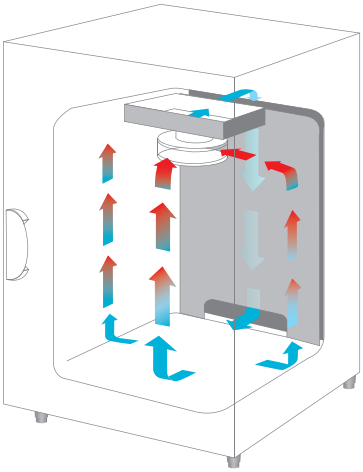
Water-jacketed

The large size Heal Force HF160W CO_2 incubator incorporates a water jecketed system. Because of the heat retention characteristics of water, there is no sudden temperature change in the event of an unexpected power failure. A stable temperature enviroment is ensured.

HEPA filter

HF160W applies long term effectiveness of the HEPA filter to protect your cultures. The filter is very efficient to entrap particulates larger than 0.3μm at 99.97%. The HEPA filter system runs continuously and within every 60 seconds, the volume of entire chamber is disinfected. With help of HEPA filter, the air quality achieves Class 100 clean room levels within 5 minutes following a door opening.

HEPA filter



HEPA filter and air flow pattern

Airflow system

Optimized air flow system ensures the temperature and CO_2 concentration to be stable and uniform within the chamber.

AUTO-ZERO/AUTO-START

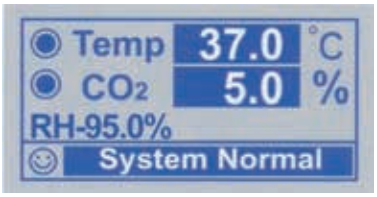
HF160W combines precise CO_2 control with a choice of TC or IR sensors. The microprocessor will automatically "Zero" the incubator(IR type) using room air as a reference every 24 hours. Auto-start function for TC type ensures the sensor's beseline automatically reset without manual adjustment. These features will maintain an accurate CO_2 control without worrying about CO_2 drift.

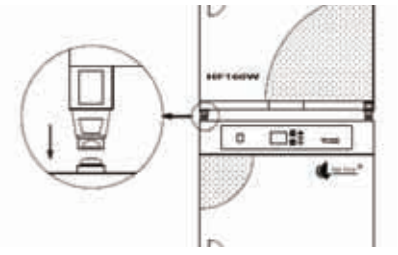
Automatic control door heater

The outer door incorporates a door heater which is interlocked with the surrounding temperature monitoring system. This prevents temperature differences between the chamber and the inner door, thereby preventing condensation.

Humidity display and alarming system

HF160W is able to create a high humidity environment and the relative humidity (RH) is displayed on the panel, readable in 0.1% increments, including low RH programmable alarm(alerts you of need to add water)





Space Utility

Stackable design takes up less space. Two or three units can be stacked according to available space and usage

Automatic gas cylinder switchover system

This system automatically switches from the primary to secondary gas cylinder when CO_2 gas level does not change while an injection valve is open.

A. power switch
B. chamber gas sample port
C. fill port
D. CO_2 sensor
E. temperature sensor
F. humidity sensor
G. piling leg
H. mirror finish shelves
I. water jacket
J. glass fibre insulator
K. high efficiency HEPA
L. magnetic gasket
M. outer door heater
N. water pan
O. water jacket drain
P. coved corner

HF160W Specifications

Construction	
Exterior dimensions (W×D×H)	655×656×1030(mm) 25.8×25.8×40.5(inch)
Interior dimensions (W×D×H)	544×504×681(mm) 21.4×19.8×26.8(inch)
Interior Volume	185L/6.5cu.ft.
Water jacket volume	43.5L/1.54cu.ft.
Net Weight	110kg/242lbs
Interior	Type 304, mirror finish stainless steel
Exterior	cold-rolled steel, power coated
Inner door	one inner door standard
Temperature	
Heating method	Water Jacket
Temp. control system	Microprocessor
Temp. sensor	PT1000
Temp. range	5℃ above ambient temperature to 55℃
Temp. uniformity	±0.2℃
Temp. stability	±0.1℃
CO_2	
Inlet pressure	0.1 MPa
CO_2 control system	Microprocessor
CO_2 sensor	Thermal conductivity/Infrared
CO_2 range	0 to 20%
CO_2 stability	±0.1%

Humidity	
Humidifying system	Humidity pan
Humidifying sensor	Standard
Relative humidity	≥95%
Display	In 0.1% increments
Water reservior volume	3L
Shelves	
Shelf dimensions (W×D)	"466×440(mm)18.3×17.3(inch)
Shelf construction	Type 304, mirror finish, stainless steel
Standard, Maximum	3,11
Fittings	
Access port	Standard
Air filter	0.3μm, Efficiency:99.998% (for CO2)
Remote alarm contacts	Standard
De-contamination	HEPA filter system
Rated power	430W
Power supply	220V/50Hz (standard), 110V/60Hz (Optional)
Alarm system	Power interruption * High/low temperature * Deviation of CO_2 * RH * Door ajar * Independent overheat protection
Data output	RS232

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