

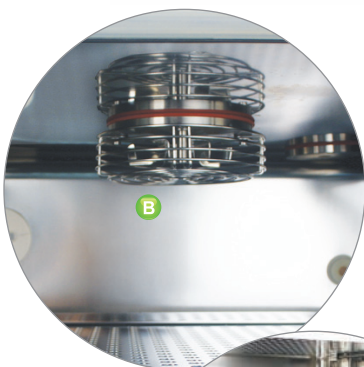
# HF100 Tri-Gas Incubator

Incubator Series



## Introduction

HF100 tri-gas incubator, providing precise temperature, CO<sub>2</sub>, O<sub>2</sub> control as well as high humidity, is widely used in scientific research to grow and maintain cell cultures. Typical fields of application include tissue engineering, in vitro fertilization, neuroscience, cancer research and other mammalian cell research.



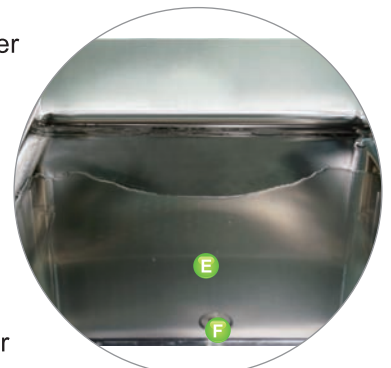
B

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- A Stainless steel chamber with easy-to-clean coved corners reduces contamination-prone surface.
- B The turbulence-free chamber ventilation improves CO<sub>2</sub>, O<sub>2</sub>, humidity and temperature uniformity.
- C Easy-removable, replaceable shelves make chamber cleaning a rapid and efficient process.
- D Standard three inner glass doors minimize recovery time and the risk of contamination.
- E Innovative design of water reservoir replacing water tray, allows rapid recovery of optimal humidity
- F Water level alarm (audible and visible) alerts users when the water reservoir needs to be refilled.
- G Integrated electric siphon pump facilitates drainage operation.



E

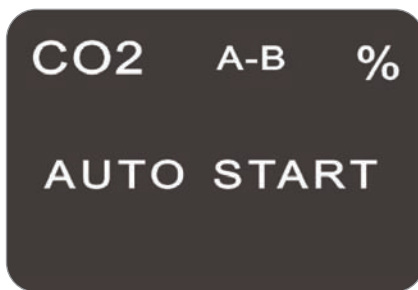
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## Temperature control

- Direct heating enables rapid temperature recovery while air jacket provides isolation against ambient temperature fluctuations
- PT1000 temperature sensor ensures stable temperature control with little gradient and prompt temperature recovery without overheat
- Three temperature control settings (main heater, outer door heater and overheat protection) minimize condensation and yield precise temperature uniformity

## CO<sub>2</sub> control

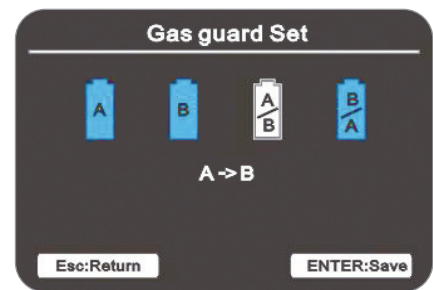
- Drift free IR CO<sub>2</sub> sensor responds extremely fast to gas concentration changes
- Auto-zero runs automatically to recover the indicator to 'zero' every 24 hours
- HEPA filter of CO<sub>2</sub> inlet port can remove impurities and contaminants with efficiency 99.998% @ 0.2um
- Standard CO<sub>2</sub> cylinder auto changer alerts users and ensures continuous CO<sub>2</sub> supply



AUTO START



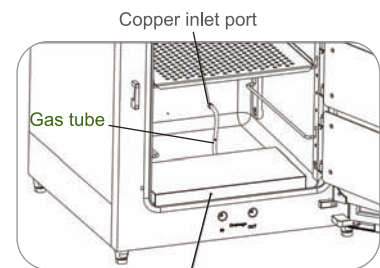
Access port



Gas guard set

## O<sub>2</sub> control

- Maintenance-free zirconium oxide sensor: long life, good linearity and high precision
- Oxide sensor is calibrated automatically(auto-cal) and stays in the incubator during the 90°C decontamination routine
- Well designed O<sub>2</sub>/N<sub>2</sub> inlet module improves humidity stability in chamber



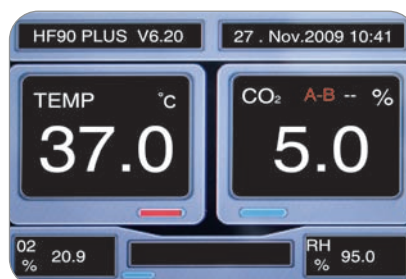
O<sub>2</sub>/N<sub>2</sub> inlet module

## Constant humidity

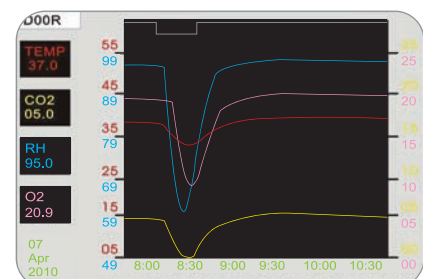
- Larger water surface area provided by water reservoir with inclined and rounded corners
- A new water level alarm(audible and visible) alerts users when the water reservoir needs to be refilled
- Standard humidity sensor ensures a constant high level of humidity to prevent cultures from drying out

## User-friendly interface

- Microprocessor with soft-touch control panel for optimum operation
- Large-size TFT-LCD display for temperature, CO<sub>2</sub>, O<sub>2</sub> concentration and RH
- Comprehensive visual and audio alarms for all parameters
- Diagnostic interface provide comprehensive solutions to frequently encountered problems
- RS232 port standard for communication and external instrument logging



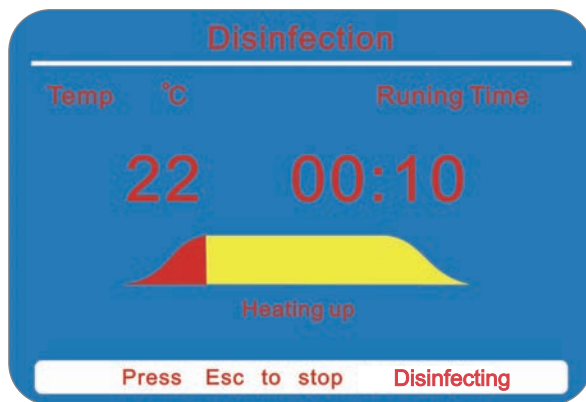
Large-size TFT-LCD



Real-time monitoring system

## Contamination prevention

- 90°C disinfection routine decontaminates the entire interior of the chamber while causes less damage to electronic components
- In independent tests, a routine disinfection cycle is proven to completely eliminate a variety of contaminants including mycoplasma
- A completely smooth inner casing with rounded corner reduces the possibility of hidden contamination  
Easy-removable, replaceable shelves make chamber cleaning a rapid and efficient process



90°C moist heat decontamination



Condensation control

## General Specifications

|   |                                     |   |                           |
|---|-------------------------------------|---|---------------------------|
| <b>Temp. Control Method</b>                     | Direct heat & air jacket            | <b>Humidity range(% RH)</b>               | ≥95%±3%                   |
| <b>Temp. Control sensor</b>                     | Pt1000                              | <b>Interior Volume</b>                    | 151 L                     |
| <b>Temp. Range(°C)</b>                          | Amb. +2 to 55°C                     | <b>External Dimensions(mm)</b>            | 637x768x869 (WxDxH)       |
| <b>Temp. Accuracy(°C)</b>                       | <±0.1                               | <b>Interior Dimensions(mm)</b>            | 470x530x607 (WxDxH)       |
| <b>Recovery Time</b>                            | ≤7 mins(After 30 sec. Door opening) | <b>Net Weight</b>                         | 80Kg                      |
| <b>CO<sub>2</sub> control system</b>            | Microprocessor PID                  | <b>Standard Quantity of Shelves</b>       | 3                         |
| <b>CO<sub>2</sub> range(% CO<sub>2</sub>)</b>   | 0~20                                | <b>Maxium Quantity of Shelves</b>         | 10                        |
| <b>CO<sub>2</sub> accuracy(%CO<sub>2</sub>)</b> | ±0.1                                | <b>Shelf Dimensions(mm)</b>               | 423x445 (WxD)             |
| <b>CO<sub>2</sub> sensor</b>                    | IR standard or TC optional          | <b>Max. Load per Shelf(Kg)</b>            | 10                        |
| <b>O<sub>2</sub> range(% CO<sub>2</sub>)</b>    | 3%-20%, 22%-85%                     | <b>Available Electrical configuration</b> | 220V±10%/ 50Hz (standard) |
| <b>O<sub>2</sub> accuracy(%CO<sub>2</sub>)</b>  | ±0.2                                | <b>Rated Power</b>                        | ≤650VA+10%                |
| <b>O<sub>2</sub> sensor</b>                     | zirconuim                           | <b>Interior material</b>                  | Stainless steel, type 304 |



## Heal Force Bio-Meditech Holdings Group Nison Instrument (Shanghai) Limited

16th Floor, Building B, SOHO Zhongshan Plaza, 1065 West Zhongshan Road,  
Changning District, Shanghai 200051, China

Tel: +86 21 62728646

E-mail: [export@healforce.com](mailto:export@healforce.com)

Fax: +86 21 62710529

Website: [www.healforce.com](http://www.healforce.com)

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