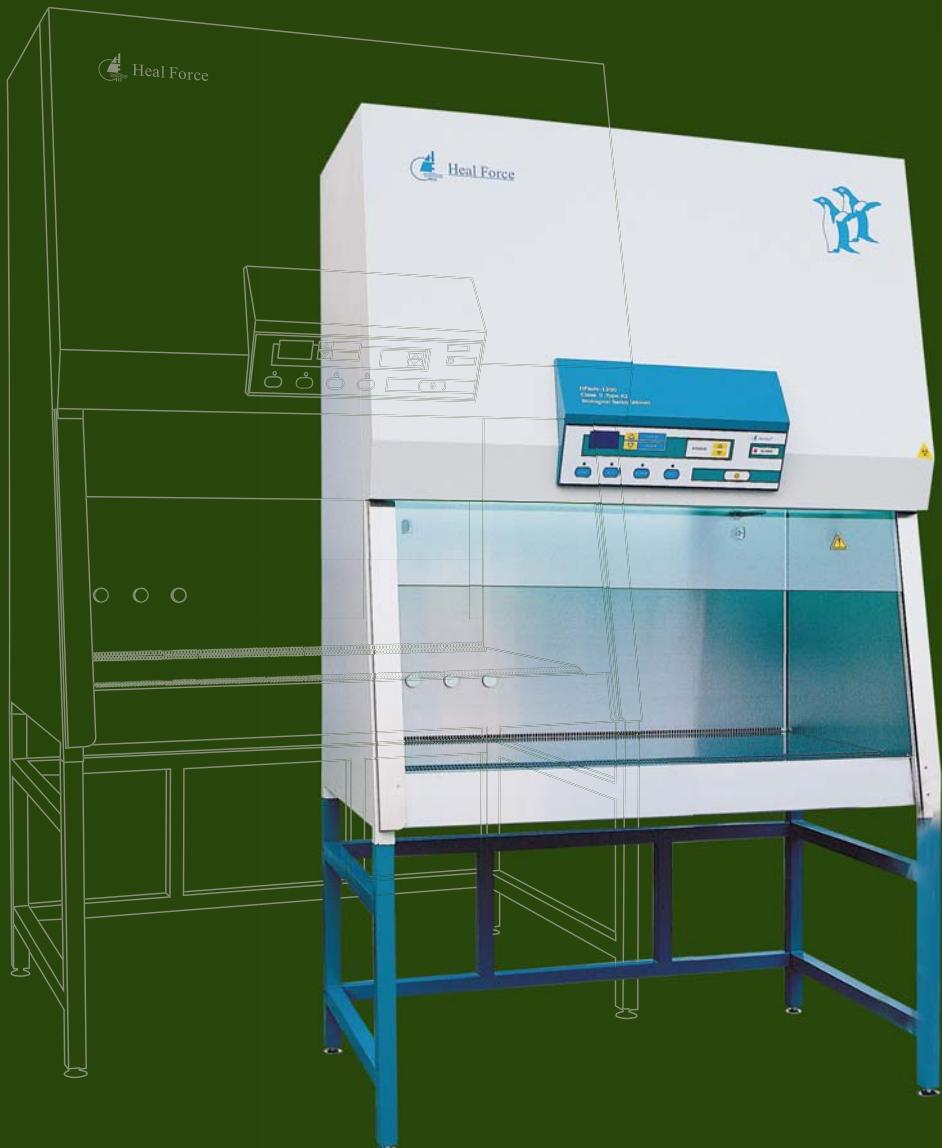




Heal Force Laboratory Equipment

# Biological Safety Cabinet (Class II Type A2 & B2)



Heal Force leads you to healthier life

# Biological Safety Cabinet

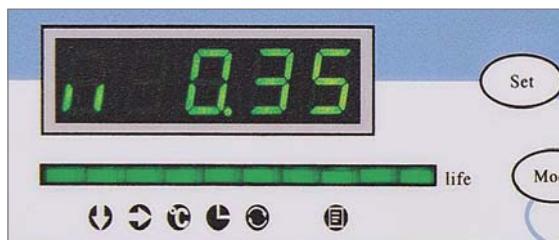


## Enhance Your Comfort

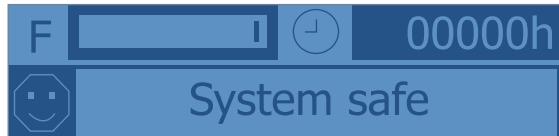
- 200 mm height window front with  $\pm 5\text{mm}$  precision position alarm
- Filter life indication with audio & visual alarm system
- Integrative stainless steel inner structure & coved corner facilitate cleaning
- Integrated armrest enhances user comfort and prevents airflow disorder
- 10° inclined angle sash offers wider and brighter operation zone
- Foot control is available
- 2 built-in waterproof sockets enable device operation
- 3 valves for extendable functions
- User-friendly control panel



Leak Test



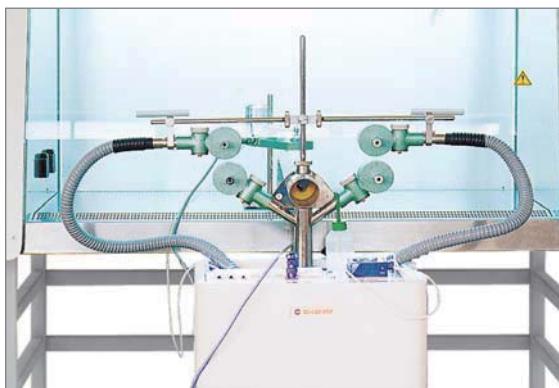
Filter Life Indicator (For Type A2 Manual-control Models)



Filter Life Indicator (For Type A2 Motorized-control & Type B2 Models)



KI-Discus Containment Test (1)



KI-Discus Containment Test (2)

# (Class II Type A2 & B2)



Airflow Pattern of Class II Type A2

## Everything for Your Safety

- Downflow without eddy currents & dead air pockets in operation zone
- Negative pressure protection
- Non air leakage from operation zone
- High efficient HEPA and ULPA filters
- Strict K1-Discus containment test
- Cabinet & filters leakage DOP test
- UV interlock provides additional safety by prohibiting UV light unless the front window is fully closed
- UV disinfection timer (30 and 60 minutes)
- UV-resistant & toughened safety glass front window
- Vertical laminar airflow provides protection for operators, samples and environment.
- Interchangeable inflow and downflow velocity and volume
- Password protection

- Inflow Air
- Negative Pressure
- Unfiltered Air
- Filtered Air

- 30% air exhaust
- 70% air recirculation
- Average inflow velocity at 0.53 m/s
- Negative pressure air surrounding all biological contaminated parts

## Class II Type A2

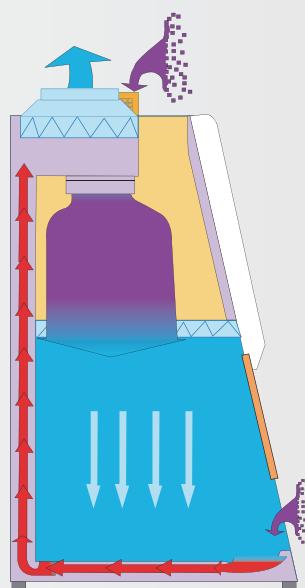
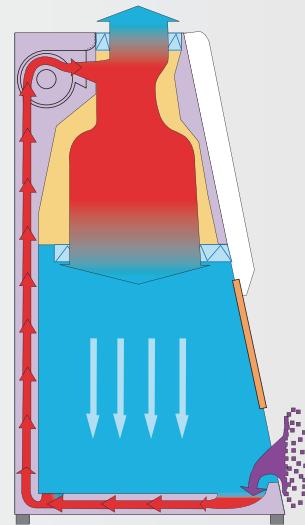


Airflow Pattern of Class II Type B2

## Class II Type B2

- 100% air exhaust
- Average inflow velocity at 0.53 m/s
- Negative pressure air surrounding all biological contaminated parts

- Inflow Air
- Negative Pressure
- Unfiltered Air
- Filtered Air



# Features

## HEPA & ULPA Filter

2 long-life filters are equipped. The main filter is for downflow while the exhaust filter is for airflow into environment.

	Main Filter	Exhaust Filter
Class II Type A2, Manual Control*	ULPA	ULPA
Class II Type A2, Motorized Control	ULPA	ULPA
Class II Type B2, Manual Control	ULPA	HEPA
Class II Type B2, Motorized Control	ULPA	HEPA

\*An optional module of ULPA filter (for main & exhaust filter together) is available on request.

To achieve reliable disinfection and protect sample, environment and operator from pollution, all filters are applied with 2 high quality ULPA or HEPA filters.

HEPA filter with 99.999% efficiency can prevent particles larger than 0.3  $\mu\text{m}$ .

ULPA filter can filtrate particles larger than 0.1~0.2  $\mu\text{m}$  at 99.999%.

## Self-induced Blower

As a core component, blower motor maintains airflow variation less than 10% in case wind pressure via filter change up to 50%, therefore guarantees safety for operator and sample.

## Filter Service Life Indication

Filter has estimated service life, which is uncertain subject to different local air quality, research subjects and operation frequency. There is potential pollution hazard if operator is unconscious to filter expiration.

Automatic filter life display is designed to measure filter service life in according to actual condition of membrane.

## Ergonomical Structure

10° leaning front window provides operator comfortable posture and extensive operating view. Standard 200mm hatch, with precise  $\pm 5\text{mm}$  limitation alarm, also brings comfortable and safe operation area.

## Real-time Air Flow Velocity Indicator

Velocities of downflow and inflow are inspected at real-time, and indicated on the control panel. Alarm is activated in case velocity fluctuating over 20%.

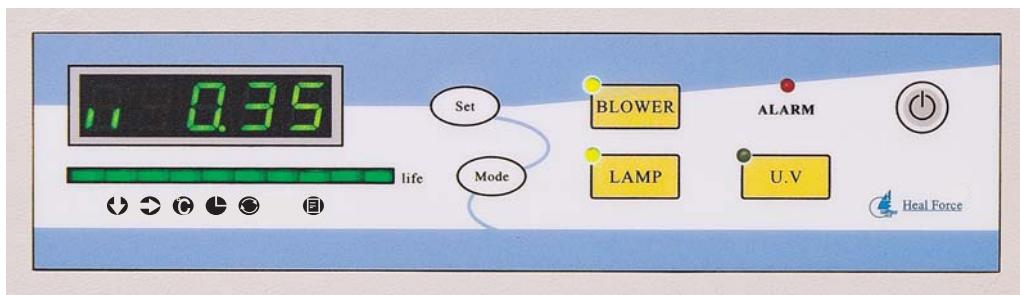
## Motorized Control Window (optional)

Motorized control window is optional for both Class II Type A2 & B2. The front window is adjustable by a foot switch or touching panel and free of manual control, which would reduce chance of infection substantially.



Display Panel for Class II Type B2

Downflow Velocity / Volume  
 Inflow Velocity / Volume  
 Temperature  
 Cumulative Working Time  
 System Status  
 Filter Life Indicator

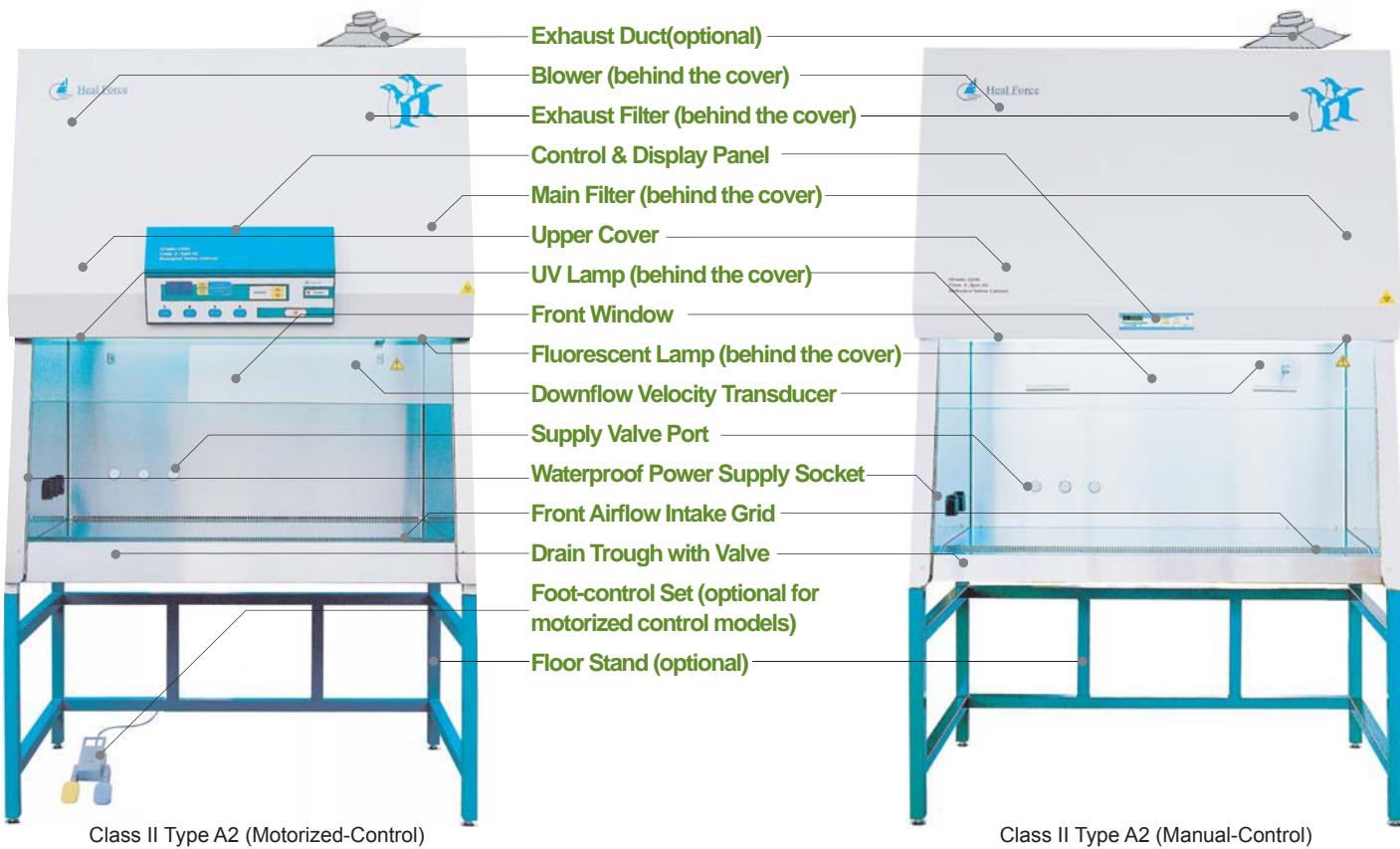


Control Panel for Class II Type A2 (Manual-Control)

Downflow Velocity / Volume  
 Inflow Velocity / Volume  
 Temperature  
 Cumulative Working Time  
 Circulation  
 Menu

# Class II Type A2 Biological Safety Cabinet

## (Manual & Motorized Control)



### Exhaust Duct

Through exhaust duct, Class II Type A2 biological safety cabinet is compatible with exhaust system (optional & customizable), whose function is to exhaust potentially contaminated air outside the cabinet and room.

### Upper Cover

Removable upper cover simplifies filter replacement and blower maintenance.

### Front Window

Front window consists of frameless laminated glass and toughened glass and UV-resistant glass, automatically sliding (Motorized-control) or handle adjustment (Manual-control).

### Control & Display Panel

Panel indicates information on downflow and inflow velocity, filter life, pressure, temperature and system status, with precise alarm system. Password protection is for front window control (Motorized-control models only).

### Drain Trough with Valve

Volume of trough is over 4 litres, equipped with drainage valve and easy to clean.

### UV Lamp

Interlocked and activated to work when fluorescent lamp and blower are turned off and front window is closed.

### Waterproof Socket

2 waterproof sockets are located in the side panel, for optimum convenience of using small devices inside the cabinet.

### Downflow Velocity Transducer

Transducer monitors real-time downflow velocity and displays result on the panel.

### Front Airflow Intake Grid

Aerodynamically designed front airflow intake grid eliminates potential turbulence and contamination.

### Extensible Valve Port

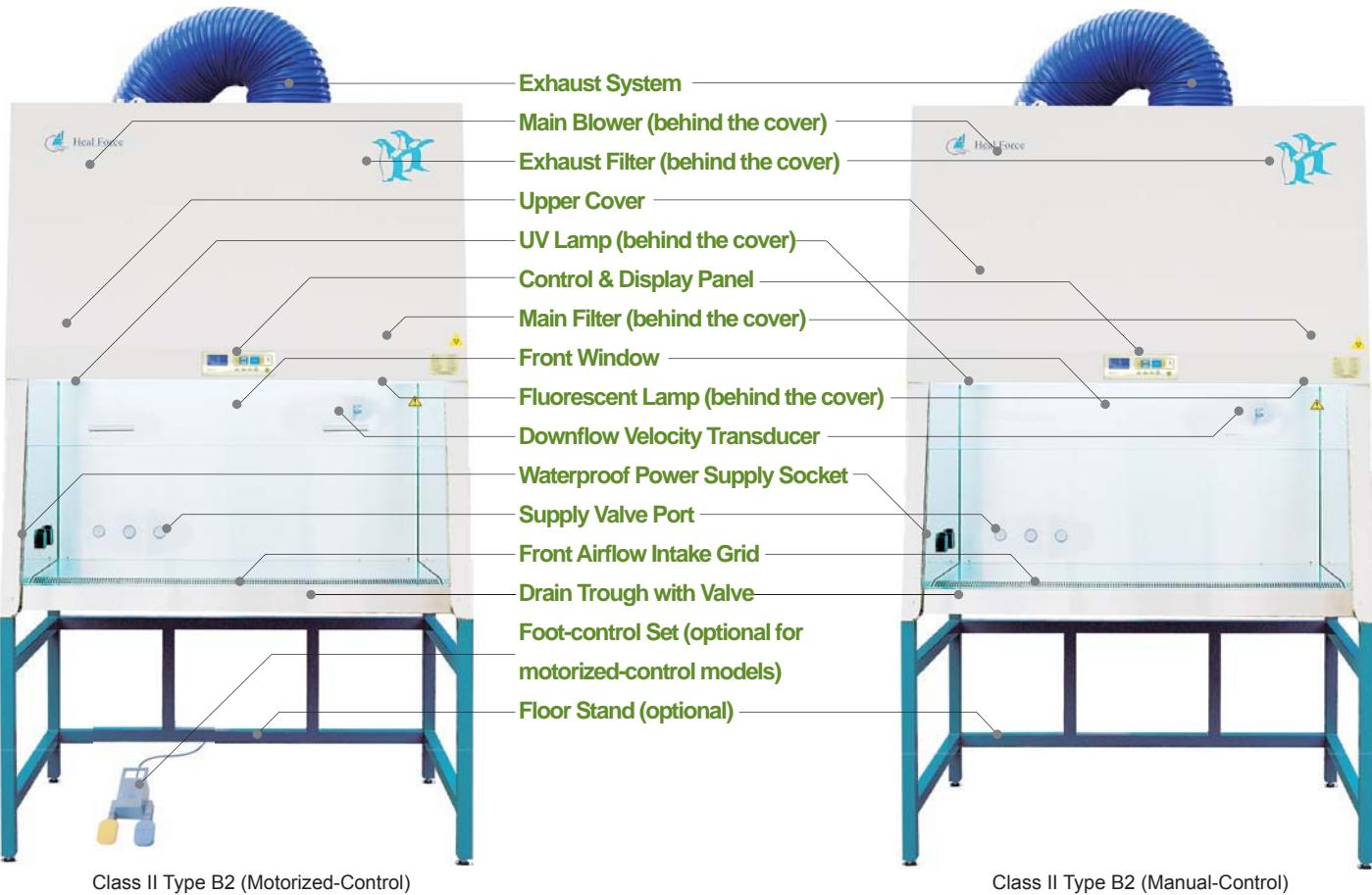
3 supply valve ports are available for extensive functions, compatible with liquid, gas and vacuum cartridge.

### Floor Stand (Optional)

2 styles optional floor stand, stationary (without casters) and moveable (with casters and/or brake).

# Class II Type B2 Biological Safety Cabinet

## (Manual & Motorized Control)



### Exhaust System

With the exhaust system, Class II Type B2 biological safety cabinet is able to exhaust potentially contaminated air outside the cabinet and room.

### Upper Cover

Removable upper cover simplifies filter replacement and blower maintenance.

### Front Window

Front window consists of frameless laminated glass and toughened glass and UV-resistant glass, automatically sliding (Motorized-control) or handle adjustment (Manual-control).

### Control & Display Panel

Panel indicates information on downflow and inflow velocity, filter life, pressure, temperature and system status, with precise alarm system.

### Floor Stand (optional)

2 styles of floor stand are optional, stationary (without casters) and moveable (with casters and/or brake).

### Drain Trough with Valve

Volume of trough is over 4 litres, equipped with drainage valve and easy to clean.

### UV Lamp

Interlocked UV lamp is controlled to work when fluorescent lamp and blower are turned off and front window is closed.

### Waterproof Socket

2 waterproof sockets are located in the side panel, for optimum convenience of using small accessorial devices inside or by the cabinet.

### Downflow Velocity Transducer

Transducer monitors real-time downflow velocity and displays result on the panel.

### Front Airflow Intake Grid

Aerodynamically designed front airflow intake grid eliminates potential turbulence and contamination.

### Supply Valve Port

3 supply valve ports are available for extensive functions, compatible with liquid, gas and vacuum valves.

### Exhaust Blower

Besides the routine blower, a blower is equipped in exhaust system for more powerful exhaust.

# Specifications

## Class II Type A2 Biological Safety Cabinet

Model	HFsafe-900	HFsafe-1200	HFsafe-1500
External Dimensions (W×D×H)(mm)*	1023×800×2260	1323×800×2260	1623×800×2260
Internal Dimensions (W×D×H)(mm)	900×600×678	1200×600×678	1500×600×678
Downflow Velocity (m/s)	0.35±0.025	0.35±0.025	0.35±0.025
Inflow Velocity (m/s)	0.53±0.025	0.53±0.025	0.53±0.025
Noise (dB)	<57	<59	<60
Lighting (Lux)	800~1100	800~1100	800~1100
Control System	Microprocessor		
Main Filter	Manual-control: ULPA (standard), HEPA (optional)**		
	Motorized-control: ULPA (standard) HEPA (optional)**		
Exhaust Filter	Manual-control: ULPA (standard), HEPA (optional)**		
	Motorized-control: ULPA (standard)HEPA (optional)**		
Filter Performance	HEPA filter: for particulate >0.3μm at 99.999%, output air quality class 100		
	ULPA filter: for particulate >0.1~0.2μm at 99.999%, output air quality class 10		
Filter Life Indicator	Manual-control: LED strip display		
	Motorized-control: LCD display		
Power Supply***	220V/50Hz (standard)		
	220V/60Hz or 110V/60Hz (optional)		220V/60Hz (optional)
Rated Power (W)	470	474	870
Net Weight (kg)	220	260	300

\*External dimensions include floor stand (optional accessory)

\*\*ULPA filters are optional for manual-control models and main & exhaust filters should be replaced together before ex-factory

\*\*\*Please contact us for more optional power supply information

## Class II Type B2 Biological Safety Cabinet

Model	HFsafe-900	HFsafe-1200	HFsafe-1500
External Dimensions (W×D×H)(mm)*	1023×800×2260	1323×800×2260	1623×800×2260
Internal Dimensions (W×D×H)(mm)	900×600×678	1200×600×678	1500×600×678
Downflow Velocity (m/s)	0.30±0.025	0.30±0.025	0.30±0.025
Inflow Velocity (m/s)	0.53±0.025	0.53±0.025	0.53±0.025
Exhaust Volume (m <sup>3</sup> /h)	923	1229	1537
Downflow Volume (m <sup>3</sup> /h)	578	771	964
Noise (dB)	<55	<57	<58
Lighting (Lux)	800~1100	800~1100	800~1100
Control System	Microprocessor		
Main Filter	ULPA		
Exhaust Filter	HEPA		
Filter Performance	ULPA filter: for particulate >0.1~0.2μm at 99.999%, output air quality class 10		
	HEPA filter: for particulate >0.3μm at 99.999%, output air quality class 100		
Filter Life Indicator	LCD display		
Power Supply**	220V/50Hz		
Rated Power (W)	880	889	1200
Net Weight (kg)	220	260	300

\*External dimensions include floor stand (optional accessory)

\*\*Currently no optional power supply available, please contact us for more optional power supply information

# Certificates Biological Safety Cabinet (Class II Type A2 & B2)

European Standard EN12469:2000  
Chinese Standard YY0569-2005



TÜV NORD EN12469  
(For HFsafe-900/1200, Standard Manual-control Model)

TÜV NORD GS  
(For HFsafe-900/1200, Standard Manual-control Model)

## Heal Force Laboratory Equipment



Laboratory Centrifuge



CO<sub>2</sub> Incubator



Water Purification System



Biological Safety Cabinet



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