

ADVANCED LABORATORY SYSTEM



COMPANY OVERVIEW

CHC LAB Co., Ltd., since the establishment in 1996, has been developing its own technology as a manufacturer of laboratory furniture, fume hood and laboratory equipment. After CHC LAB being registered as a SEFA (Scientific Equipment and Furniture Association) member in 2007 for the first time in Korea, Biological Safety Cabinet was certified by KS standard of Korea in 2008, and by NSF/ANSI standard 49 of USA in 2009, thus paved the way to enter the world science equipment industry market.

CHC LAB has been supplied to various laboratories such as government-invested organizations, education, pharmacy, medical, chemistry, cosmetics, bio-engineering, and food area etc., based on the accumulated technology power to perform the whole process of a laboratory layout, design, production, installation and validation.

CHC LAB will grow as a specialized company of lab-safety technology which is sustainable for more than a hundred years through the development of design and eco-friendly technology that can lead the world lab-safety technology.

CEO MESSAGE

How can safety be provided?

How can reliable quality be assured?

Endless concerning about safety was the beginning of the CHC LAB.

The laboratory furniture, fume hood, biological safety cabinet of CHC LAB which you will experience now will help you realize your research will safely on the endless change and innovation

The technology and quality which have been cultivated by us together with you with an unusual tenacity for safety will not be changed for more than 100 years to be opened from now on.

We would like to ask you observe with constant interest and faith the next 100 years' journey of CHC LAB to be newly spread for the establishment of the safety of researchers and laboratories.





SAFETY

Safety is the most important factor for laboratory equipment. CHC LAB's biological safety cabinets are manufactured in full compliance with the standards of NSF/ANSI 49, EN12469, KS J 0012, and guarantees safe research environments by supplying products with performance certifications.

Biological Safety Cabinet

for the establishment of safe test environment

biolus®

HEPA filter

LCD digital display panel

Sash alarm for the convenience and safety



- The sash alarm function is equipped for the safety of the researcher. The sash alarm will be activated in case sash level is out of preset level, e.g. 8 inches height.

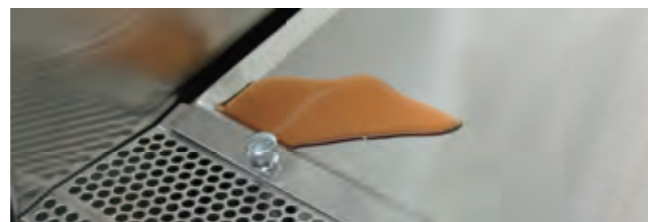
User friendly intake grille & armrest

- Wide intake grille and reserved air hole perfectly prevent the cross contamination of the inside and outside of a work table.
- Wide armrest reduces the degree of fatigue of a researcher's wrists.



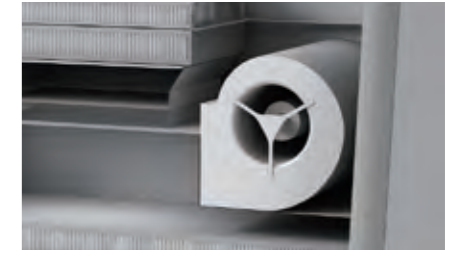
Dished work surface

- The work surface, which is easily disassembled from the equipment, is convenient for cleaning and maintenance.



High performance blower

- A blower supplying stable air flow assures the performance of low noise and non-vibration by optimizing parts and balance, and reduces the energy consumption.



Ergonomic design

- The inclined front structure is designed to reduce the glares occurring at time of work, or burden on the neck, arms etc., and enables the researcher's view to be closer to the work table.



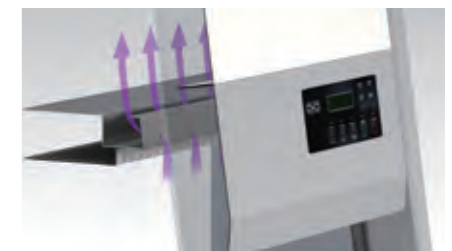
Easily extendable utility according to the environment and purpose of use

- The differential pressure gauge can cross check the abnormalities of the filter or air currents with the air velocity sensor through the real time checking of the negative pressure condition inside of the plenum.
- One utility valve will be provided in standard, and up to four valves can be equipped.
- Each one electrical receptacle with safety cover (220V/60Hz) will be provided at left and right side in standard. Electrical receptacles such as 115V/60Hz and 220V/50Hz are also available.



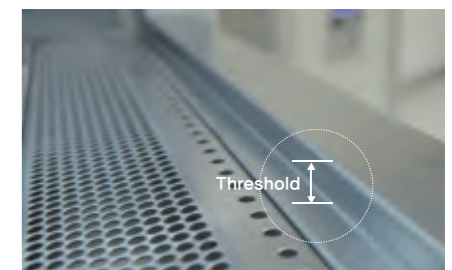
Non-filtered air protection hole™

- It prevents the direct inflow of the unpurified outside air into the inside of the chamber through the gap between the body and door sash when the front door is opened.



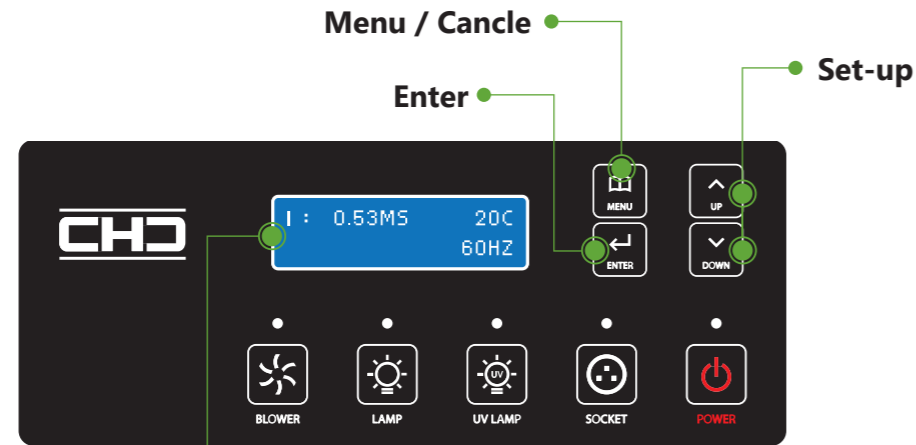
Threshold structure & UV light leak free guard

- The armrest of threshold structure makes the air current of the intake grille not to be disturbed by the researcher's arm, and perfectly blocks the UV light through the bottom crack of the door when the door is closed.



Biological Safety Cabinet Control System

Control of all operations of Biolus® BSC such as power on-off, blower on-off, lamp on-off, manager's password setting, timer setting (including UV light), setting of warm up timer and post purge timer with the single control system.



● LCD digital display panel

- Inflow air velocity, indoor temperature, electricity status etc. are displayed on the screen.
- Filter exchange time is known through the air velocity setting, display, and alarm function, indoor temperature display and alarm function, manager mode setting on-off, electricity status display and alarm function, alarm timer and alarm mute, used time display and alarm setting of filter and UV lamp.
- Warm up and post purge, which eliminate remaining air current after work, timer are available, password protection is available at the operation of important functions such as manager mode, setting mode etc. in order to enhance the safety in equipment operation.
- Blower and fluorescent lamp will be turned off automatically when the front window is closed.

● Useful functions

| | |
|---|---|
| ADMIN Password 0000 | 1. Setting 2. Timer |
| Admin password setting | Timer setting |
| 1) Warm Up Timer 2) Post Purge | 3) UV Timer 4) Alarm Timer |
| Warm up & Post purge setting | UV & Alarm time setting |
| 4) Filter Expire 08000 Hour | |
| Filter expire setting | |

Paper Catch

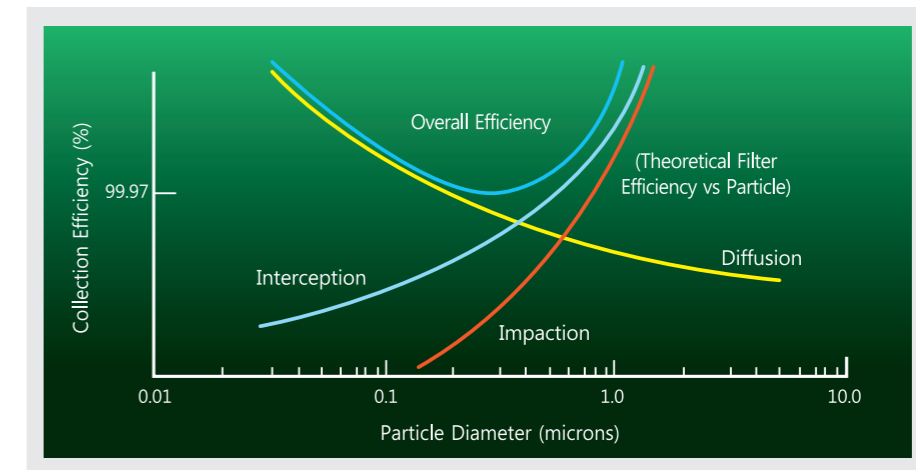
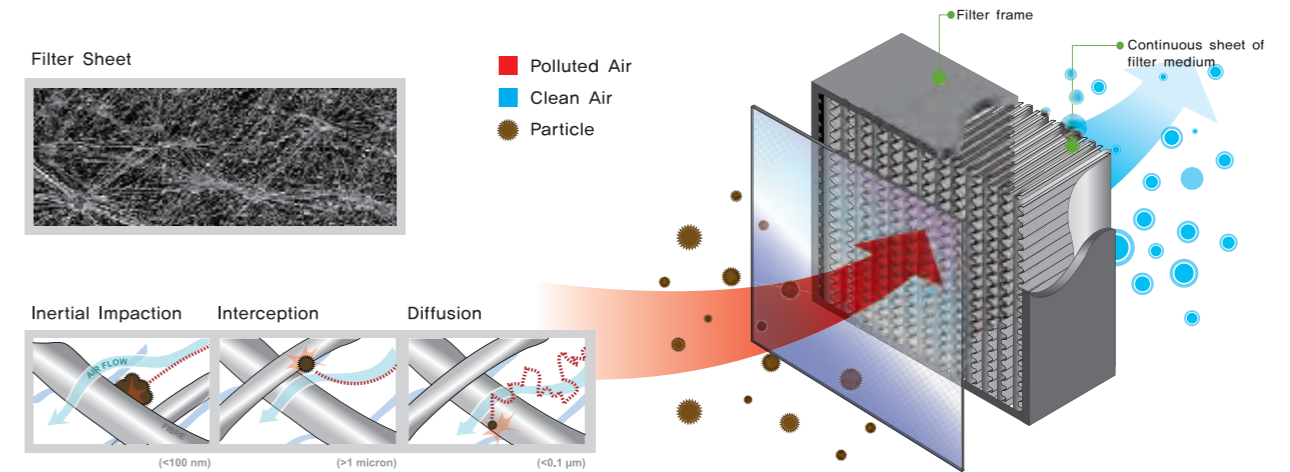
Paper catch is designed to prevent the foreign substances dropped on the work tray from being sucked into the plenum.



Biological Safety Cabinet HEPA filter which eliminates the minute particles of 0.3µm by 99.99%

Filtering efficiency rate is higher than 99.99% based on the minute particle of 0.3µm, and this filtering efficiency is enhanced at the particles below and above 0.3µm by three principles; inertial impaction, interception and diffusion. (NSF 49, EN 12469 Standard on Filter Efficiency: >99.99% at 0.3µm)

● HEPA filter



Filteration System

Advantages

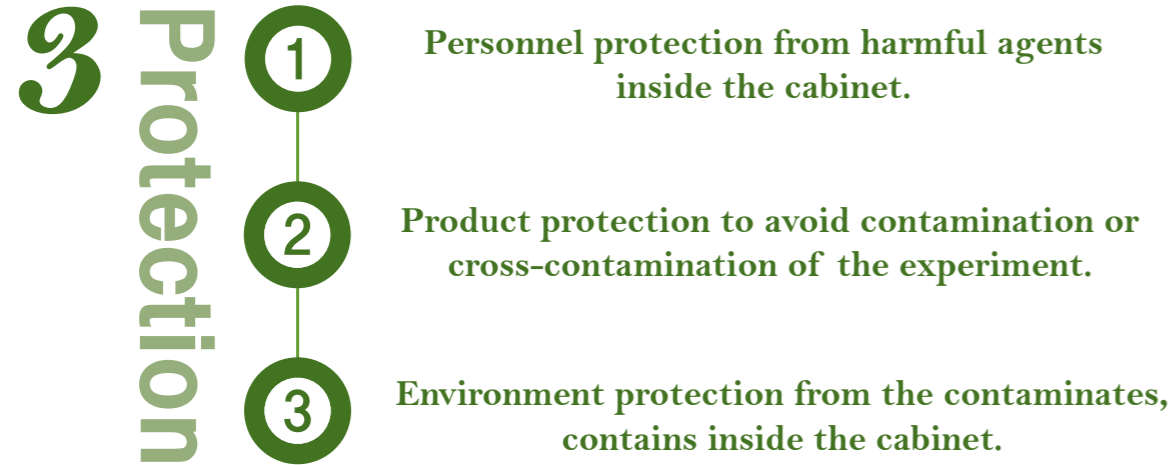
- Low pressure drop
- Higher flow rate
- Longer operating life
- Individually tested according to EN 1822

Description

| | |
|----------------------|---------------------------------|
| Frame | Extruded and anodised aluminium |
| Gasket | Polyurethane endless at inlet |
| Media | Glass fiber paper |
| Separator | Hot-melt beads |
| Sealant | Polyurethane |
| MPPS efficiency | H14 ≥ 99.995% |
| EN 1822 filter class | H14, U15 |

Biological Safety Cabinet biolus[®] Biological Safety Cabinet

The biological safety cabinet perfectly eliminates the possibility that the contaminated air which contains biological danger could be leaked out of the cabinet. It provides three protections.



It is an essential item for all laboratories where microorganisms of biological safety level 1 ~ 3 are treated, clinic pathologic test room, and biological medicines production site.

• Classification of Biological Safety Levels

BSL 1

It is suitable for work involving biological agents not to cause disease in healthy adult humans, and of minimal potential hazard to laboratory personnel and the environment.

Representative microbe

- E.coli
- Bacillus subtilis
- Naegleria gruberi

BSL 2

It is suitable for work involving biological agents to pose moderate potential hazard to personnel and the environment. It includes various bacteria and viruses that cause only mild disease to humans. Effective treatment and preventive measure is available.

Representative microbe

- Vibrio cholerae
- E.coli
- Hepatitis virus
- Measles virus

BSL 3

It is required for work involving indigenous or exotic agents where the potential for infection is real and the disease may have serious or lethal consequences. It can cause severe to fatal disease in humans but for which treatments exist.

Representative microbe

- Bacillus anthracis
- Brucella abortus
- Yersinia pestis

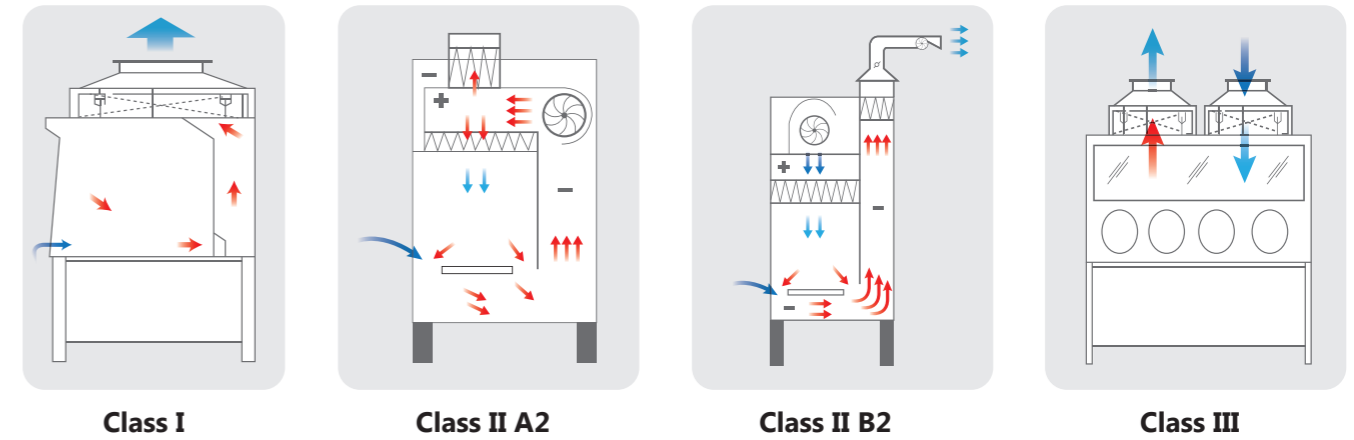
BSL 4

It is required for work with dangerous and exotic agents that pose a high individual risk of aerosol-transmitted laboratory infections, agents which cause severe to fatal disease in humans for which vaccines or other treatments are not available.

Representative microbe

- Ebola virus
- Marburg virus
- Lassa virus
- Nipha virus

• Biological Safety Cabinet Classifications



※ In 2002, NSF verified the current classification for biological safety cabinet.

• Biological Safety Cabinet Type

| Type | Airflow | Protection | Biosafety level |
|-----------|--|-----------------------------------|-----------------|
| Class I | 100% Exhausted | Personnel, Environment | BSL 1 |
| Class II | A2 30% Exhausted 70% Recirculate | Personnel, Environment Product | BSL 1~3 |
| | B2 100% Exhausted | | BSL 1~3 |
| Class III | 100% Exhausted Glove box | | |

• Biological Safety Cabinet Type List

Available 3ft, 4ft, 5ft, 6ft

| Type | Model number | Certification |
|------------------|-----------------------------|--|
| Class I | CHC-100-04 | - |
| Class II Type A2 | CHC-111A2-04 | - |
| | CHC-222A2-03 / 04 / 05 / 06 | Health Protection Agency EN 12469 CE |
| | CHC-777A2-03 / 04 / 06 | NSF UL IKG NSF 49 E 323747 KS 12006 |
| Class II Type B2 | CHC-888B2- 04 / 06 | NSF UL NSF 49 E 323747 |

※ For present status of certification, please refer to model-by-model specifications and our homepage.

※ CHC-111A2 series is produced in accordance with the above-mentioned certification technical standards.

biolus[®] BSC CHC-100 Biological Safety Cabinet | Class I

CHC-100 of BSC Class I is a biological safety cabinet that is used to protect the researcher and research environment, and to treat the microorganism that is less dangerous.



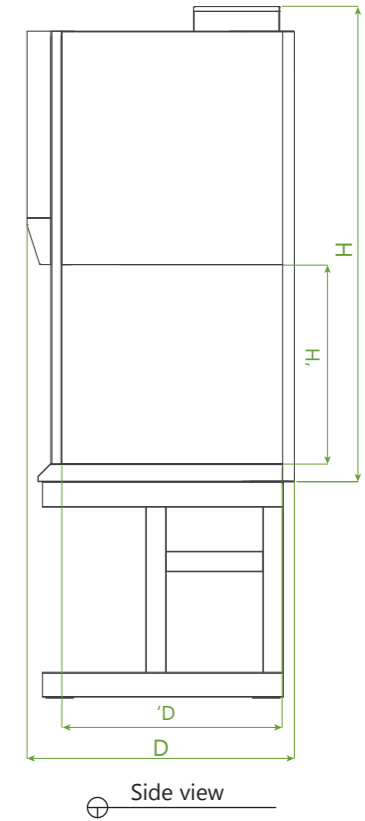
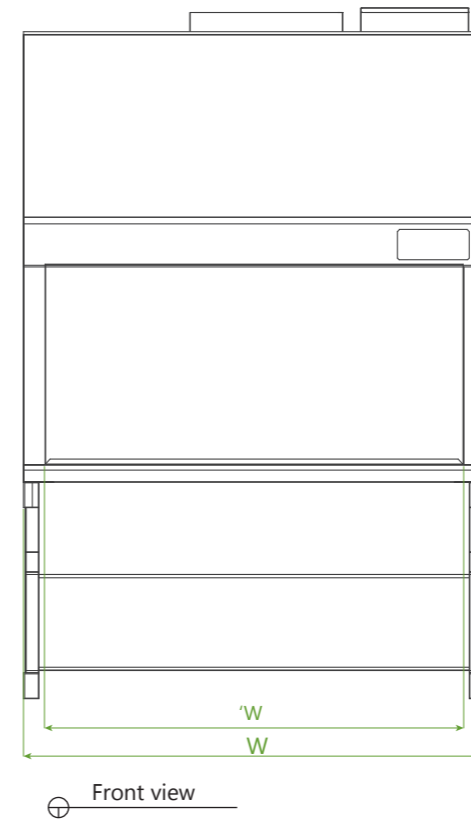
Airflow

- Room air
- HEPA filtered air
- Contaminated air under negative pressure



Unit : mm

W : Width D : Depth H : Height



| General specification | | Model No. | CHC-100 |
|-----------------------|------------------------------|---|-----------|
| | | | 04 |
| Dimension | Exterior | W / mm | 1340 |
| | | D / mm | 777 |
| | | H / mm | 1300 |
| | Interior | 'W / mm | 1219 |
| | | 'D / mm | 560 |
| | | 'H / mm | 584 |
| Color | | Gray | |
| Door | | Basic - Tempered safety glass 5mm / Option - Acrylic panel door | |
| Control panel | | LCD display panel | |
| Required sash level | | 203mm (8inch) | |
| Material | External material | SPCC / AL with epoxy powder coated | |
| | Chamber material | Stainless steel 304 | |
| Performance | Certification | X | |
| | Avg. inflow velocity (m/s) | 0.4 (79fpm) | |
| | Avg. downflow velocity (m/s) | - | |
| | Filter efficiency | HEPA filter > 99.995% at 0.3μm | |
| | Noise level (db) | < 65db(A) | |
| | Nominal Exhaust volume | 357CMH | |
| | Safety alarm system | UV timer | |

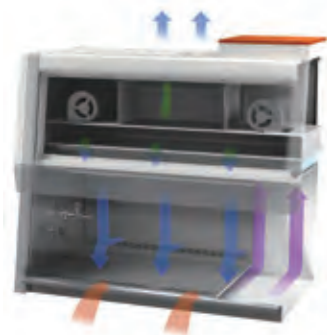
※ SPCC : Steel plate cold commercia

| General specification | | Model No. | CHC-100 |
|-------------------------|---|-------------------------------|-----------|
| | | | 04 |
| Electrical | Power supply | 110/220V, 50/60Hz (available) | |
| | FL lamp | 36W x 1EA | |
| | UV lamp | 30W x 1EA | |
| | Power receptacle | 2EA | |
| | Exhaust | Duct (Ø) | X |
| Hard exhaust connection | | X | |
| Airtight damper | | X | |
| Exhaust airflow sensor | | X | |
| Etc | Utility valve | 1EA (vacuum) | |
| | Differential pressure gauge | Option | |
| Option | <ul style="list-style-type: none"> · Additional service valves (gas, air, water) · Exhaust airflow sensor with monitor · Side window | | |
| | ■ Support stand (option) | | |
| | Support frame | | Height |
| Caster | Urethane | / mm | 103 |

biolus[®] BSC CHC-111A2

Biological Safety Cabinet | Class II Type A2

CHC-111 A2 is a BSC Class II A2 type in economic version, and is a biological safety cabinet that is used to protect the researcher, product and environment. 70 % of the airflow at work space is re-circulated through the HEPA filter, and 30% of it is exhausted to the outside through HEPA filter, and the polluted airflow is not leaked as perfectly surrounded by the negative pressure.



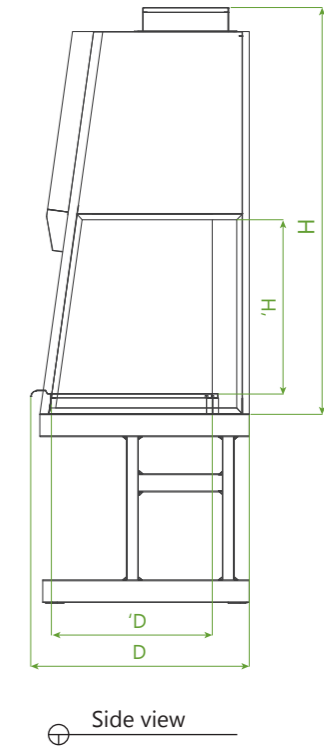
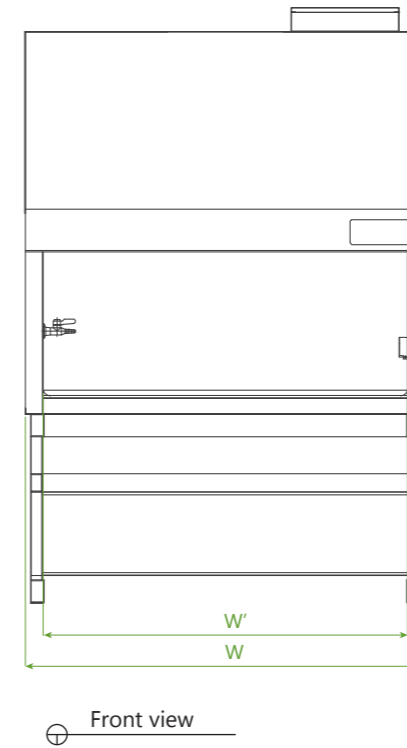
Airflow

- Room air
- HEPA filtered air
- Contaminated air under negative pressure
- Contaminated air under positive pressure



Unit : mm

W : Width D : Depth H : Height



| General specification | | Model No. | CHC-111A2 |
|-----------------------|------------------------------|-----------|---|
| | | | 04 |
| Dimension | Exterior | W/mm | 1340 |
| | | D/mm | 700 |
| | | H/mm | 1360 |
| | Interior | 'W/mm | 1220 |
| | | 'D/mm | 539 |
| | | 'H/mm | 581 |
| Color | | | Gray |
| Door | | | Tempered safety glass 5mm |
| Control panel | | | LCD display panel |
| Required sash level | | | 203mm (8inch) |
| Material | External material | | SPCC / AL with epoxy powder coated |
| | Chamber material | | Stainless steel 304 |
| Performance | Certification | | X |
| | Avg. inflow velocity (m/s) | | 0.25 ~ 0.35 |
| | Avg. downflow velocity (m/s) | | 0.3 ~ 0.4 |
| | Filter efficiency | | HEPA filter > 99.995% at 0.3μm |
| | Noise level (db) | | < 62db(A) |
| | Exhaust volume | | 312CMH |
| | Safety alarm system | | UV timer, UV inter lock, UV safety sensor |

※ SPCC : Steel plate cold commercia

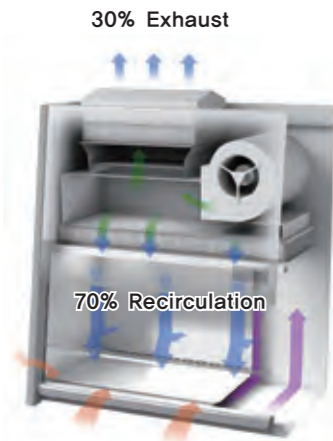
| General specification | | Model No. | CHC-111A2 | |
|-----------------------|---|-----------------|-------------------------------|-----|
| | | | 04 | |
| Electrical | Power supply | | 110/220V, 50/60Hz (available) | |
| | FL lamp | | 36W x 1EA | |
| | UV lamp | | 30W x 1EA | |
| | Power receptacle | | 2EA | |
| Exhaust | Duct (Ø) | | X | |
| | Exhaust connection | | Option | |
| | Air tight damper | | X | |
| | Exhaust airflow sensor | | X | |
| Etc | Utility valve | | 1EA (vacuum) | |
| | Differential pressure gauge | | O | |
| Option | <ul style="list-style-type: none"> · Stainless steel IV bar · Additional service valves (gas,air, water) · Exhaust canopy connection · Stainless steel 316 internal material (excellent corrosion resistance) | | | |
| | ■ Support stand (option) | | | |
| | Support frame | | Height | 633 |
| | Caster | Urethane | / mm | 103 |

biolus® BSC CHC-222A2

Biological Safety Cabinet | Class II Type A2



CHC-222 A2 is a product of BSC Class II Type A2, which can protect effectively all of the researcher, product and environment. 70 % of the airflow at work space is re-circulated through the HEPA Filter, and 30% of it is exhausted to the outside through HEPA filter, and the polluted airflow is not leaked as perfectly surrounded by the negative pressure. Especially, the inclined front structure reduces the glares, or burden on the neck, arms etc.



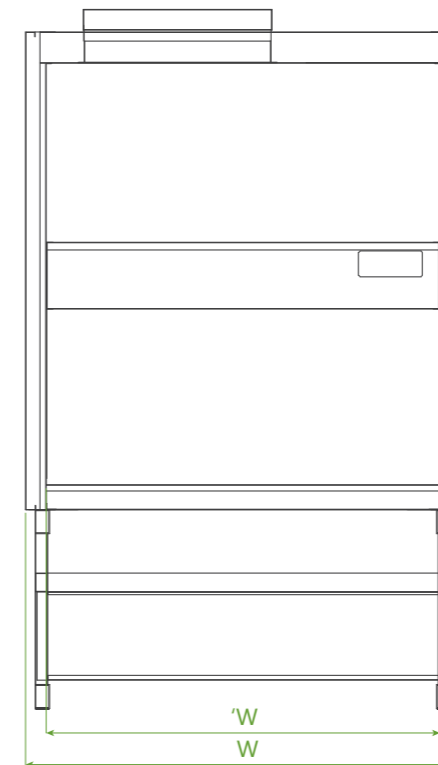
Airflow

- Room air
- HEPA filtered air
- Contaminated air under negative pressure
- Contaminated air under positive pressure

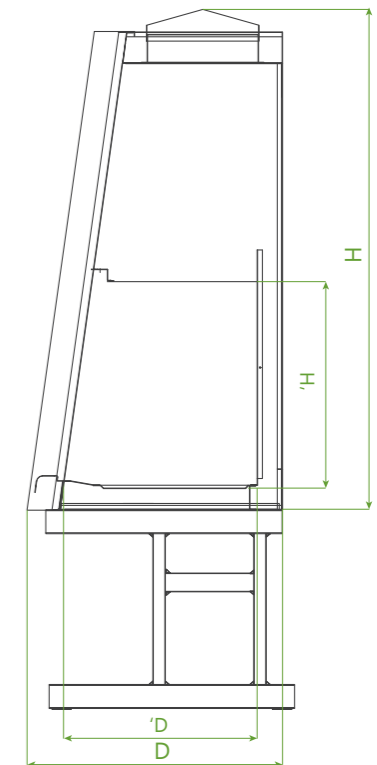


Unit : mm

W : Width D : Depth H : Height



Front view



Side view

| General specification | | Model No. | CHC-222A2 | | | |
|-----------------------|------------------------------|--|--------------|-----------|--------------|------|
| | | | 03 | 04 | 05 | 06 |
| Dimension | Exterior | W/mm | 1060 | 1385 | 1690 | 1995 |
| | | D/mm | 810 | | | |
| | | H/mm | 1590 | | | |
| | Interior | 'W/mm | 925 | 1250 | 1555 | 1860 |
| | | 'D/mm | 615 | | | |
| | | 'H/mm | 655 | | | |
| Color | Gray | | | | | |
| Door | 6.38mm Laminated glass | | | | | |
| Control panel | LCD display panel | | | | | |
| Required sash level | 203mm (8inch) | | | | | |
| Material | External material | SPCC / AL with epoxy powder coated | | | | |
| | Chamber material | Stainless steel 304 | | | | |
| Performance | Certification | - | EN 12469, CE | - | EN 12469, CE | |
| | Avg. inflow velocity (m/s) | 0.53 (105fpm) | | | | |
| | Avg. downflow velocity (m/s) | 0.35 (70fpm) | | | | |
| | Filter efficiency | HEPA filter > 99.99% at 0.3µm | | | | |
| | Noise level (db) | < 64db(A) | | < 65db(A) | | |
| | Exhaust volume | 358CMH | 484CMH | 602CMH | 720CMH | |
| | Safety alarm system | Warm up & Post purge, UV lamp interlock, UV timer, UV safety sensor, Door sensor, Alarm system | | | | |

* SPCC : Steel plate cold commercia

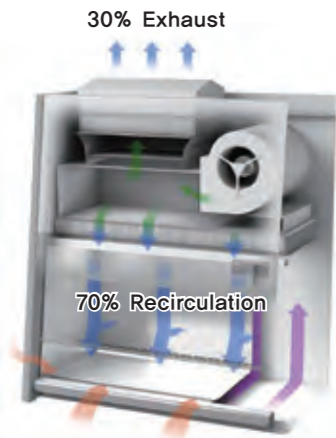
| General specification | | Model No. | CHC-222A2 | | | |
|-----------------------|---|-------------------------------|-----------|-----|----|----|
| | | | 03 | 04 | 05 | 06 |
| Electrical | Power supply | 110/220V, 50/60Hz (available) | | | | |
| | FL lamp | 36W x 2EA | | | | |
| | UV lamp | 30W x 1EA | | | | |
| | Power receptacle | 2EA | | | | |
| Exhaust | Duct (Ø) | X | | | | |
| | Exhaust connection | Option | | | | |
| | Air tight damper | X | | | | |
| | Exhaust airflow sensor | X | | | | |
| Etc | Utility valve | 1EA (vacuum) | | | | |
| | Differential pressure gauge | O | | | | |
| Option | <ul style="list-style-type: none"> · Stainless steel IV bar · Additional service valves (gas, air, water) · Exhaust canopy connection · ULPA filter · Stainless steel 316 Internal material (excellent corrosion resistance) | | | | | |
| | ■ Support stand (option) | | | | | |
| | Support frame | | Height | 633 | | |
| | Caster | Urethane | / mm | 103 | | |

biolus[®] BSC CHC-777A2

Biological Safety Cabinet | Class II Type A2



CHC-777 A2 is a product of BSC Class II Type A2, which can protect effectively all of the researcher, product and environment. 70 % of the airflow at work space is re-circulated through the HEPA filter, and 30% of it is exhausted to the outside through HEPA filter, and the polluted airflow is not leaked as perfectly surrounded by the negative pressure. Especially, the inclined front structure reduces the glares, or burden on the neck, arms etc.



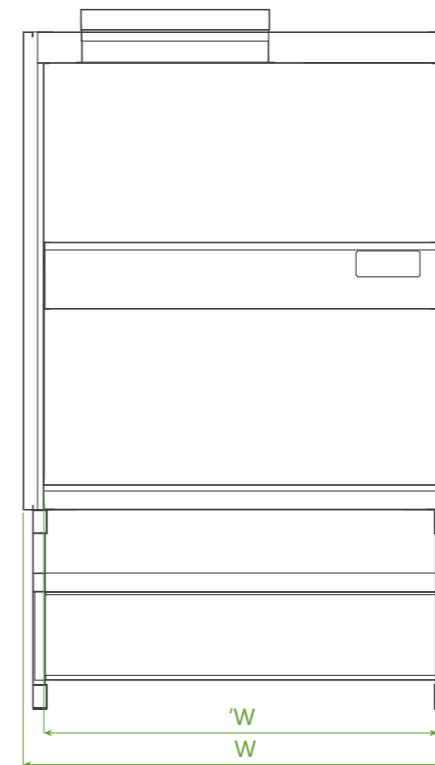
Airflow

- Room air
- HEPA filtered air
- Contaminated air under negative pressure
- Contaminated air under positive pressure

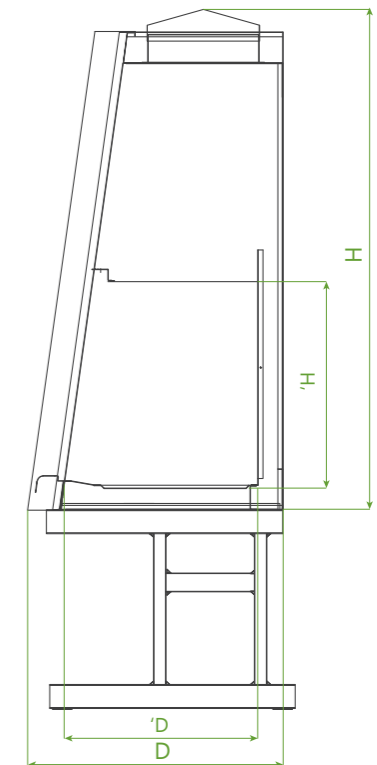


Unit : mm

W : Width D : Depth H : Height



⊕ Front view



⊕ Side view

| General specification | | Model No. | CHC-777A2 | | | |
|-----------------------|------------------------------|--|-----------|---------------|---------------------------|------|
| | | | 03 | 04 | 05 | 06 |
| Dimension | Exterior | W/mm | 1060 | 1385 | 1690 | 1995 |
| | | D/mm | 810 | | | |
| | | H/mm | 1590 | | | |
| | Interior | 'W/mm | 925 | 1250 | 1555 | 1860 |
| | | 'D/mm | 615 | | | |
| | | 'H/mm | 655 | | | |
| Color | Gray | | | | | |
| Door | 6.38mm Laminated glass | | | | | |
| Control panel | LCD digital display panel | | | | | |
| Required sash level | 203mm (8inch) | | | | | |
| Material | External material | SPCC / AL with epoxy powder coated | | | | |
| | Chamber material | Stainless steel 304 | | | | |
| Performance | Certification | NSF/ANSI 49, UL, KS I 2006 | | UL, KS J 0012 | NSF/ANSI 49, UL KS I 2006 | |
| | Avg. inflow velocity (m/s) | 0.53 (105fpm) | | | | |
| | Avg. downflow velocity (m/s) | 0.35 (70fpm) | | | | |
| | Filter efficiency | HEPA filter > 99.99% at 0.3μm | | | | |
| | Noise level (db) | < 64db(A) | | < 65db(A) | | |
| | Exhaust volume | 358CMH | 484CMH | 602CMH | 720CMH | |
| | Safety alarm system | Warm up & Post purge, UV lamp interlock, UV timer, UV safety sensor, Door sensor, Alarm system | | | | |

※ SPCC : Steel plate cold commercia

| General specification | | Model No. | CHC-777A2 | | | |
|-----------------------|---|-------------------------------|-----------|-----|----|----|
| | | | 03 | 04 | 05 | 06 |
| Electrical | Power supply | 110/220V, 50/60Hz (available) | | | | |
| | FL lamp | 36W x 2EA | | | | |
| | UV lamp | 30W x 1EA | | | | |
| | Power receptacle | 2EA | | | | |
| Exhaust | Duct (Ø) | X | | | | |
| | Exhaust connection | Option | | | | |
| | Air tight damper | X | | | | |
| Etc | Exhaust airflow sensor | O | | | | |
| | Utility valve | 1EA (vacuum) | | | | |
| | Differential pressure gauge | O | | | | |
| Option | <ul style="list-style-type: none"> · Stainless steel IV bar · Additional service valves (gas, air, water) · Exhaust canopy connection · ULPA filter · Stainless steel 316 internal material (excellent corrosion resistance) | | | | | |
| | ■ Support stand (option) | | | | | |
| | Support frame | | Height | 633 | | |
| | Caster | Urethane | / mm | 103 | | |

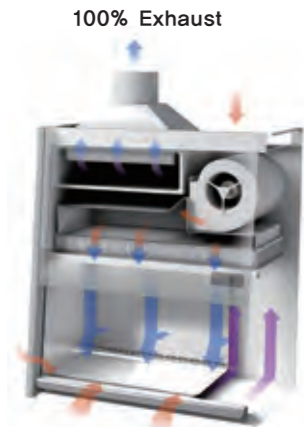
biolus[®] BSC CHC-888B2

Biological Safety Cabinet | Class II Type B2



CHC-888B2 is a product of BSC Class II Type B2, which protects all of the researcher, product and environment, and exhausts all of 100% of the air that passed the work space to the outside through the HEPA filter. Hard exhaust connection, airtight damper, exhaust airflow sensor will be provided in standard, and in case of the abnormal outside exhaust air volume, operation of the blower is immediately stopped for the safety.

100% Exhaust

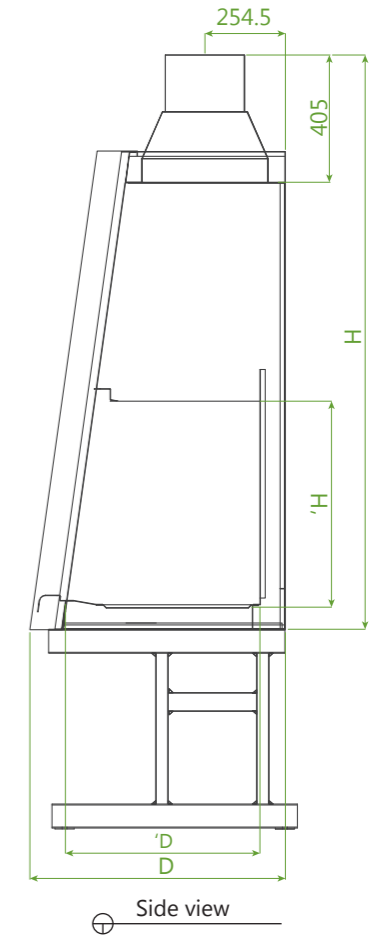
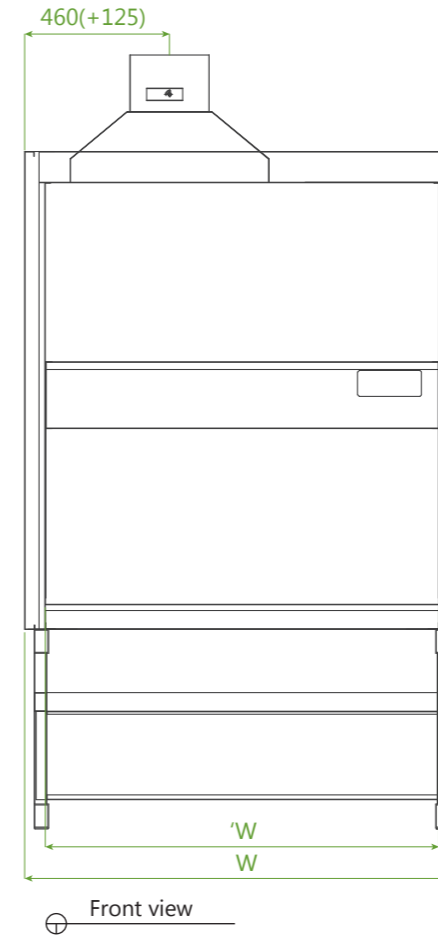


Airflow

- Room air
- HEPA filtered air
- Contaminated air under negative pressure

Unit : mm

W : Width D : Depth H : Height



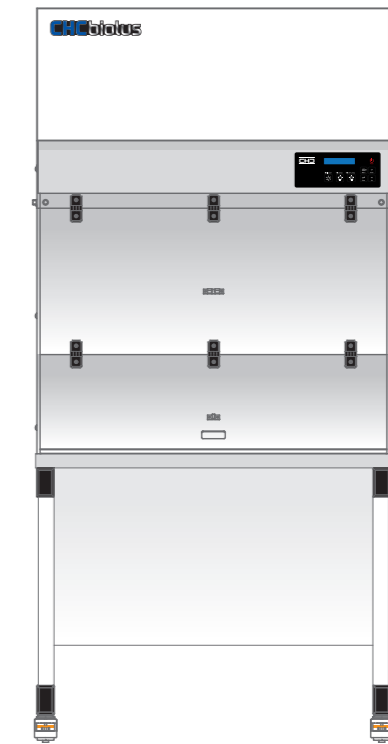
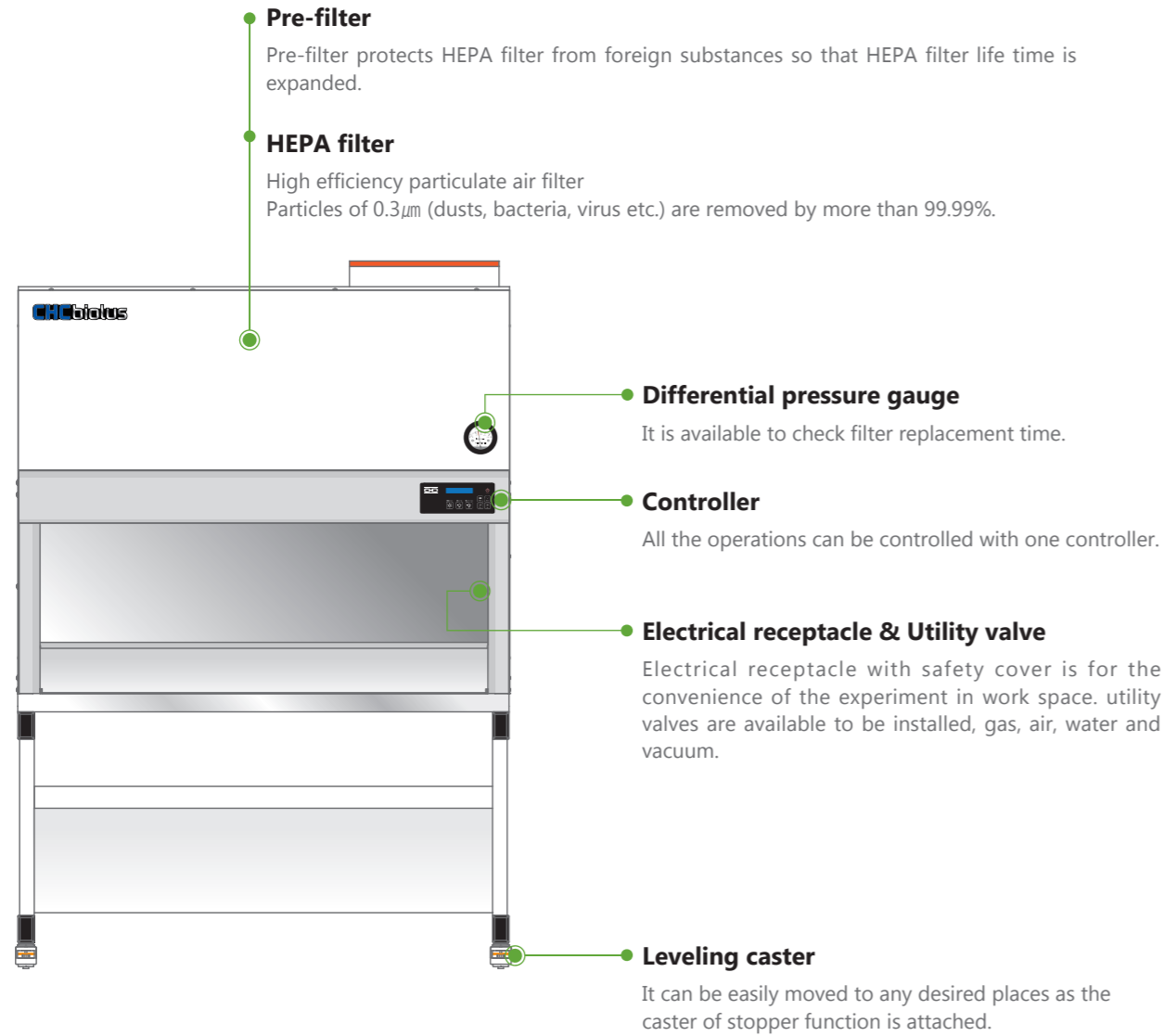
| General specification | | Model No. | CHC-888B2 | |
|-----------------------|------------------------------|--|-----------|------|
| | | | 04 | 06 |
| Dimension | Exterior | W/mm | 1385 | 1995 |
| | | D/mm | 810 | |
| | | H/mm | 1825 | |
| | Interior | 'W/mm | 1250 | 1860 |
| | | 'D/mm | 615 | |
| | | 'H/mm | 655 | |
| | Color | Gray | | |
| Door | 6.38mm Laminated glass | | | |
| Control panel | LCD digital display panel | | | |
| Required sash level | 203mm (8inch) | | | |
| Material | External material | SPCC / AL with epoxy powder coated | | |
| | Chamber material | Stainless steel 304 | | |
| Performance | Certification | NSF/ANSI 49, UL | | |
| | Avg. inflow velocity (m/s) | 0.53 (105fpm) | | |
| | Avg. downflow velocity (m/s) | 0.30 (60fpm) | | |
| | Filter efficiency | HEPA filter > 99.995% at 0.3μm | | |
| | Noise level (db) | < 64db(A) | < 65db(A) | |
| | Exhaust volume | 1390 CHM | 2092 CHM | |
| | Static duct pressure (mmAq) | 60.1 | 80.3 | |
| | Safety alarm system | Warm up & Post purge, UV lamp interlock, UV timer, UV safety sensor, Door sensor | | |

※ SPCC : Steel plate cold commercia

| General specification | | Model No. | CHC-888B2 | |
|-----------------------|--|-------------------------------|----------------------|--------|
| | | | 04 | 06 |
| Electrical | Power supply | 110/220V, 50/60Hz (available) | | |
| | FL lamp | 36W x 2EA | | |
| | UV lamp | 30W x 1EA | | |
| | Power receptacle | 2EA | | |
| Exhaust | Duct (Ø) | 200 or 250 | | |
| | Hard exhaust connection | ○ | | |
| | Air tight damper | ○ | | |
| Etc | Exhaust airflow sensor | ○ | | |
| | Utility valve | 1EA (vacuum) | | |
| Option | Differential pressure gauge | ○ | | |
| | <ul style="list-style-type: none"> · Stainless steel IV bar · Additional service valves (gas, air, water) · ULPA filter · Stainless steel 316 internal material (excellent corrosion resistance) | | | |
| | ■ Support stand (option) | | | |
| | | | Support frame | Height |
| Caster | Fixed foot (STS) | | / mm | 45 |

Laminar Flow Cabinet

biolus®



● Vertical laminar flow type cabinet

The test object is protected from the contamination as the clean air filtered through the HEPA filter is vertically generated from the ceiling area. It is generally suitable for the experiments under the aseptic, dust-free environment or precise examinations in the field of medicine, pharmacy, food etc., and it can be used as a consecutive production line by installing several units in a row, or the exhaust function of gas etc. can be added.

○ Laminar flow cabinet in ergonomic design



The inclined front structure is ergonomically designed to reduce the glares at time of work, or burden on the neck, spine, arms etc.

● Horizontal laminar flow cabinet

It is a horizontal airflow type with the filtered clean air flowing from the inside to the direction of the front entrance, and the inside of the chamber is maintained as positive pressure (+) without the front door, and clean work space is available at any points of the inside chamber by blocking the inflow of the outside air which can contaminate the specimen, and if any contaminated particles are occurred, they are promptly eliminated. It is mainly used for the blood agar plate work, experiment or work under the aseptic, dust-free environment.

● Laminar flow cabinet

The test object is protected from the contamination as the clean air filtered through the HEPA filter is vertically generated from the ceiling area, and it is suitable when the specimen with comparatively less danger of contamination is treated, or suitable for the experiment of DNA, RNA, and PCR.

biolus® B-CV / B-CV-T

Vertical Laminar Flow Cabinet



The clean air filtered through the HEPA filter forms the vertical airflow from the ceiling to the bottom area, and maintains the work space as positive pressure (+) with class 100 cleanliness.

Unit : mm

W : Width D : Depth H : Height

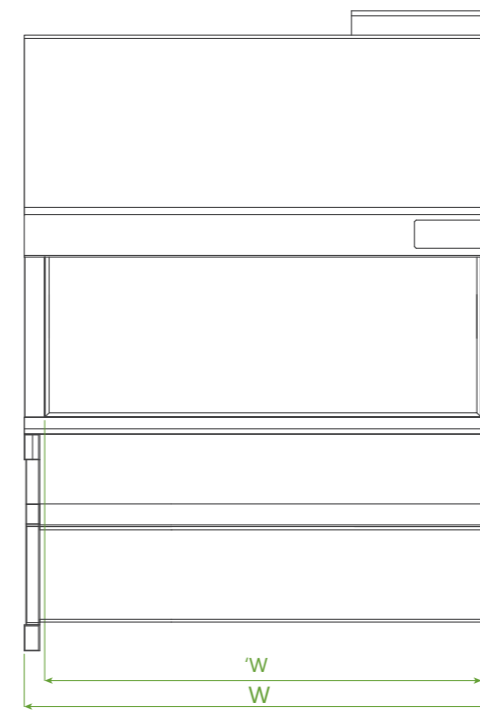
biolus®

B-CV-04
(CLB-201-04)

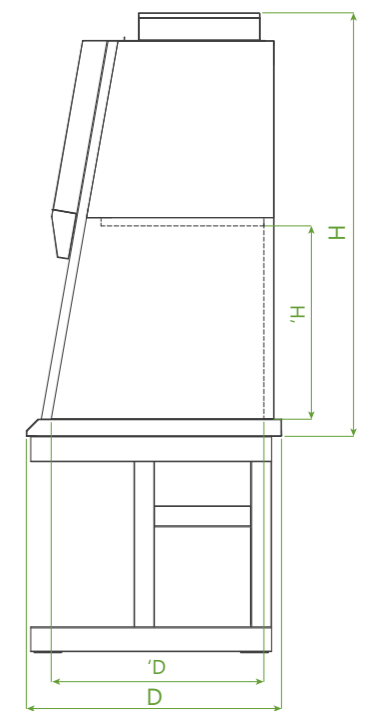


Airflow

- Room air
- HEPA filtered air



Front view



Side view

| General specification | | Model No. | B-CV (CLB-201) | | | |
|-----------------------|--|--|----------------|------|------|------|
| | | | 03 | 04 | 05 | 06 |
| Dimension | Exterior | W/mm | 1040 | 1340 | 1650 | 1960 |
| | | D/mm | 742 | | | |
| | | H/mm | 1231 | | | |
| | Interior | 'W/mm | 919 | 1219 | 1529 | 1839 |
| | | 'D/mm | 617 | | | |
| | | 'H/mm | 565 | | | |
| Color | Gray | | | | | |
| Door | Tempered safety glass 5mm | | | | | |
| Control panel | LCD digital display panel | | | | | |
| Material | External material | SPCC / AL with epoxy powder coated | | | | |
| | Interior material (worktop) | Stainless steel 304 | | | | |
| Support stand | Carbon steel pipes for ordinary piping | | | | | |
| Performance | Avg. downflow velocity (m/s) | 0.3 ~ 0.4 (variable set speed) | | | | |
| | Filter efficiency | HEPA filter > 99.995% at 0.3µm / ISO Class 5 | | | | |

※ SPCC : Steel plate cold commercia

| General specification | | Model No. | B-CV (CLB-201) | | | |
|-----------------------|---|-----------------------------------|----------------|-----------|----|----|
| | | | 03 | 04 | 05 | 06 |
| Performance | Certification | CE | | | | |
| | Pre-filter | Nylon filter | | | | |
| | Noise level (db) (Nominal set point) | ≤ 65db(A) | | | | |
| | Safety alarm system | UV timer | | | | |
| Electric | Power supply | 220V, 50/60Hz (110V is available) | | | | |
| | FL lamp | 36W x 1EA | | 36W x 2EA | | |
| | UV lamp | 20W x 1EA | 30W x 1EA | | | |
| Etc | Power receptacle | 1EA | | 2EA | | |
| | Utility valve | 1EA (vacuum) | | | | |
| | Differential pressure gauge | ○ | | | | |
| Option | Additional service valves (gas, air, water) | | | | | |
| | Utility hole | | | | | |
| | | ■ Support stand (option) | | | | |
| | | Support frame | Height / mm | 633 | | |
| | | Leveling caster | Height / mm | 82 | | |

biolus® B-CV-S / B-CV-ST

Vertical Laminar Flow Cabinet



The clean air filtered through the HEPA filter forms the vertical airflow from the ceiling to the bottom area, and maintains the work space as positive pressure (+) with class 100 cleanliness, and observation of the work surface is easy as observation window is equipped at both right and left sides.

Unit : mm

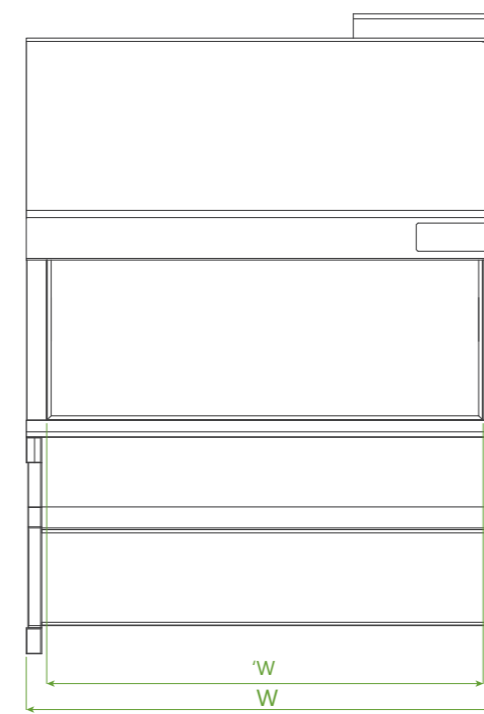
W : Width D : Depth H : Height

B-CV-04S
(CLB-201S-04)

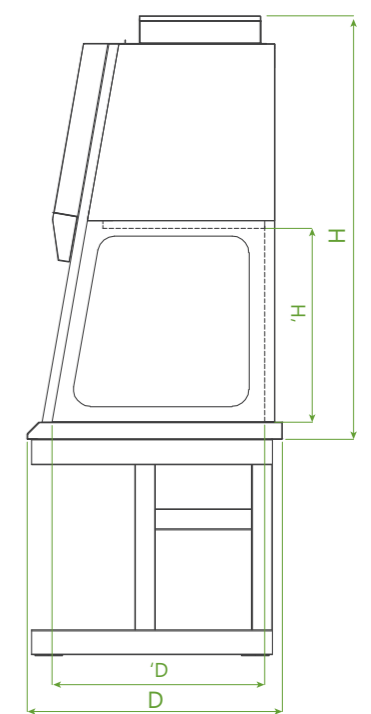


Airflow

- Room air
- HEPA filtered air



Front view



Side view

| General specification | | Model No. | B-CV-S (CLB-201S) | | | |
|-----------------------|------------------------------|---------------------------|--|------|------|------|
| | | | 03 | 04 | 05 | 06 |
| Dimension | Exterior | W / mm | 1040 | 1340 | 1650 | 1960 |
| | | D / mm | 742 | | | |
| | | H / mm | 1231 | | | |
| | Interior | 'W / mm | 919 | 1219 | 1529 | 1839 |
| | | 'D / mm | 617 | | | |
| | | 'H / mm | 565 | | | |
| Color | | Gray | | | | |
| Door | | Tempered safety glass 5mm | | | | |
| Control panel | | LCD digital display panel | | | | |
| Material | External material | | SPCC / AL with epoxy powder coated | | | |
| | Interior material (worktop) | | Stainless steel 304 | | | |
| | Support stand | | Carbon steel pipes for ordinary piping | | | |
| Performance | Avg. downflow velocity (m/s) | | 0.3 ~ 0.4 (variable set speed) | | | |
| | Filter efficiency | | HEPA filter > 99.995% at 0.3µm / ISO Class 5 | | | |

※ SPCC : Steel plate cold commercial

| General specification | | Model No. | B-CV-S (CLB-201S) | | | |
|-----------------------|---|-----------------------------------|--------------------------|-------------|-------------|-----|
| | | | 03 | 04 | 05 | 06 |
| Performance | Certification | CE | | | | |
| | Pre-filter | Nylon filter | | | | |
| | Noise level (db) (Nominal set point) | ≤ 65db(A) | | | | |
| | Safety alarm system | UV timer | | | | |
| | Power supply | 220V, 50/60Hz (110V is available) | | | | |
| Electric | FL lamp | 36W x 1EA | | 36W x 2EA | | |
| | UV lamp | 20W x 1EA | 30W x 1EA | | | |
| | Power receptacle | 1EA | | 2EA | | |
| Etc | Utility valve | 1EA (vacuum) | | | | |
| | Differential pressure gauge | 0 | | | | |
| Option | · Additional service valves (gas, air, water) | | ■ Support stand (option) | | | |
| | · Utility hole | | Support frame | | Height / mm | 633 |
| | | Leveling caster | | Height / mm | 82 | |

biolus® B-CH / B-CH-T

Horizontal Laminar Flow Cabinet

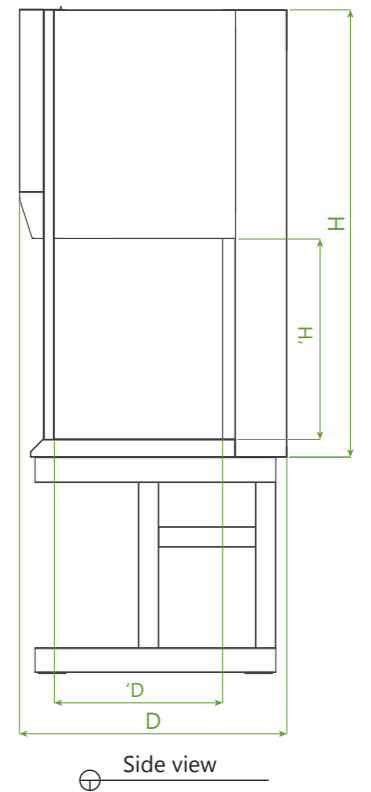
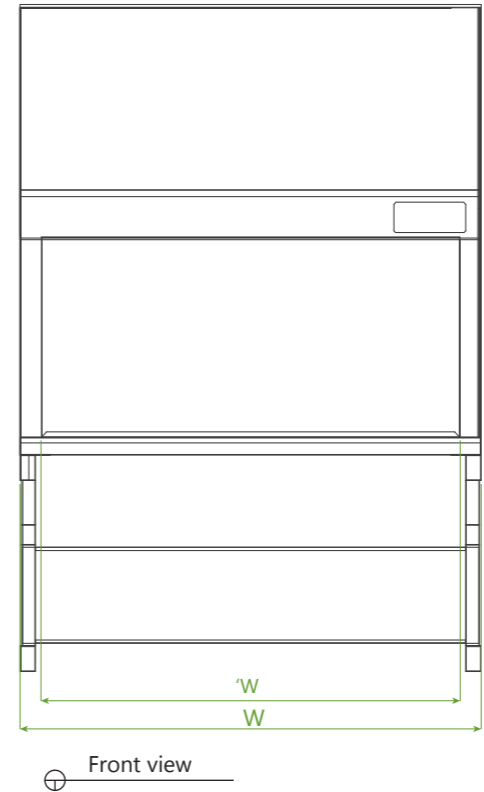


It is a horizontal airflow type that the clean air filtered through the HEPA filter flows from the inside the chamber to the direction of the front entrance, and the inflow of the outside air which can contaminate the specimen is blocked as the inside the chamber is maintained as positive pressure (+) without the front door. Clean work space at any points inside the chamber is available, and if any contaminated particles are generated, they are quickly eliminated. It is mainly used for the work of blood agar plate, experiment or work under the aseptic, non-vibration environment.

Unit : mm
W : Width **D** : Depth **H** : Height



Airflow
 ● Room air
 ● HEPA filtered air



| General specification | | Model No. | B-CH (CLB-202D) | | | |
|-----------------------|------------------------------|---|-----------------|------|------|------|
| | | | 03 | 04 | 05 | 06 |
| Dimension | Exterior | W/mm | 1040 | 1340 | 1650 | 1960 |
| | | D/mm | 777 | | | |
| | | H/mm | 1300 | | | |
| | Interior | 'W/mm | 919 | 1219 | 1529 | 1839 |
| | | 'D/mm | 520 | | | |
| | | 'H/mm | 584 | | | |
| Color | | Gray | | | | |
| Door | | Basic - Tempered safety glass 5mm / Option - Acrylic panel door | | | | |
| Control panel | | LCD digital display panel | | | | |
| Material | External material | SPCC / AL with epoxy powder coated | | | | |
| | Interior material (worktop) | Stainless steel 304 | | | | |
| Support stand | | Carbon steel pipes for ordinary piping | | | | |
| Performance | Avg. downflow velocity (m/s) | 0.3 ~ 0.4 (variable set speed) | | | | |
| | Filter efficiency | HEPA filter > 99.995% at 0.3µm / ISO Class 5 | | | | |

| General specification | | Model No. | B-CH (CLB-202D) | | | |
|------------------------|---|---|----------------------|-------------|-----|------------------------|
| | | | 03 | 04 | 05 | 06 |
| Performance | Certification | CE | | | | |
| | Pre-filter | Nylon filter | | | | |
| | Noise level (db) (Nominal set point) | ≤ 65db(A) | | | | |
| | Safety alarm system | UV timer | | | | |
| Electric | Power supply | 220V, 50/60Hz (110V is available) | | | | |
| | FL lamp | 36W x 1EA | | 36W x 2EA | | |
| | UV lamp | 20W x 1EA | 30W x 1EA | | | |
| Etc | Power receptacle | 2EA | | | | |
| | Utility valve | 1EA (vacuum) | | | | |
| | Differential pressure gauge | O | | | | |
| Option | · Additional service valve (gas, air, water) · Side windows | ■ Support stand (option) | | | | |
| | | <table border="1"> <tr> <td>Support frame</td> <td>Height / mm</td> <td>633</td> </tr> <tr> <td>Leveling caster</td> <td></td> <td>82</td> </tr> </table> | Support frame | Height / mm | 633 | Leveling caster |
| Support frame | Height / mm | 633 | | | | |
| Leveling caster | | 82 | | | | |

※ SPCC : Steel plate cold commercia

biolus® Clean Bench CLB-060 / 060F
Laminar Flow Cabinet



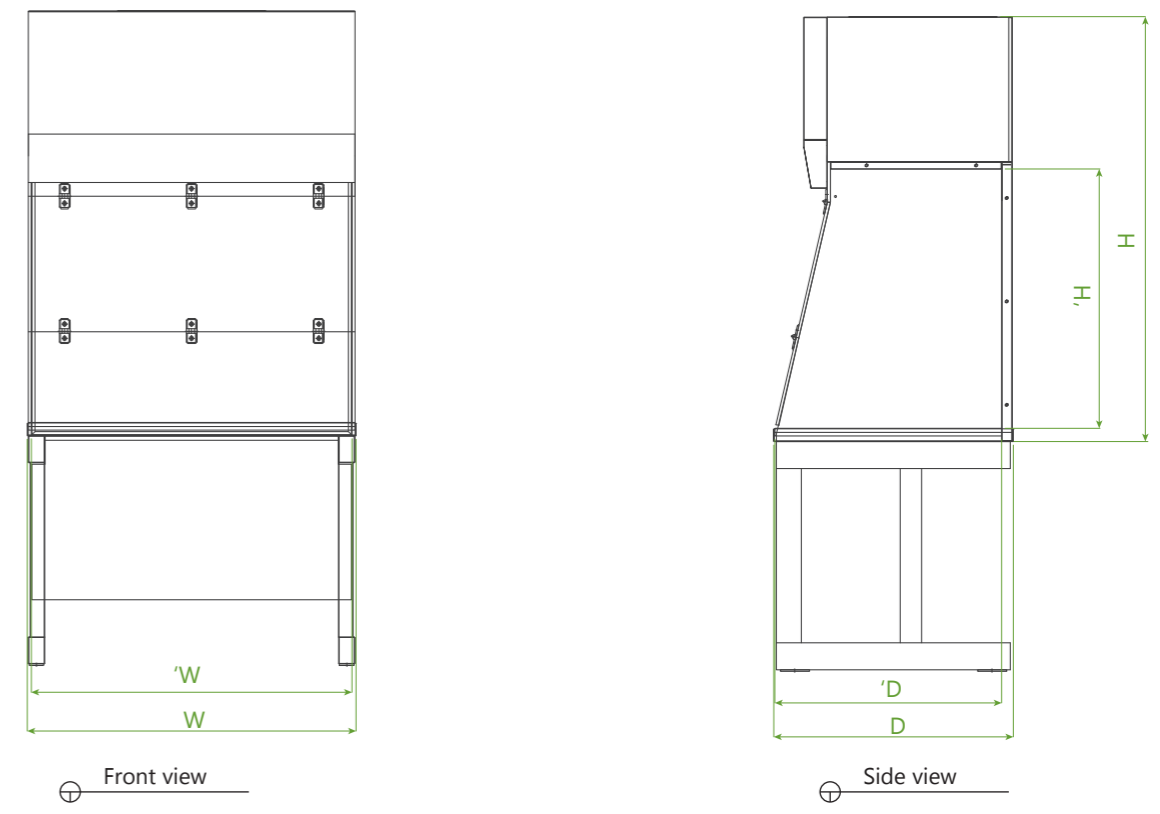
The test object is protected from the contamination as the clean air filtered through the HEPA filter is vertically generated from the ceiling area, and it is suitable when the specimen with comparatively less danger of contamination is treated, or suitable for the experiment of DNA, RNA, and PCR.

Unit : mm
W : Width **D** : Depth **H** : Height

biolus®



Airflow
 ● Room air
 ● HEPA filtered air



| General specification | | Model No. | CLB-060 | | CLB-060F | |
|-----------------------|------------------------------|---|--|------|----------|------|
| | | | 03 | 04 | 03 | 04 |
| Dimension | Exterior | W/mm | 906 | 1206 | 906 | 1206 |
| | | D/mm | 660 | | | |
| | | H/mm | 1172 | | | |
| | Interior | 'W/mm | 884 | 1184 | 884 | 1184 |
| | | 'D/mm | 625 | | | |
| | | 'H/mm | 715 | | | |
| | Color | Gray | | | | |
| | Door | Front folding sash, Acrylic 8mm | | | | |
| | Control panel | LCD digital display panel | | | | |
| Material | External material | Steel plate with epoxy powder coated | | | | |
| | Interior material (worktop) | Phenolic laminate 19mm | | | | |
| | Support stand | X | Carbon steel pipes for ordinary piping | | | |
| Performance | Avg. downflow velocity (m/s) | 0.3 ~ 0.4 (variable set speed) | | | | |
| | Filter efficiency | HEPA filter >99.995% at 0.3µm / ISO Class 5 | | | | |

| General specification | | Model No. | CLB-060 | | CLB-060F | |
|-----------------------|---------------------|-----------------------------------|-------------|-----------|-----------|----|
| | | | 03 | 04 | 03 | 04 |
| Performance | Certification | CE | | | | |
| | Pre-filter | Nylon filter | | | | |
| | Noise level (db) | ≤ 65db(A) | | | | |
| | Safety alarm system | UV timer | | | | |
| Electric | Power supply | 220V, 50/60Hz (110V is available) | | | | |
| | FL lamp | 36W x 1EA | 36W x 2EA | 36W x 1EA | 36W x 2EA | |
| | UV lamp | 10W x 1EA | 10W x 2EA | 10W x 1EA | 10W x 2EA | |
| | Power receptacle | 1EA | | | | |
| Option | | ■ Support stand (Option) | | | | |
| | | Support frame | Height / mm | 633 | | |
| | | Leveling caster | / mm | 71 | | |

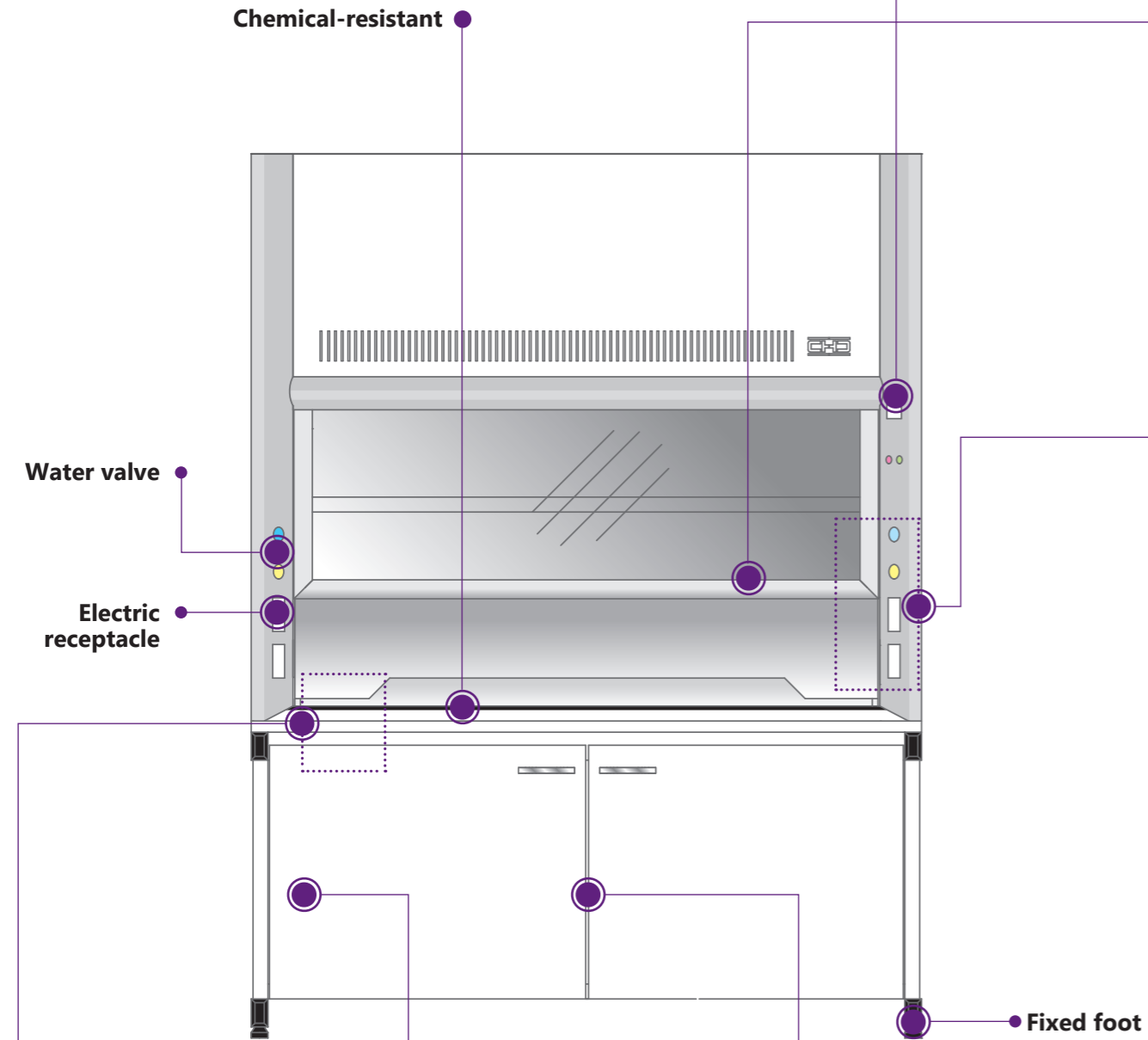
※ CLB-060 excludes the support stand.



EFFICIENCY

Exhaust system equipment is an essential equipment to secure the safety of the researchers as well as the laboratory from the harmful substances and contaminated gas which are emitted during the research process. Operation of the efficient and pleasant research facility is supported as the aerodynamic technology is applied for the stable maintenance of proper air amount together with the energy saving.

airos[®] Fume Hood

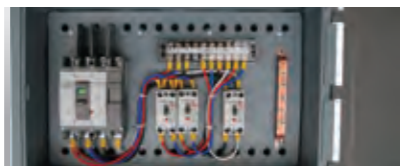


Cupsink & Trap



○ Cupsink with highly resistance against acid, alkali etc.

Electrical box



○ It contains circuit breakers against over-current and various electrical devices to control in general.

Multi-purpose Storage space



○ Multi-purpose storage space is provided as equipped with a cabinet of wide storage space.

Air velocity monitor Option

○ Energy saving effect can be expected as the quick monitoring of the air amount is available in accordance with the change of air velocity by the opening and closing of the door, and it helps to improve the Amenity of a Laboratory.



Large sight glass sash structure



○ Large sight glass sash structure provides wider view for the researcher to eliminate the danger in advance that can be generated during the test.

Expendable utility system with easy maintenance

○ Various utilities can be provided in accordance with the research purpose and environment of use by attaching the valves at both sides of the pillar, and cocks at both sides of the inside.



○ Safety gas valve eliminates the possibility of accident by the careless or malfunctions.
○ Access holes at left and right interior side are able to provide easy maintenance.

1 Bypass

○ The internal pressure is lowered in case the door is closed as the bypass structure design is applied.

2 Baffle

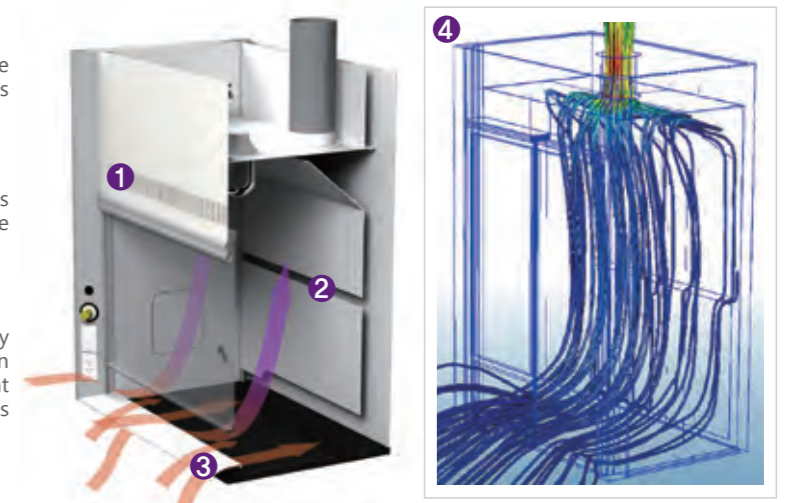
○ It is designed in baffle structure which emits the air inside the chamber to the outside effectively.

3 Ergonomic airfoil structure

○ CHC Lab's airfoil structure secures the safety of researchers by preventing the concentration of the noxious gas due to the eddy current at the front area of the fume hood, and the gas leakage to the outside of the chamber.

4 Computational fluid dynamics

○ It is designed as the optimum structure for the energy saving of the ventilation system consumed at time of fume hood operation, and the perfect emission of the noxious gas generated during the test, through the computational fluid dynamics (CFD) simulations.



Fume Hood A-MB Bypass Air Type

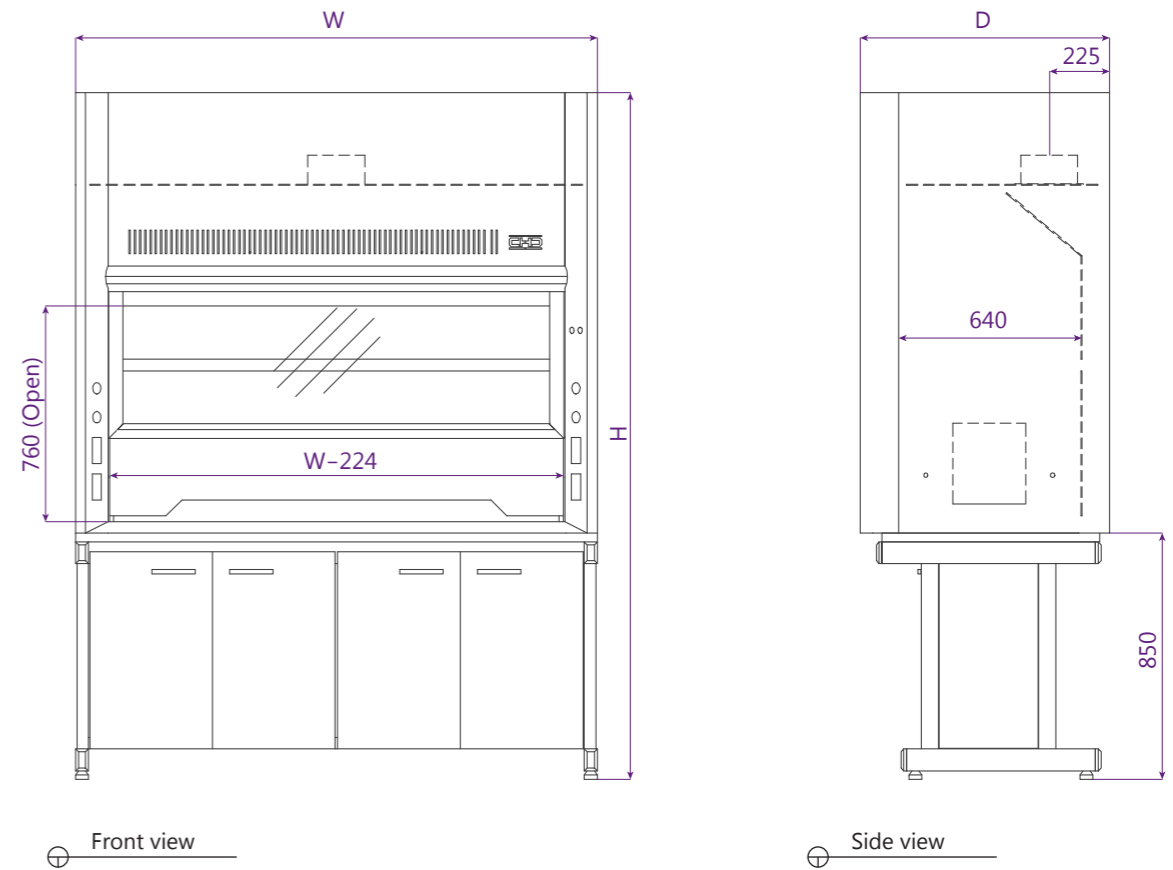
airjos



Airflow

- Room air
- Contaminated air under negative pressure

Unit : mm
W : Width D : Depth H : Height



| General specification | | Model No. | A-MB (CLE-101) | | | | |
|-----------------------|-----------------------------|--|-----------------|------|------|------|------|
| | | | 1200 | 1500 | 1800 | 2100 | 2400 |
| Dimension & Features | Exterior | W/mm | 1200 | 1500 | 1800 | 2100 | 2400 |
| | | D/mm | 860 | | | | |
| | | H/mm | 2370 | | | | |
| | Color | Gray | | | | | |
| Material | Door | Up/Down sliding door type | | | | | |
| | Airfoil | Steel plate 1.6mm with epoxy powder coated | | | | | |
| | Glass | Tempered safety glass 5mm | | | | | |
| | Cabinet & Cabinet door | LPM PB / 2 door | LPM PB / 4 door | | | | |
| | P.P resin & drain | 1EA | | 2EA | | | |
| Material | External Chamber | Phenolic laminate 6mm & Aluminum structure | | | | | |
| | Support stand | 75 X 45 X 1.4mm sq pipe, epoxy powder coated | | | | | |
| | Interior material (worktop) | Ceramite 30mm | | | | | |
| | Door sash | Aluminum | | | | | |

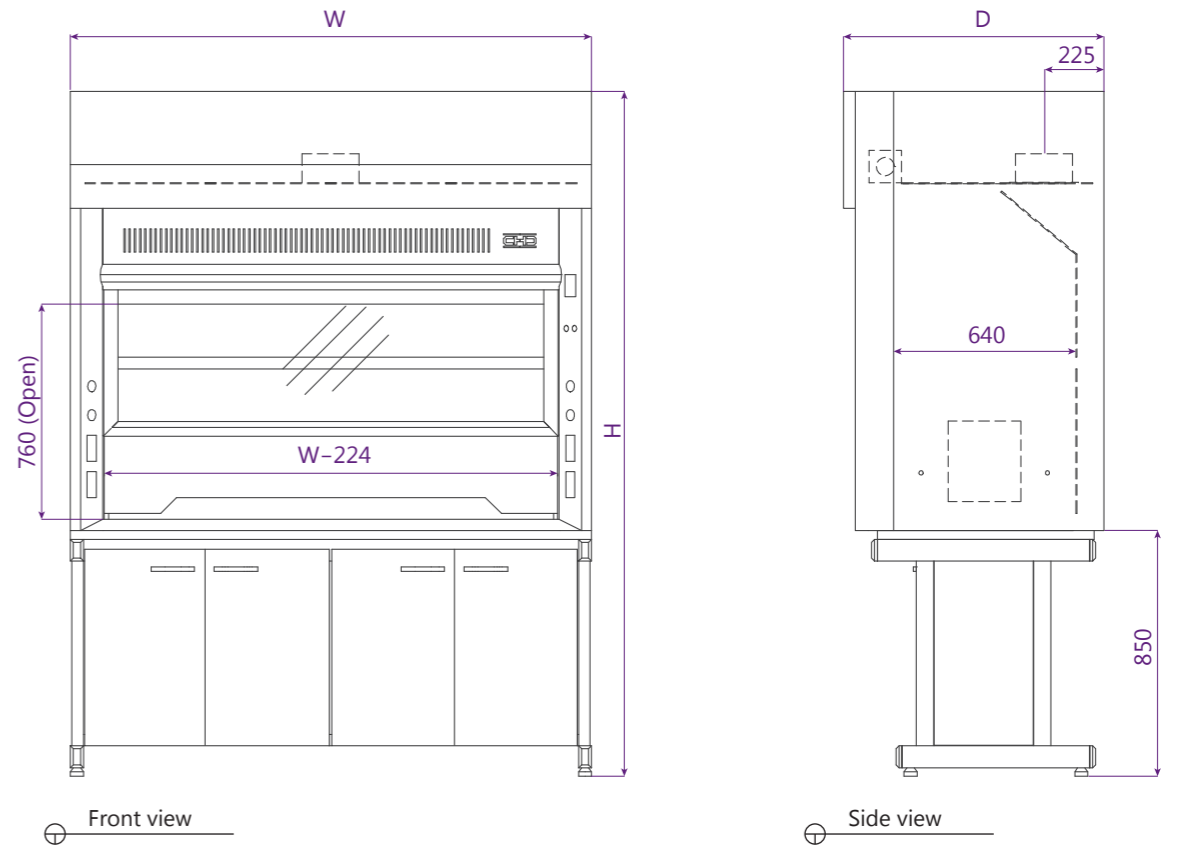
| General specification | | Model No. | A-MB (CLE-101) | | | | |
|-----------------------|---|-------------------------|----------------|-------------------------|-----------|------|------|
| | | | 1200 | 1500 | 1800 | 2100 | 2400 |
| Electrical | Power receptacle | 110V x 1EA / 220V x 1EA | | 110V x 2EA / 220V x 2EA | | | |
| | FL lamp | 36W x 1EA | | | 36W x 2EA | | |
| | Lamp switch | ON / OFF | | | | | |
| | Blower switch | ON / OFF | | | | | |
| | Electrical box | O | | | | | |
| Valve | Gas | 1EA | | | 2EA | | |
| | Water | 1EA | | | 2EA | | |
| | Air, Vacuum | Option | | | | | |
| Ventilation | Collar Ø | 200Ø / 250Ø / 300Ø | | | | | |
| | Blower | Option | | | | | |
| Option | Support frame(Stainless steel 304 rack), Additional receptacle, Additional service vales (vacuum) Air velocity monitor, Blower | | | | | | |

* P.P : Polypropylene

* FL lamp : Explosion proof lamp with three band radiation
* Power receptacle : 220V/110V (selectable)

Fume Hood A-MA Air Curtain Type

Unit : mm
W : Width D : Depth H : Height



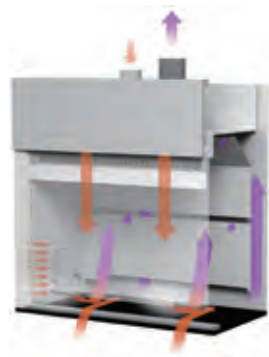
| General specification | | Model No. | A-MA (CLE-106) | | | | |
|------------------------|--|--|----------------|------|------|------|------|
| | | | 1200 | 1500 | 1800 | 2100 | 2400 |
| Dimension & Features | Exterior | W/mm | 1200 | 1500 | 1800 | 2100 | 2400 |
| | | D/mm | 880 | | | | |
| | | H/mm | 2370 | | | | |
| | Color | Gray | | | | | |
| Door | Up/Down sliding door type | | | | | | |
| Airfoil | Steel plate 1.6mm with epoxy powder coated | | | | | | |
| Glass | Tempered safety glass 5mm | | | | | | |
| Cabinet & Cabinet door | LPM PB / 2 door | LPM PB / 4 door | | | | | |
| P.P resin & drain | 1EA | | | 2EA | | | |
| Material | External | Phenolic laminate 6mm & Aluminum structure | | | | | |
| | Chamber | Phenolic laminate 4mm | | | | | |
| | Support stand | 75 X 45 X 1.4mm sq pipe, epoxy powder coated | | | | | |
| | Interior material (worktop) | Ceramate 30mm | | | | | |
| | Door sash | Aluminum | | | | | |

| General specification | | Model No. | A-MA (CLE-106) | | | | |
|-----------------------|---|-------------------------|----------------|-------------------------|-----------------------|------|------|
| | | | 1200 | 1500 | 1800 | 2100 | 2400 |
| Electrical | Power receptacle | 110V - 1EA / 220V - 1EA | | 110V - 2EA / 220V - 2EA | | | |
| | FL lamp | 36W x 1EA | | | 36W x 2EA | | |
| | Air curtain fan | 1EA (motor power 34W) | | | 2EA (motor power 34W) | | |
| | Air curtain fan switch | ON / OFF | | | | | |
| | Lamp switch | ON / OFF | | | | | |
| | Blower switch | ON / OFF | | | | | |
| | Electrical box | O | | | | | |
| Valve | Gas | 1EA | | | 2EA | | |
| | Water | 1EA | | | 2EA | | |
| | Air, Vacuum | Option | | | | | |
| Ventilation | Collar Ø | 200Ø / 250Ø / 300Ø | | | | | |
| | Blower | Option | | | | | |
| Etc | Fan | O | | | | | |
| Option | Support frame(Stainless steel 304 rack), Additional receptacle, Additional service vales (vacuum), Blower | | | | | | |

* P,P : Polypropylene

* FL lamp : Explosion proof lamp with three band radiation
* Power receptacle : 220V/110V (selectable)

Fume Hood A-MX
Auxiliary Air Type

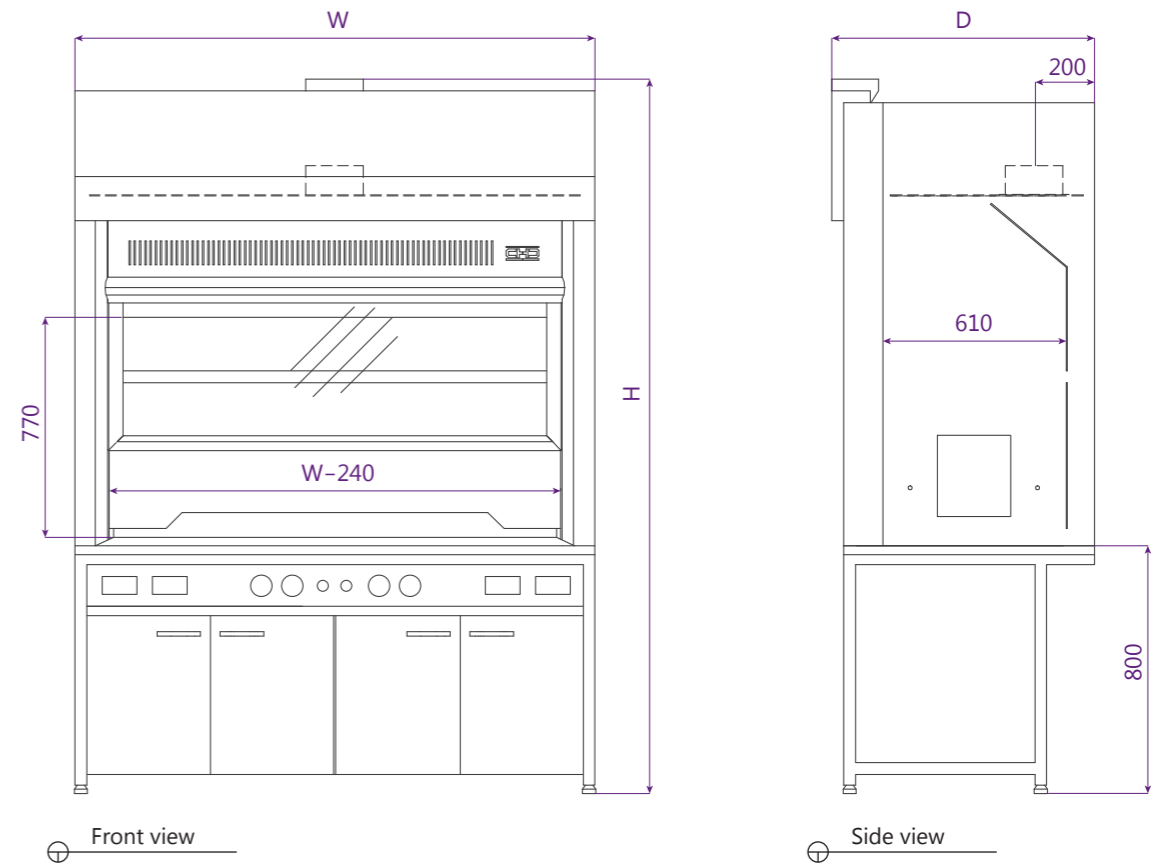


Airflow

- Room air
- Contaminated air under negative pressure



Unit : mm
W : Width D : Depth H : Height



| General specification | | Model No. | A-MX (CLE-107) | | | | |
|-----------------------------|------------------------|-----------------|---|----------------------------------|------|------|------|
| | | | 1200 | 1500 | 1800 | 2100 | 2400 |
| Exterior | W/mm | | 1200 | 1500 | 1800 | 2100 | 2400 |
| | D/mm | | 807 | | | | |
| | H/mm | | 2500 | | | | |
| Dimension & Features | Color | | Gray | | | | |
| | Door | | Up/Down sliding door type | | | | |
| | Airfoil | | X | | | | |
| | Glass | | Tempered safety glass 5mm | | | | |
| | Cabinet & Cabinet door | LPM PB / 2 door | LPM PB / 4door | | | | |
| | P.P resin & drain | | 1 EA | | 2 EA | | |
| | Material | External | | Steel plate, epoxy powder coated | | | |
| Chamber | | | Phenolic laminate 4mm | | | | |
| Support stand | | | 75 X 45 X 1.4mm sq pipe epoxy powder coated | | | | |
| Interior material (worktop) | | | Ceramite 30mm | | | | |
| Door sash | | | Stainless steel 304 | | | | |

※ P,P : Polypropylene

| General specification | | Model No. | A-MX (CLE-107) | | | | |
|-----------------------|--------------------------|--|-------------------------|------|-------------------------|------|------|
| | | | 1200 | 1500 | 1800 | 2100 | 2400 |
| Electrical | Power receptacle | | 110V - 1EA / 220V - 1EA | | 110V - 2EA / 220V - 2EA | | |
| | FL Lamp | | 36W x 1EA | | | 2EA | |
| | Lamp switch | | ON / OFF | | | | |
| | Blower switch | | ON / OFF | | | | |
| | Electrical box | | O | | | | |
| Valve | Gas | | 1 EA | | 2 EA | | |
| | Water | | 1 EA | | 2 EA | | |
| | Air, Vaccum | | Option | | | | |
| Ventilation | Exhausted air collar Ø | | 200Ø / 250Ø / 300Ø | | | | |
| | Supplied air collar 150Ø | | O | | | | |
| | Blower | | Option | | | | |
| Option | | Support frame(Stainless steel 304 rack), Additional receptacle, Additional service valves (vacuum) | | | | | |

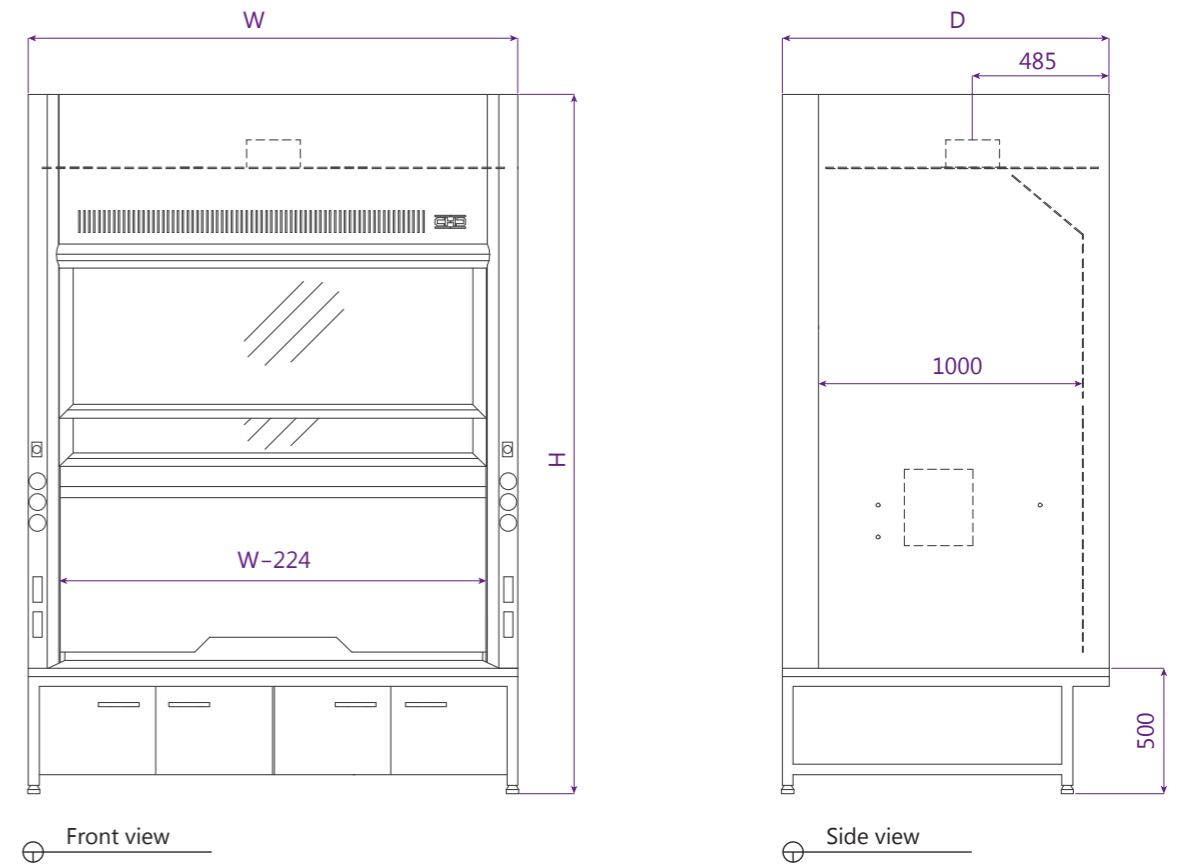
※ FL lamp : Explosion proof lamp with three band radiation
 ※ Power receptacle : 220V/110V (selectable)

Fume Hood A-ML
Low Work-in Type

airtos[®]



Unit : mm
W : Width **D** : Depth **H** : Height



| | | Model No. | A-ML (CLE-109) | | | | |
|-----------------------|----------------------------------|-----------|--|---------------------|-------|---------------------|-------|
| General specification | | | 1800 | 2400 | 3600 | 5400 | 7200 |
| Dimension & Features | Exterior | W/mm | 1800 | 2400 | 3600 | 5400 | 7200 |
| | | D/mm | 1200 | | | | |
| | | H/mm | 2700 | | | | |
| | Color | | Gray | | | | |
| | Door (Up/Down sliding door type) | | 1 set | | 2 set | | 3 set |
| | Airfoil | | X | | | | |
| Material | Glass | | Tempered safety glass 5mm | | | | |
| | Cabinet & Cabinet door | | LPM PB / 4 door | LPM PB / 4 door x 2 | | LPM PB / 4 door x 3 | |
| | P.P resin & drain | | 2EA | | | | |
| | External Chamber | | Steel plate 1.2mm with epoxy powder coated | | | | |
| | Support stand | | 40 X 40 X 1.4mm sq, pipe epoxy powder coated | | | | |
| | Interior material (worktop) | | Phenolic laminate 19mm (Chemsurf) + 5mm | | | | |
| Door sash | | Aluminum | | | | | |

| | | Model No. | A-ML (CLE-109) | | | | |
|-----------------------|------------------|--|----------------|------------|------|------|------|
| General specification | | | 1800 | 2400 | 3600 | 5400 | 7200 |
| Electrical | Power receptacle | 110V - 2EA / 220V - 2EA | | Selectable | | | |
| | FL lamp | 1EA | 2EA | 3EA | 4EA | | |
| | Lamp switch | ON / OFF | | | | | |
| | Blower switch | ON / OFF | | | | | |
| | Electrical box | O | | | | | |
| Valve | Gas | 1 EA | | | | | |
| | Water | 2 EA | | | | | |
| | Air | 1EA | | | | | |
| Ventilation | Collar Ø | 200Ø / 250Ø / 300Ø | | | | | |
| | Blower | Option | | | | | |
| Option | | Support frame(Stainless steel 304 rack), Additional receptacle, Additional service valves (vacuum) | | | | | |

※ P,P : Polypropylene

※ FL lamp : Explosion proof lamp with three band radiation
 ※ Power receptacle : 220V/110V (selectable)

Fume Hood A-MW Walk-in Type

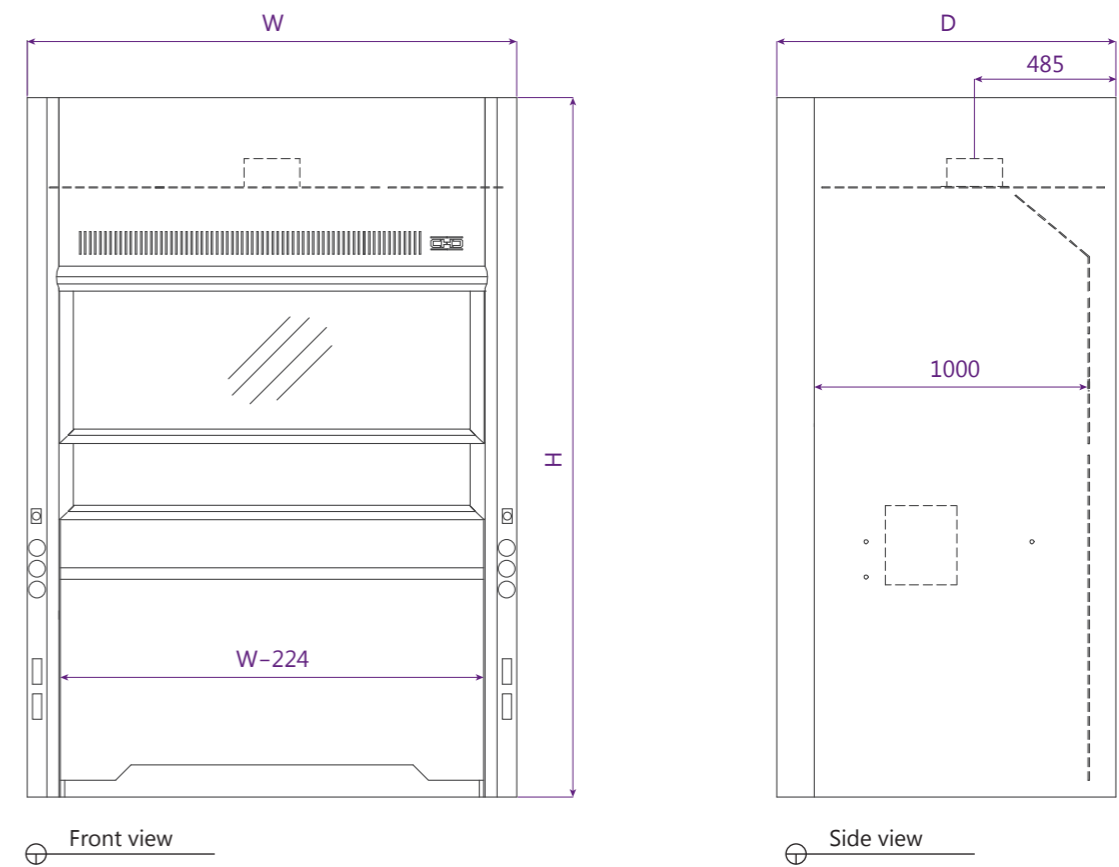
airios



Airflow

- Room air
- Contaminated air under negative pressure

Unit : mm
W : Width **D** : Depth **H** : Height



| | | Model No. | A-MW (CLE-110) | | | | |
|---------------------------------|----------------------------------|-----------|--|---------------------------|------------|------|-------|
| General specification | | | 1800 | 2400 | 3600 | 5400 | 7200 |
| Dimension & Features | Exterior | W/mm | 1800 | 2400 | 3600 | 5400 | 7200 |
| | | D/mm | | | 1200 | | |
| | | H/mm | | | 2700 | | |
| | Color | | | Gray | | | |
| | Door (Up/Down sliding door type) | | 1 set | | 2 set | | 3 set |
| Material | Airfoil | | | X | | | |
| | Glass | | | Tempered safety glass 5mm | | | |
| | Cabinet & Cabinet door | | | X | | | |
| | P.P resin & drain | | 1EA | | Selectable | | |
| | External | | Steel plate 1.2mm with epoxy powder coated | | | | |
| | Chamber | | Phenolic laminate 4mm | | | | |
| | Support stand | | | | X | | |
| Material | Interior material (worktop) | | | X | | | |
| | Door sash | | | Aluminum | | | |

| | | Model No. | A-MW (CLE-110) | | | | |
|-----------------------|------------------|-----------|--|------|------------|------------|-----------|
| General specification | | | 1800 | 2400 | 3600 | 5400 | 7200 |
| Electrical | Power receptacle | | 110V - 1EA / 220V - 1EA / Three-phase 1EA | | | Selectable | |
| | FL lamp | | 1EA | | 2EA | | 3EA / 4EA |
| | Lamp switch | | ON / OFF | | | | |
| | Blower switch | | ON / OFF | | | | |
| | Electrical box | | O | | | | |
| Valve | Gas | | 1EA | | Selectable | | |
| | Water | | 2EA | | Selectable | | |
| | Air | | 1EA | | Selectable | | |
| Ventilation | Collar Ø | | 200Ø / 250Ø / 300Ø | | | | |
| | Blower | | Option | | | | |
| Option | | | Additional receptacle, Additional service valves (vacuum), STS 304 1.5mm (worktop) | | | | |

※ P.P : Polypropylene

※ FL lamp : Explosion proof lamp with three band radiation
 ※ Power receptacle : 220V/110V (selectable)

Fume Hood A-MT Center Tabletop Type

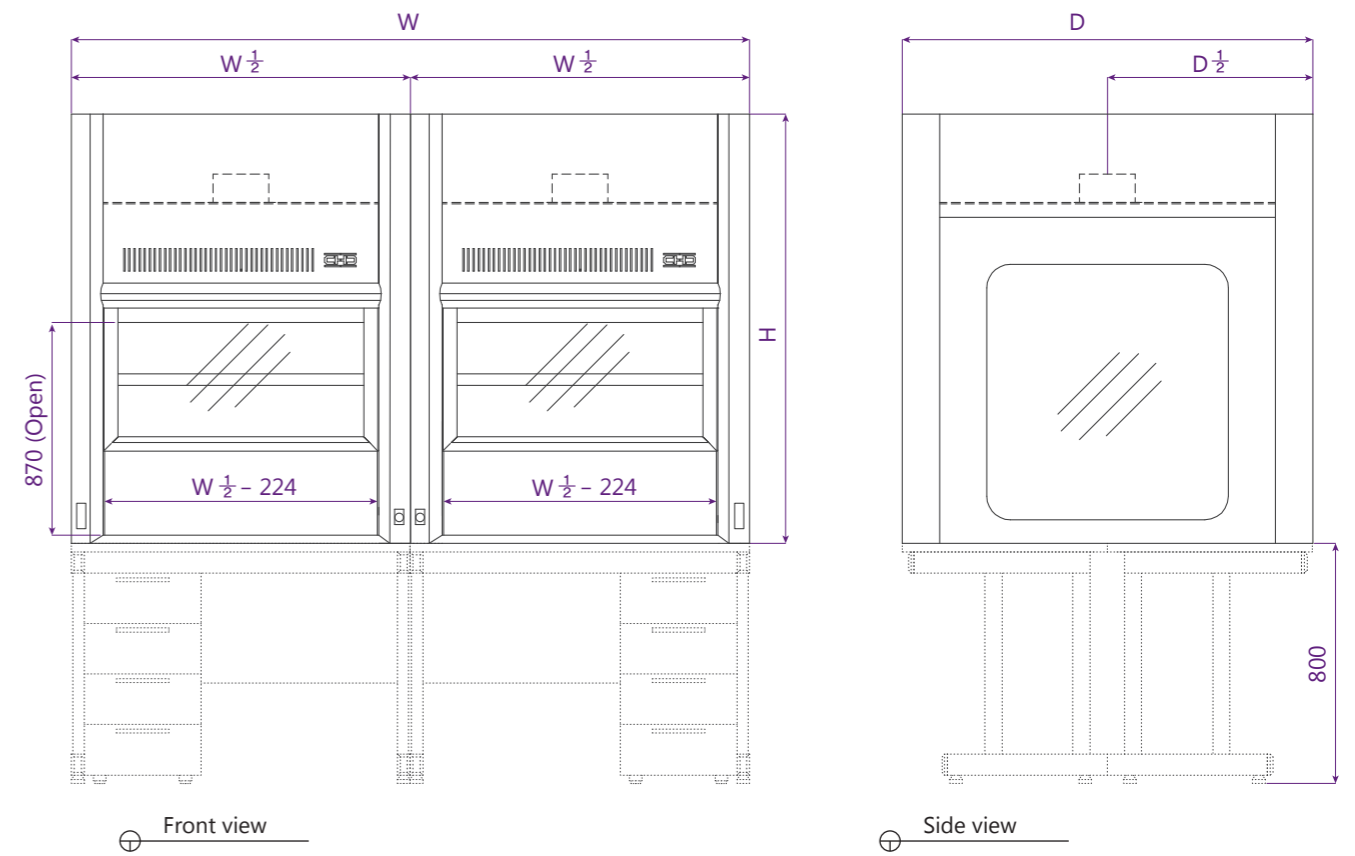
airos[®]



Airflow

- Room air
- Contaminated air under negative pressure

Unit : mm
W : Width **D** : Depth **H** : Height

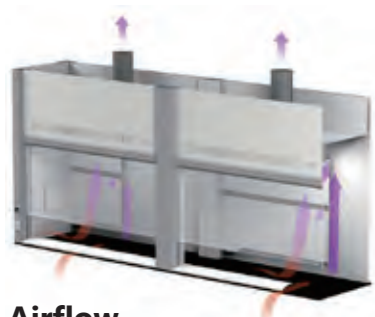


| General specification | | Model No. | A-MT (CLE-120) | | | | |
|------------------------|---|--|----------------|------|------|------|------|
| | | | 1800 | 2400 | 3000 | 3600 | 4200 |
| Dimension & Features | Exterior | W/mm | 1800 | 2400 | 3000 | 3600 | 4200 |
| | | D/mm | 1500 | | | | |
| | | H/mm | 1600 | | | | |
| | Color | Gray | | | | | |
| Door | Up/Down sliding door type / Side window | | | | | | |
| Airfoil | X | | | | | | |
| Glass | Tempered safety glass 5mm | | | | | | |
| Cabinet & Cabinet door | X | | | | | | |
| P.P resin & drain | X | | | | | | |
| Material | External | Steel plate 1.2mm with epoxy powder coated | | | | | |
| | Chamber | Phenolic laminate 6mm | | | | | |
| | Support stand | X | | | | | |
| | Interior material (worktop) | X | | | | | |
| Door sash | Aluminum | | | | | | |

| General specification | | Model No. | A-MT (CLE-120) | | | | |
|-----------------------|--------------------------------------|-------------------------|----------------|------|------|------|------|
| | | | 1800 | 2400 | 3000 | 3600 | 4200 |
| Electrical | Power receptacle | 110V - 1EA / 220V - 1EA | | | | | |
| | FL lamp | 2EA | 4EA | | | | |
| | Lamp switch | ON / OFF | | | | | |
| | Blower switch | ON / OFF | | | | | |
| Valve | Electrical box | O | | | | | |
| | Gas | X | | | | | |
| | Water | X | | | | | |
| Ventilation | Air, Vacuum | X | | | | | |
| | Collar Ø | 200Ø / 250Ø / 300Ø | | | | | |
| Blower | Option | | | | | | |
| Option | 220V/110V(selectable), Table, Drawer | | | | | | |

※ FL lamp : Explosion proof lamp with three band radiation
 ※ Power receptacle : 220V/110V (selectable)

Fume Hood A-MST Side Tabletop Type



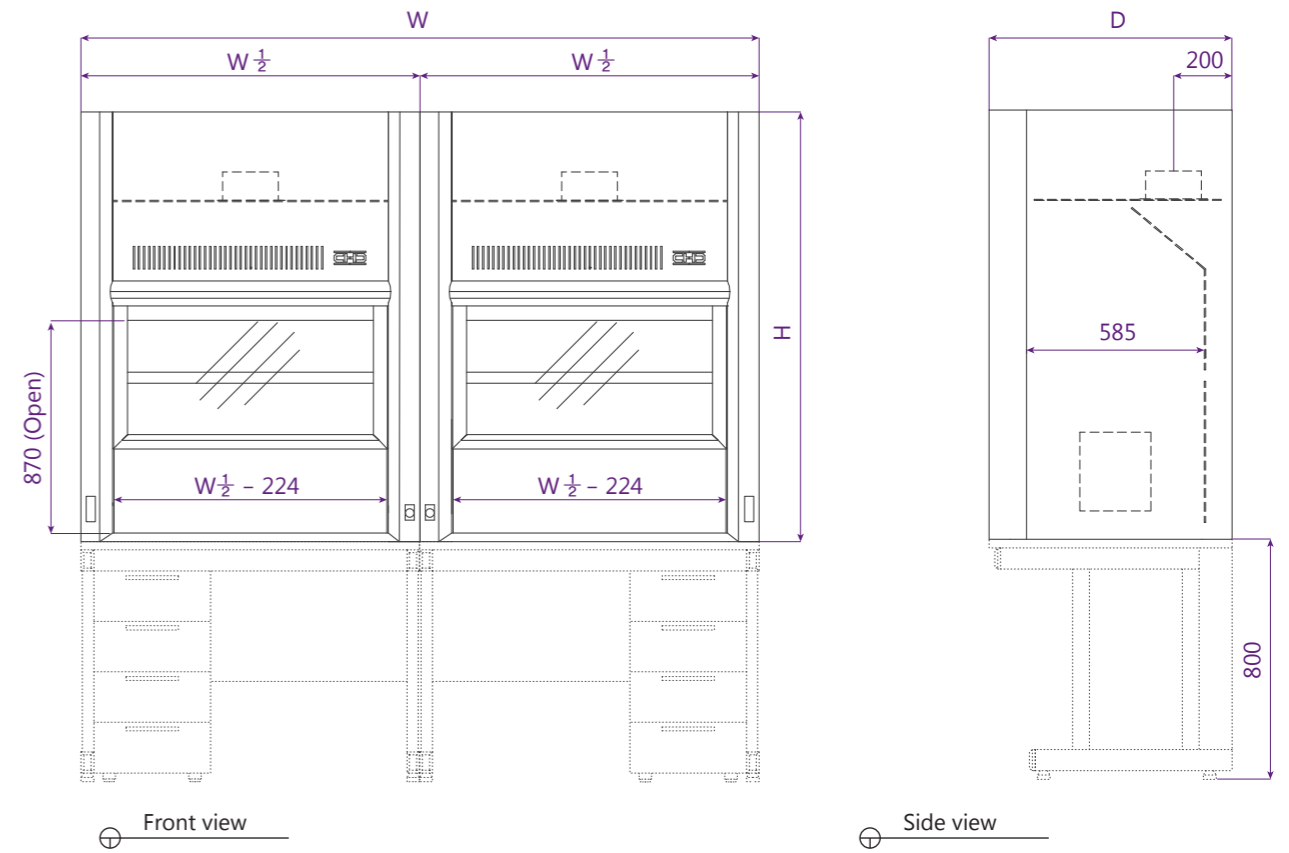
Airflow

- Room air
- Contaminated air under negative pressure



Unit : mm

W : Width D : Depth H : Height



| General specification | | Model No. | A-MST (CLE-121) | | | | |
|-----------------------------|------------------------|--|-----------------|------|------|------|------|
| | | | 1200 | 1500 | 1800 | 2100 | 2400 |
| Dimension & Features | Exterior | W/mm | 1200 | 1500 | 1800 | 2100 | 2400 |
| | | D/mm | 750 | | | | |
| | | H/mm | 1600 | | | | |
| | Color | Gray | | | | | |
| | Door | Up/Down sliding door type / Side window | | | | | |
| Material | Airfoil | X | | | | | |
| | Glass | Tempered safety glass 5mm | | | | | |
| | Cabinet & Cabinet door | X | | | | | |
| | P.P resin & drain | X | | | | | |
| | External Chamber | Steel plate 1.2mm with epoxy powder coated | | | | | |
| Support stand | X | | | | | | |
| Interior material (worktop) | Phenolic laminate 4mm | | | | | | |
| Door sash | X | | | | | | |
| | | Aluminum | | | | | |

| General specification | | Model No. | A-MST (CLE-121) | | | | |
|-----------------------|--------------------------------------|-------------------------|-----------------|------|------|------|------|
| | | | 1200 | 1500 | 1800 | 2100 | 2400 |
| Electrical | Power receptacle | 110V - 1EA / 220V - 1EA | | | | | |
| | FL lamp | 1EA | | | 2EA | | |
| | Lamp switch | ON / OFF | | | | | |
| | Blower switch | ON / OFF | | | | | |
| | Electrical box | O | | | | | |
| Valve | Gas | X | | | | | |
| | Water | X | | | | | |
| | Air | X | | | | | |
| Ventilation | Collar Ø | 200Ø / 250Ø / 300Ø | | | | | |
| | Blower | Option | | | | | |
| Option | 220V/110V(selectable), Table, Drawer | | | | | | |

※ FL lamp : Explosion proof lamp with three band radiation
 ※ Power receptacle : 220V/110V (selectable)

Safety Balance Workstation

with anti-vibration

airos®

Pedestal

Front area is supported to make it easy for the door to be completely opened and shut.
30mm marble stone, vibration proof and horizontal adjustable rubber foot, vibration proof pad are applied for the tests for which vibration proof is required such as electronic scale etc., and researchers are protected as the poisonous particles or dusts which are generated during the experiment are exhausted.

Three sides visibility with clear acrylic

Securing the optimum view is available as the transparent acrylic is used for the three sides to get an easy observation of the work surface.

Worktop

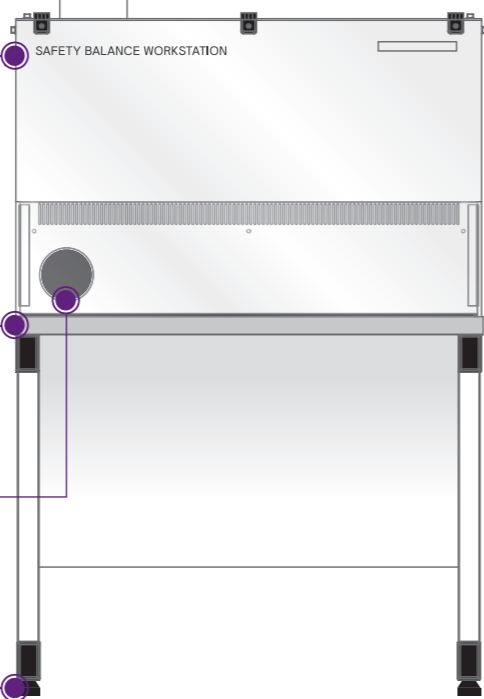
Using marble stone with 30mm thickness, it is minimized vibration on the work surface.

Utility hole

It is available to access easily to electricity and gas line.

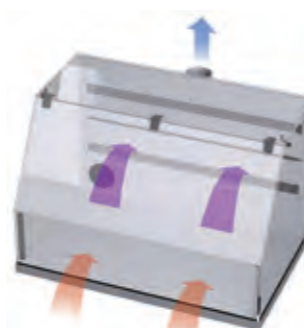
Rubber foot

Vibration proof and height adjustable rubber foot is able to absorb the vibration from outside impacts, and uneven surfaces are maintained horizontally.



airos® A-SBWS / A-SBWS-F / A-SBWS-T Safety Balance Workstation

A-SBWS-03F
(CLE-071F-03)



Airflow

- Room air
- Contaminated air
- Exhausted air

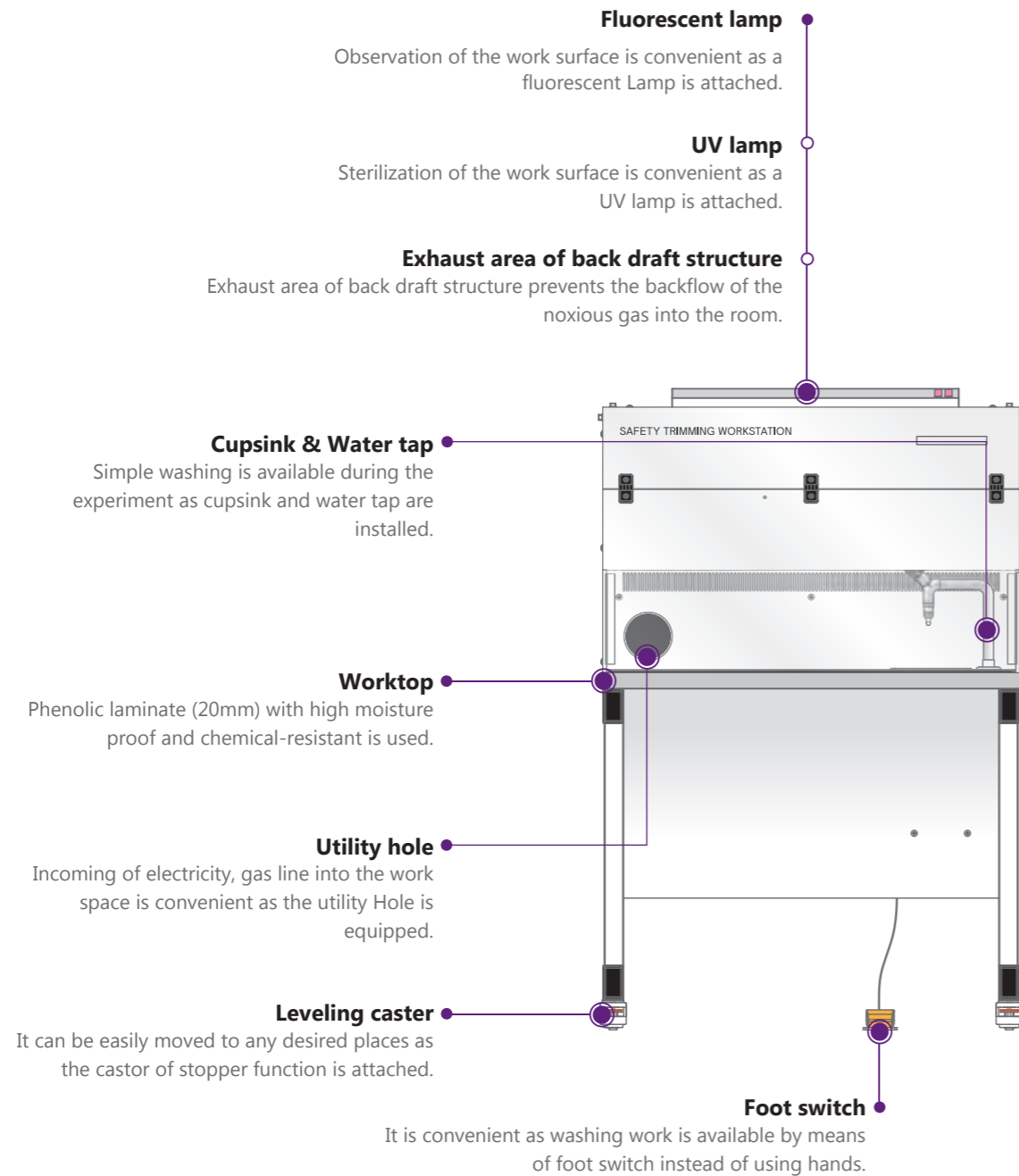


| General specification | Model No. | A-SBWS (CLE-071) | | A-SBWS-F (CLE-071F) | | A-SBWS-T (CLE-071T) | | |
|-----------------------------|----------------------|--|------|---------------------|-----|---------------------|-----|------|
| | | 03 | 04 | 03 | 04 | 03 | 04 | |
| Dimension | Exterior | W / mm | 906 | 1106 | 906 | 1106 | 906 | 1106 |
| | | D / mm | 560 | | | | | |
| | | H / mm | 1335 | | | | | |
| | Interior | W / mm | 880 | 1080 | 880 | 1080 | 880 | 1080 |
| | | D / mm | 530 | | | | | |
| | | H / mm | 552 | | | | | |
| Material | Body | Acrylic(PMMA) & Stainless steel plate | | | | | | |
| | Worktop | Marble stone | | | | | | |
| | Support stand | Carbon steel pipes for ordinary piping | | | | | | |
| | Dimension | 500 x 500 x 865 (WxDxH mm) | | | | | | |
| Filter box (CLE-030) | Filter | Carbon / HEPA / Pre-filter | | | | | | |
| | Noise level (db) | ≤ 65db(A) at normal speed | | | | | | |
| | Power supply | 220V, 50/60Hz (110V is available) | | | | | | |
| | Support stand | Support frame | 694 | | | | | |
| Rubber foot | | 40 | | | | X | | |

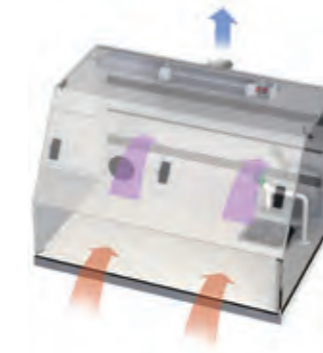
※ CLB-071 excludes the filter box.
※ CLB-071T excludes the support stand & filter box.

Essential item for animal laboratory, Safety Trimming Workstation

airos®



airos® A-STWS / A-STWS-F Safety Trimming Workstation



Airflow

- Room air
- Contaminated air
- Exhausted air

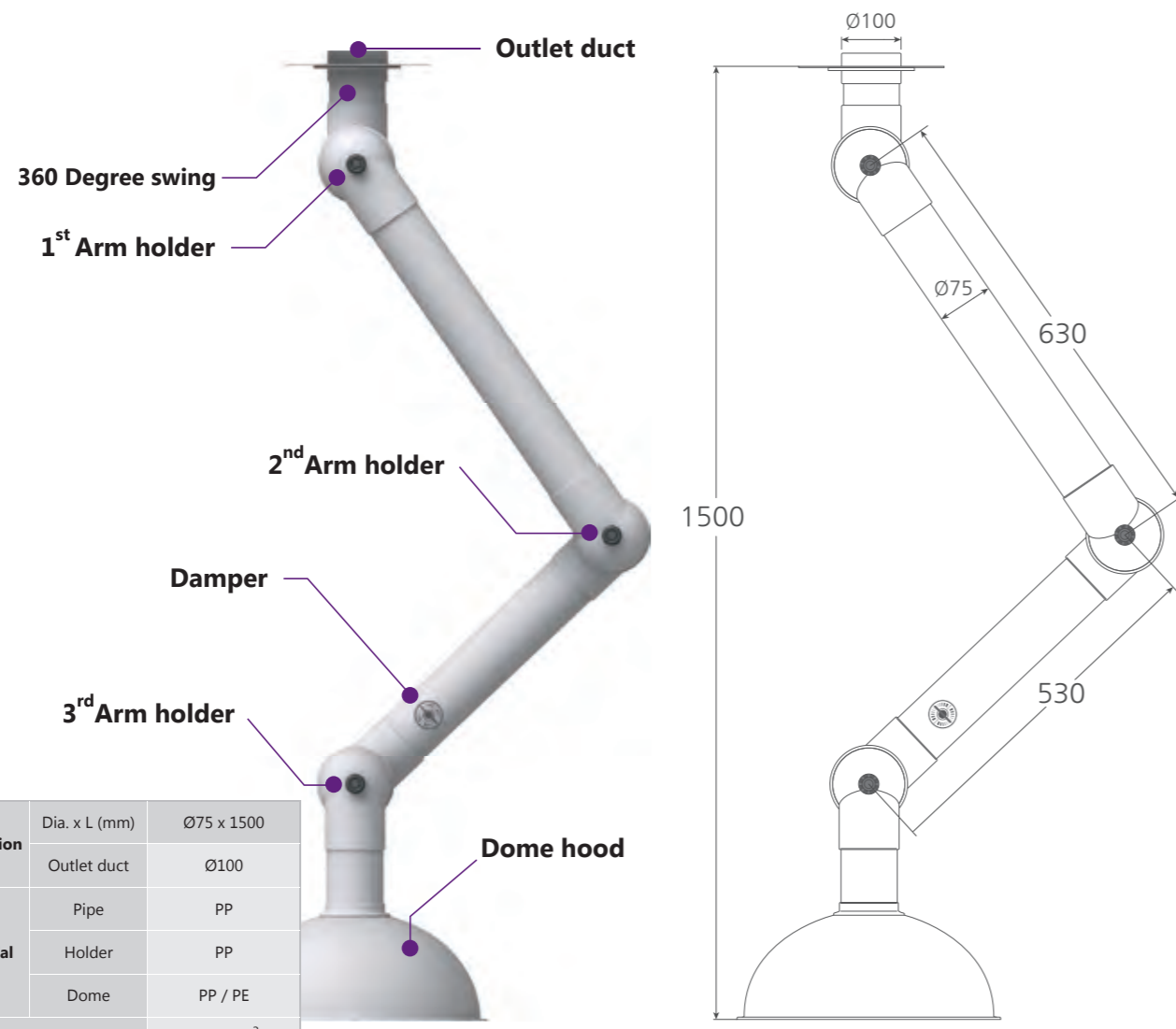
A-STWS-03F
(CLE-081F-03)



| General specification | | Model No. | A-STWS (CLE-081) / A-STWS-F (CLE-081F) | |
|-----------------------|------------------|--|--|------|
| | | | 03 | 04 |
| Dimension | Exterior | W / mm | 906 | 1106 |
| | | D / mm | 560 | |
| | | H / mm | 1405 | |
| | Interior | 'W / mm | 880 | 1080 |
| | | 'D / mm | 530 | |
| | | 'H / mm | 557 | |
| Material | Body | Acrylic(PMMA) & Stainless steel plate | | |
| | Worktop | Phenolic laminate 19mm | | |
| Filter box (CLE-030) | Support stand | Carbon steel pipes for ordinary piping | | |
| | Dimension | 500 x 500 x 865 (WxDxH mm) | | |
| | Filter | Carbon / HEPA / Pre-filter | | |
| | Noise level (db) | ≤ 65dB(A) at normal speed | | |
| Support stand | Power supply | 110/220V, 50/60Hz (available) | | |
| | Support frame | Height / mm | 694 | |
| | Leveling caster | | 71 | |

A-AD (CLE-001-05)

Arm Hood



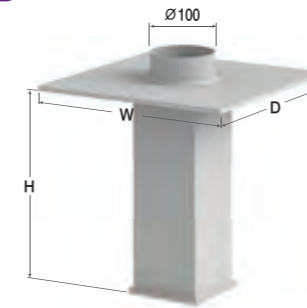
| | | |
|-----------------------------|---------------------------|------------|
| Dimension | Dia. x L (mm) | Ø75 x 1500 |
| | Outlet duct | Ø100 |
| Material | Pipe | PP |
| | Holder | PP |
| | Dome | PP / PE |
| Recommended air flow | 140~180 m ³ /H | |

airos[®] Arm hood

Arm hood is extracted contaminated air on the specific local region, and ensure the safety laboratory and the environment.

• Extension bracket

PP



| Dimension (WxDxH) mm | |
|--------------------------|-----------------|
| Extension bracket | 300 x 300 x 300 |
| | 300 x 300 x 400 |
| | 300 x 300 x 500 |

• Connection bracket

STEEL



Ceiling type

| Dimension (WxDxH) mm | |
|----------------------|-----------------|
| CLE-006 | 300 x 300 x 2.0 |

STEEL



Roof type

| Dimension (WxDxH) mm | |
|----------------------|-----------------|
| CLE-007A | 200 x 220 x 250 |
| CLE-007B | 200 x 220 x 500 |
| CLE-007C | 200 x 220 x 700 |

STEEL



Wall type

| Dimension (WxDxH) mm | |
|----------------------|-----------------|
| CLE-008 | 200 x 220 x 330 |

※ Long-term exposure to toxic gases can be corrosive. Please check the problem of useable gas before installation.

• Design



360 Degree swing

The arm hood head was direct connected duct, possible to the 360 degree revolution.



1st Arm holder

1st Arm Holder obtains duality and solidity through O-ring for preventing gas leak, high strength spring and threaded stay structure.



2nd, 3rd Arm holder

2nd, 3rd Arm Holder has increased the fixation and durability product using, threaded stay, O-ring and joint bolts, possible to stable move according to environment and experiment conditions.



Damper

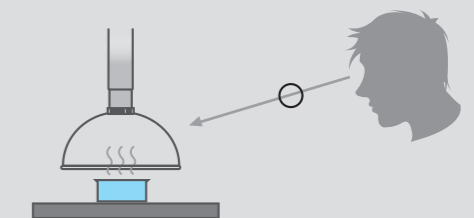
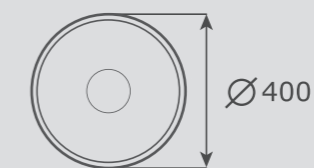
The damper can be adjusted exhaust airflow through the environment and experiment conditions by directly controls of the user.

• Option

A-AD-PE (CLE-009)



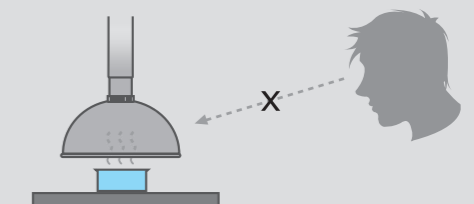
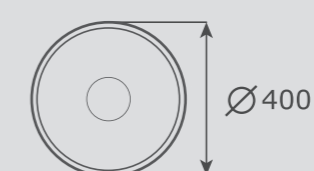
PET



A-AD-PP (CLE-011) / Basic type



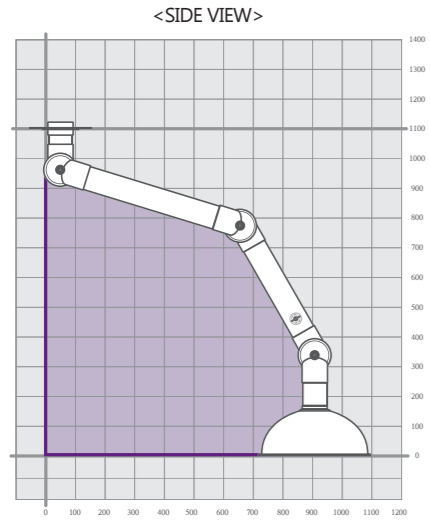
PP



○ Arm hood working area, according to experiment environment

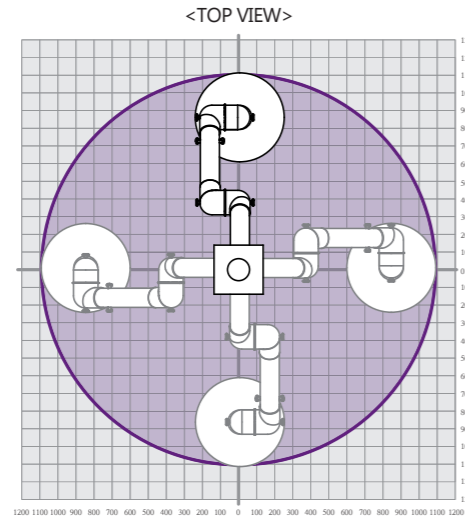
Recommended working area

The recommended maximum working area is 1100mm length and 1100mm breadth.



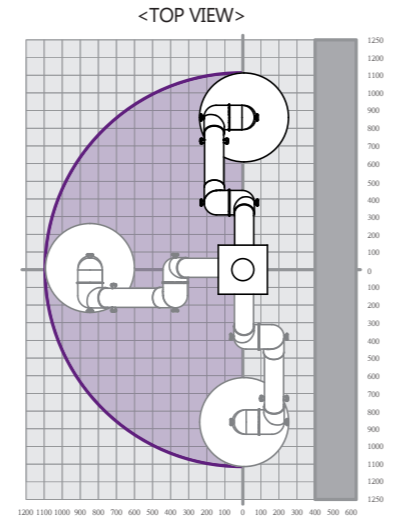
Recommended working area (installed on center tables)

The recommended maximum working area is 360° and 1100mm swing radius.



Recommended working area (installed on side tables)

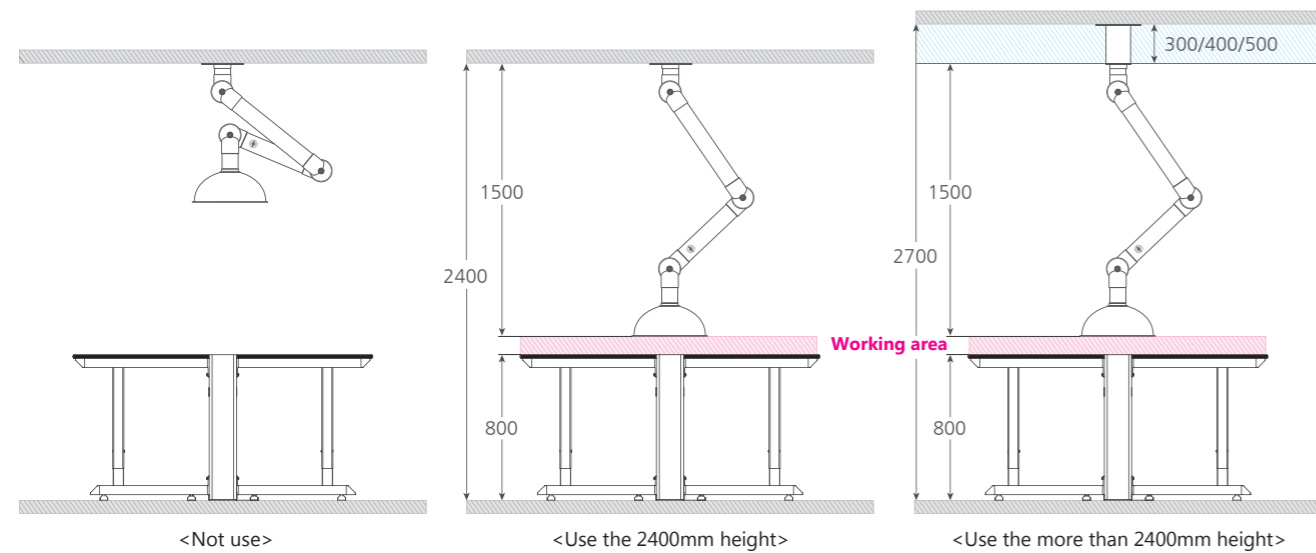
The recommended maximum working area is 180° and 1100mm swing radius.



※ The recommended maximum working area is an 1100mm radius for safety experiment environment.

○ Efficient working area

3 point articulated technology provide efficient working area, can be coped with flexibly in accordance with the ceiling height.



※ If the height of the laboratory is more than 2400mm, extends to using 300mm/400mm/500mm extension bracket.

○ Related Products

A-AFB-BOX (CLE-041)



A-AD-BOX (CLE-040)



A-AFB-PP
A-AFB-PE (CLE-020)

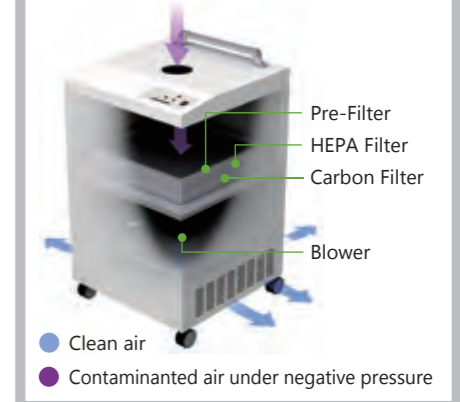


C-FB-500 (CLE-030)



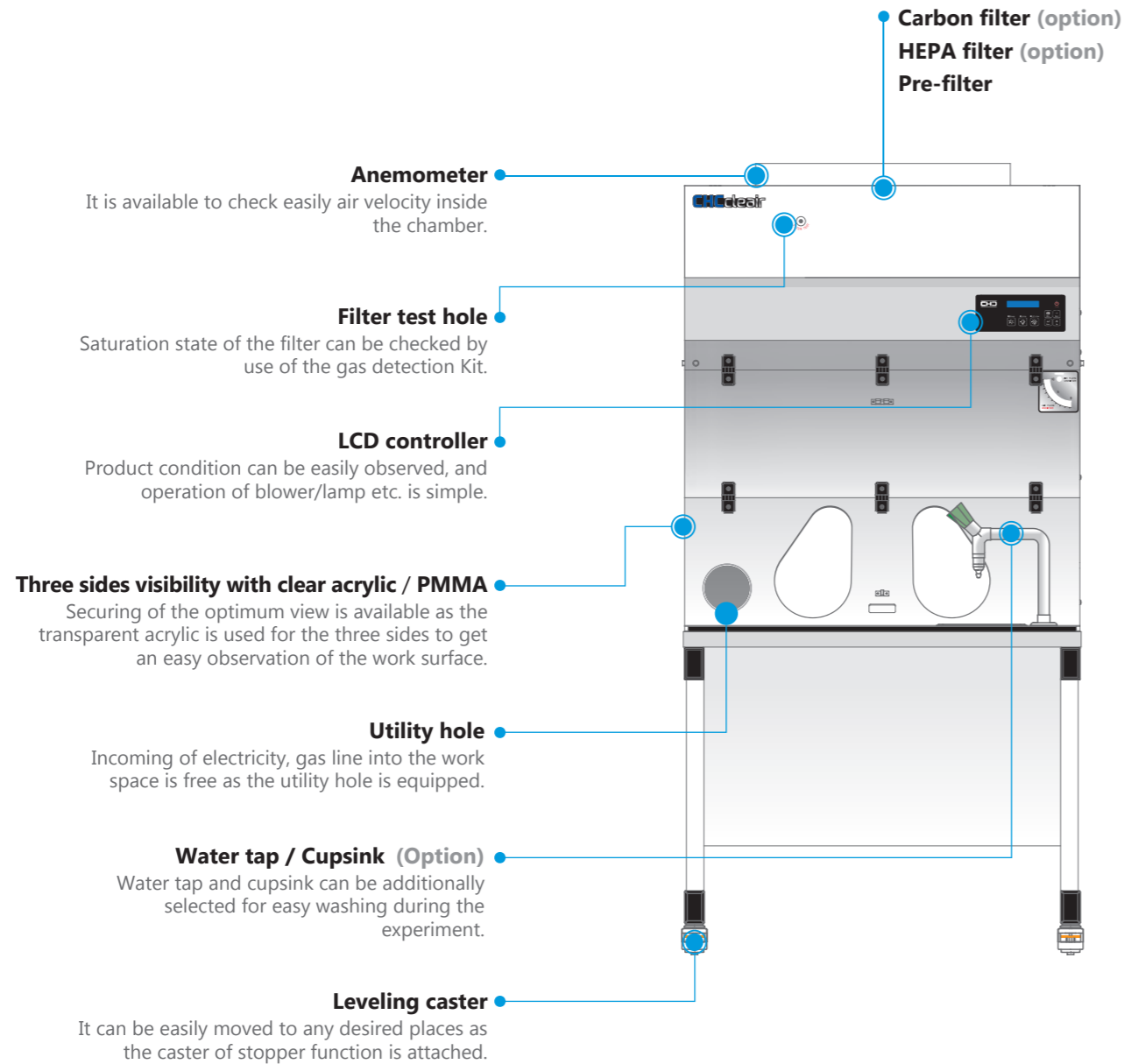
| Model No. | Dimension | |
|-----------------------------------|-----------------|-----------------|
| | WxDxH (mm) | Dia. x L (mm) |
| A-AFB-PP A-AFB-PE (CLE-020) | Arm | Ø75 x 1300 |
| | Filter Box | 500 x 500 x 865 |
| C-FB-500 (CLE-030) | 500 x 500 x 865 | . |
| A-AD-BOX (CLE-040) | 500 x 450 x 400 | . |
| A-AFB-BOX (CLE-041) | 500 x 450 x 400 | . |

C-FB-500 (CLE-030) Airflow



Freely movable Ductless Fume Hood

clear®



Carbon filter type

| Type | Applications |
|-----------------|--|
| Organic filter | Fume(gas, vapor) from organic solvents |
| Acid gas filter | Fume(gas, vapor) from acids |



clear® C-DH Ductless Fume Hood



C-DH-03
(CLE-051F-03)



Airflow

- Room air
- Fume (gas, vapor)
- Clean air

| General specification | | Model No. | C-DH-T (CLE-051) | | C-DH (CLE-051F) | |
|-----------------------|------------------|--|--|------|-----------------|------|
| | | | 03 | 04 | 03 | 04 |
| Dimension | Exterior | W / mm | 900 | 1200 | 900 | 1200 |
| | | D / mm | | | 660 | |
| | | H / mm | | | 1150 | |
| | Interior | 'W / mm | 884 | 1184 | 884 | 1184 |
| | | 'D / mm | | | 625 | |
| | | 'H / mm | | | 715 | |
| | Body | Acrylic 8mm (PMMA) & Steel plate epoxy powder coated | | | | |
| | Support stand | X | | SPP | | |
| | Worktop | Phenolic laminate 19mm | | | | |
| Electrical | Power supply | 110/220V, 50/60Hz | | | | |
| Performance | Noise level (db) | ≤ 65db(A) | | | | |
| Filter | | Pre-filter | O | | | |
| | | HEPA filter | Option | | | |
| | Carbon filter | Organic filter | Fume(gas, vapor) from organic solvents | | | |
| | Acid gas filter | Fume(gas, vapor) from acids | | | | |
| Support stand | Support frame | | | | 633 | |
| | Leveling caster | Height / mm | X | | 71 | |

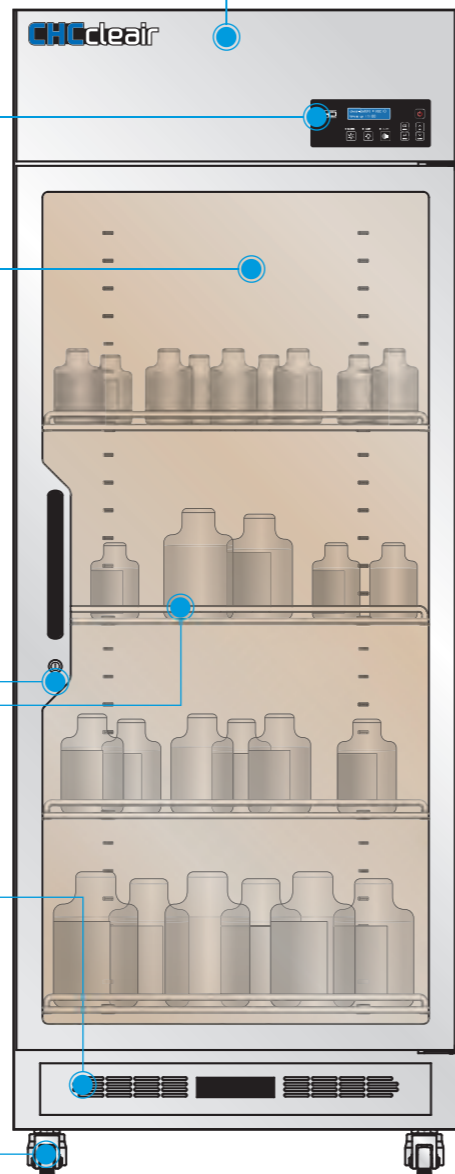
※ CLE-051 excludes the support stand.

Best Choice for pleasant laboratory environment 365 days a year !

CHCclear®

Chemical Storage Cabinet 2in1 / Ion

Ion : Ozone Filter
2in1 : Hybrid Filter



LCD Control panel

Shows power ON/OFF, fan working, alarm, lamp control, etc at a glance and button type display guarantees the clean and easy use.

Bronze color tempered glass

Semi-opaque bronze color that can block near-ultraviolet minimizes the deterioration of reagents and facilitates seeing the state of chemicals in the reagents cabinet. The tempered glass whose solidity is higher than normal glass but destruction rate is low lessens the secondary damage from the glass shards.

Lock to secure and maintain

For the reagent requiring security, it is fitted with lock that is not allowed to unlock except authorized person for secure control of such reagents.

Mini bottle tray

Two mini trays mounted in front of shelf can neatly store mini reagent bottles or chemicals that cannot stand on the shelf so that you can make a convenient use of it.

Spill tray

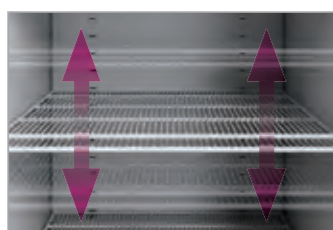
Spill tray on the bottom of the cabinet stops the hazardous materials from spill primarily for lessening the danger of accident and organic absorption fabric facilitates after treatment.
(Standard capacity 4L Spill Tray)

Leveling Caster(Optional)

Leveling caster in safe load which can adjust the height is free to move and easy to rotate a full 360 degrees so that can provide easy direction change even in small space.

Multi-plus Shelves

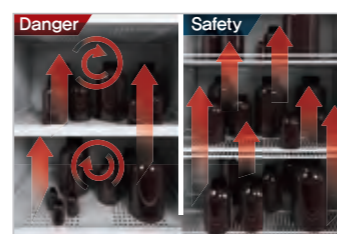
Mesh shelves with good air flow is PVC coated for safe storage of reagent bottles in various sizes and have a great chemical resistance. In addition, they are adjustable in their height according to the size of reagent bottles and provide better use of inner space.



(Additional shelves available)

Air Flow Effect

Adoption of the shelves in the cabinet as mesh type provides a good air flow and prevents vortex caused by reagent bottles.



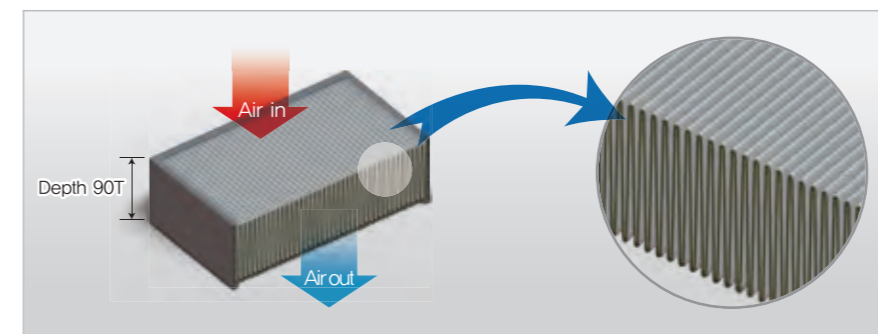
clear® 2in1

clear® 2in1 type is a product you can freely replace filter and duct on a cabinet. You can remove or replace readily in the easy replacement system and can add only duct for altering into exhaust type at ease and therefore it is easy to alter the type to the optimized style for the purpose of lab. clear® 2in1 giving easy maintenance as well as cost saving effect by the minimum maintenance is now available.



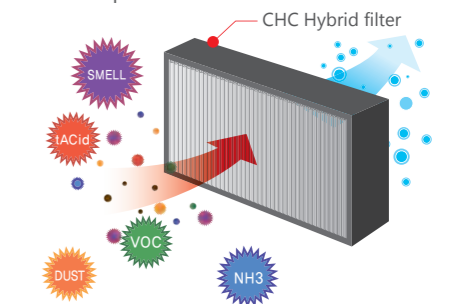
CHC Hybrid Filter Removing Harmful Substances Totally

Smart filter to remove completely at a time from contaminants, acid, base and organic compounds up to the smell, Harmful gases and contaminants are evenly flowed in the filter media section and therefore the life of filter lasts long and pressure loss is low resulting in economical effect.

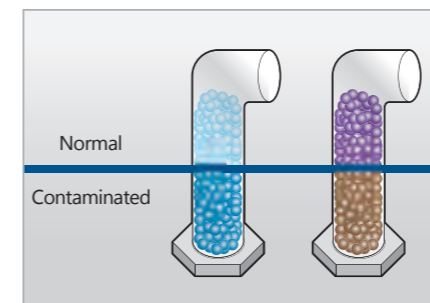


clear® One-Stop Filtering

clear® hybrid carbon filter minimizes the complicated filtering steps into one and removes the invisible harmful gases and polluted air at a time and then exhausts the odorless purified clean air.



Filter status at a glance!!



Filter contamination detection tube displays the contamination status as colors and so, you can check the contamination status in the cabinet at a glance. Color changes according to the kind of reagent and extent of contamination.

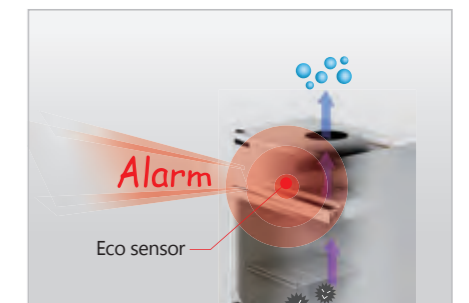
※ Alkalinity : Sky-blue → Dark-blue
※ Acidity : Violet → Dark brown

Convenient Pre-filter



Collects the contaminants and dust whose particles are comparably large in the lab so that enhances the air cleaning effect in the cabinet. You can always keep the filter clean because it is detachable.

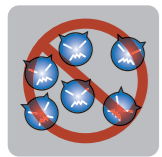
Smart Eco-sensor



Smart eco-sensor detects the polluted air (e.g. formaldehyde, toluene, benzene, xylene, organic solvent) in the cabinet and checks the contamination status for keeping fresh.

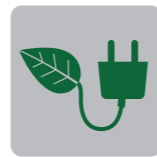
clear® Ion

clear® Ion is a hermetically sealed reagent cabinet in which air does not leak indoor/outdoor. Powerful oxidation by ion cluster removes polluted air (e.g. formaldehyde, toluene, benzene, xylene, organic solvent), harmful gases and malodorous substance so as to keep the cabinet fresh. This product is economical because an installation allows semi-permanent use. any gap (ION air flow chart)



Sterilize

Sterilize and kill bacteria, mycete, fungi, all kinds of virus and other allergen.



Energy Saving

Low power consumption gives energy saving and helps reduce costs.



Safety

Provides safe environment by removing carcinogens such as formaldehyde as well as harmful substances, organic compounds.



Economic

Maintenance cost is economical because an installation allows semi-permanent use.

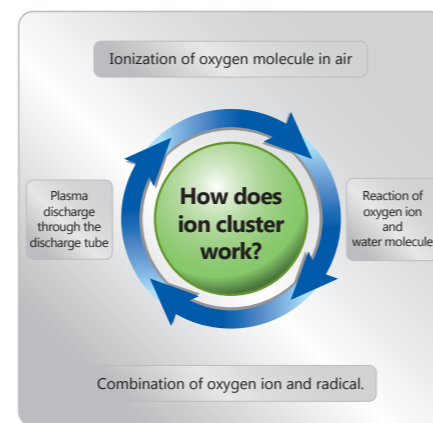
Smart cleaning feature controlling comfortably all year round

clear® Ion The reagent cabinet is controlled the air quality by ion plasma system in purification principle like nature and can keep the reagents fresh, and the cabinet is fitted with eco-sensor and filter detecting tube that can show the contamination status in the cabinet at a glance for easier and smart control.

Ion Cluster removing completely the cause of pollution

Ion cluster, key technology of Clear Ion emits a great deal of ion cluster with high-energy to eliminate various harmful substances so as to root up the source of pollution.

Ion Cluster principle



Ion Cluster Features

ECONOMIC

Power consumption is under 1W allowing for semi-permanent use.

POWERFUL

A great number of emission of high-energy provides powerful removal effect of harmful substances including virus so as to remove the contaminants stuck to the wall as well as pollutants in air.

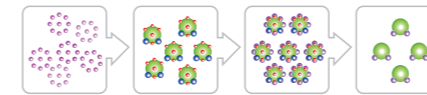
WIDE EFFECT

Powerful sterilization and deodorization effect lasts in the wide area High ionization energy gives wide coverage by ion.



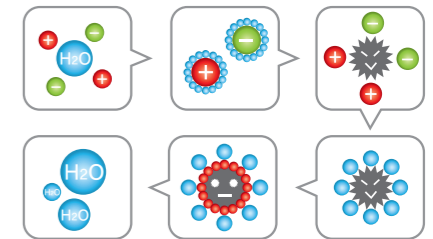
Deodorization principle

The generated Ion cluster surrounds and reacts to the offensive reagent smell and malodorous substance, and then changes them into water and carbon dioxide harmless to human body.



clear® Ion Plasma System

Produces artificial oxygen ion cluster like nature and removes harmful substances through the sterilization and deodorization utilizing the nature of ion cluster which is absorbed into the malodorous molecules, microorganism, bacteria or fungi and decompose them. Purification principle like nature gives a different air quality of Clear Ion reagent cabinet!



⊕ ⊖ Ions surround the harmful materials such as bacteria, virus, fungi, etc in air and destroy them

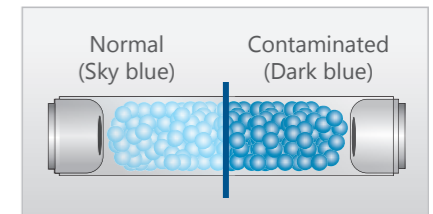
Bacteriostatic principle

Surrounds and reacts to the suspending bacteria such as virus, bacteria, H1N1, fungi, etc in air and then changes them into the protein harmless to human.



Contamination in ozone filter at a glance

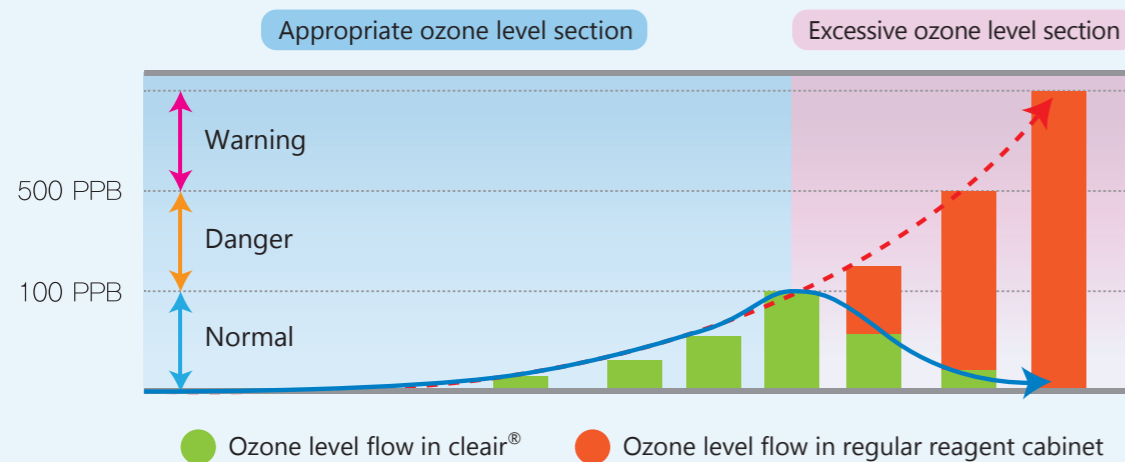
Contamination detection tube in the ozone filter renders the color of pellets altered depending upon the extent of contamination in the ozone filter and shows you the status of ozone contamination in the cabinet.



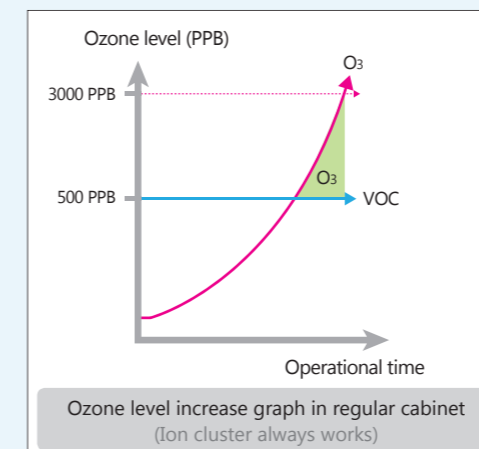
※ As Alkali concentration gets higher, the color of pellets becomes dark blue from sky blue.

More safely, Worry about ozone no more!

For the reagent cabinet with ion cluster inside, it is important to maintain the appropriate ozone level. Experience safer and pleasant lab by Clear's ozone activity control system keeping the appropriate ozone level!

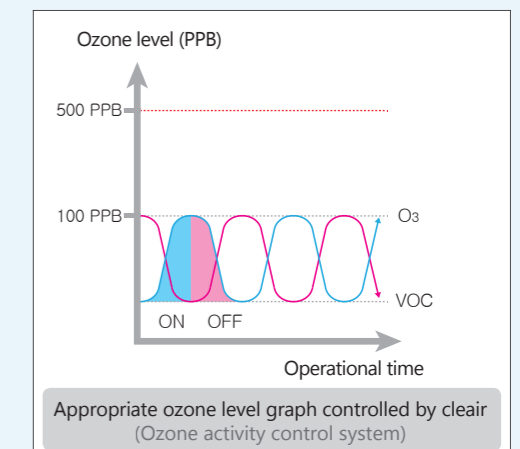


Danger



The ozone level increasing exponentially as working time increases is not only harmful to human body but disturbs the airflow in the cabinet and consequently affects the performance.

Safety

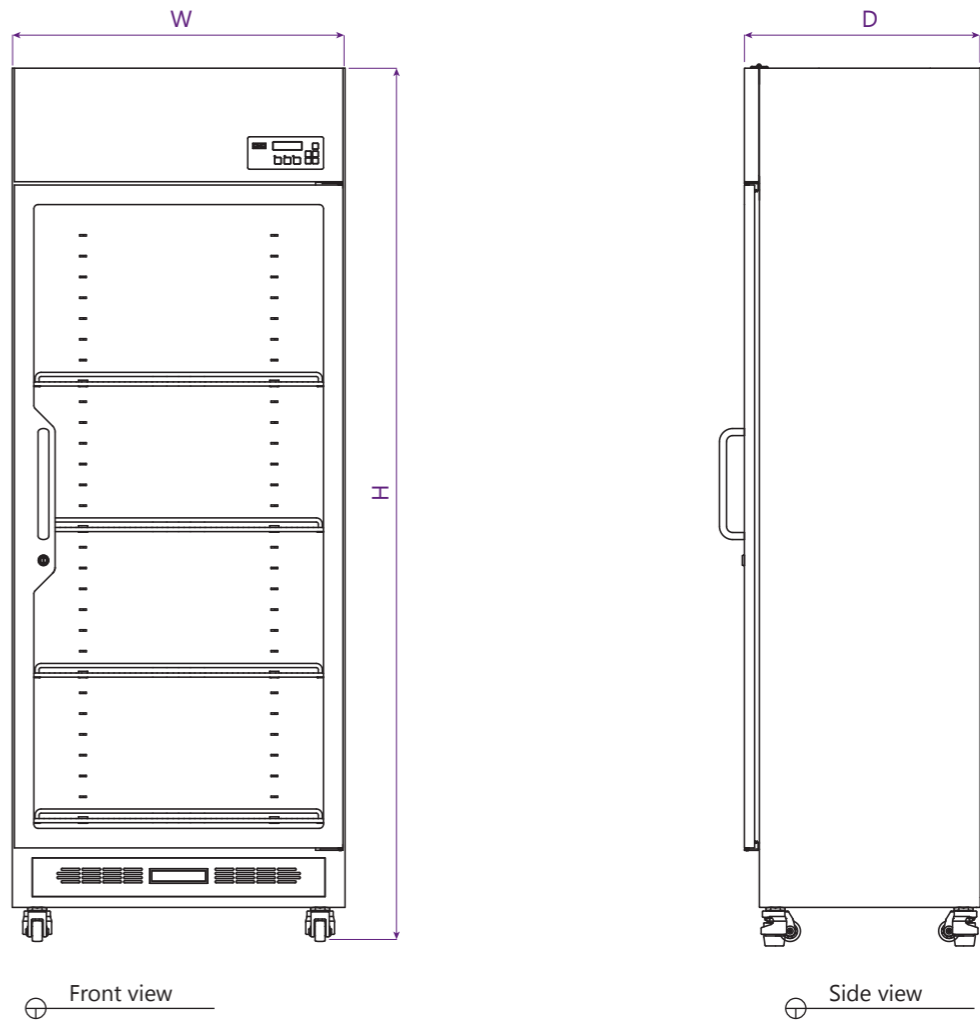


The ozone activity control system maintains the optimum ozone level under 100PPB and therefore harmless to human body and protects you from bad smell and all kinds of harmful substances.

CHC clear® Chemical Storage Cabinet | 2in1

clear®

Unit : mm
W : Width **D** : Depth **H** : Height



Airflow

- Room air
- Contaminated air
- Hybrid carbon filtered air

| General specification | | Model No. | C-2in1 | | |
|-----------------------|-------------------|-----------|-----------------------------|------|---|
| | | | F | F+D | D |
| Dimension | Exterior | W/mm | | 800 | |
| | | D/mm | | 565 | |
| | | H/mm | | 2000 | |
| | Interior | 'W/mm | | 710 | |
| | | 'D/mm | | 485 | |
| | | 'H/mm | | 1430 | |
| Shape | Color | | White | | |
| | Door | | Bronze color tempered glass | | |
| | Control panel | | LCD display panel | | |
| | Material | | SPCC | | |
| Material | External material | | SPCC + SPH | | |
| | Chamber material | | Multi-Plus shelves | | |
| | Shelf | | AL | | |
| | safety latch | | AL | | |
| | Handle | | AL | | |

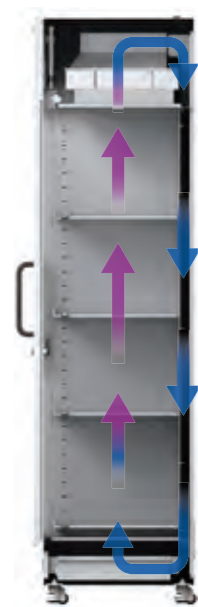
| General specification | | Model No. | C-2in1 | | |
|-----------------------|-----------------------------|---|--------------------------|------------|----------|
| | | | F | F+D | D |
| Performance | Air circulation speed (m/s) | | 1.40 m/s | | 2.26 m/s |
| | Noise level (db) | | 54dB | | |
| | Lamp | | LED lamp / DC 12V | | |
| | Fan | | O | | X |
| | Filter | | CHC Hybrid carbon filter | | X |
| | Filter lite time | | Approx. 6 month | | X |
| | Pure-Air kit | | O | | X |
| | Safety alarm system | | Eco sensor | | |
| | Electrical | Power supply | | 110V, 220V | |
| Exhaust | Voltage / frequency | | 88W | | |
| | Duct Ø | | 200Ø | | |
| Option | | Additional Multi-Plus shelves, Mni-Bottle tray, Leveling caster | | | |

※ Basic components : Multi-Plus shelves (2ea), Mini-Bottle tray (2ea)

CHC clear® Chemical Storage Cabinet | ION CLUSTER

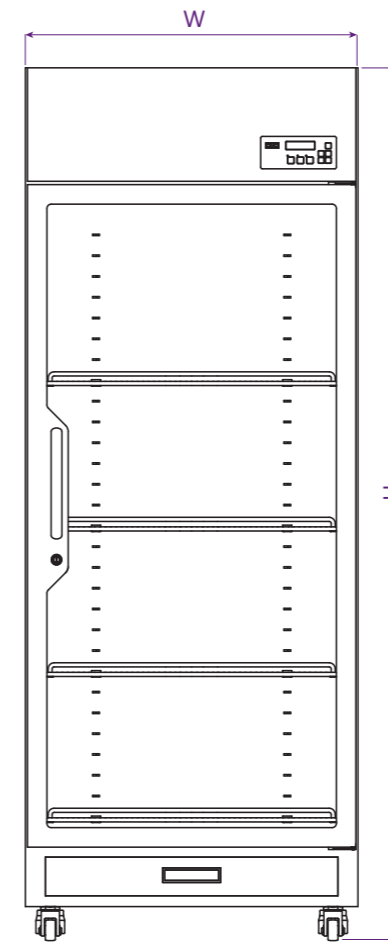
clear®

Unit : mm
W : Width **D** : Depth **H** : Height

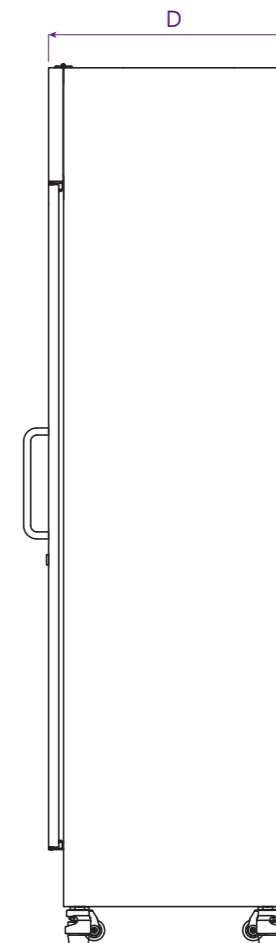


Airflow

- Contaminated air
- Ozone filtered air



⊕ Front view



⊕ Side view

| General specification | | Model No. | C-Ion |
|-----------------------|-------------------|-----------------------------|-------|
| Dimension | Exterior | W/mm | 800 |
| | | D/mm | 565 |
| | | H/mm | 2000 |
| | Interior | 'W/mm | 710 |
| | | 'D/mm | 485 |
| | | 'H/mm | 1430 |
| Shape | Color | White | |
| | Door | Bronze color tempered glass | |
| | Control panel | LCD display panel | |
| Material | External material | SPCC | |
| | Chamber material | SPCC + SPH | |
| | Shelf | Multi-Plus shelves | |
| | safety latch | AL | |
| | Handle | AL | |

| General specification | | Model No. | C-Ion |
|-----------------------|---|-------------------|-------|
| Performance | Air circulation speed (m/s) | 0.30 m/s | |
| | Noise level (db) | 48dB | |
| | Lamp | LED lamp / DC 12V | |
| | Fan | O | |
| | Filter | Ozone filter | |
| | Filter lite time | Avg. 40,000 hours | |
| | Pure-Air kit | O | |
| | Safety alarm system | Eco sensor | |
| Electrical | Power supply | 110V, 220V | |
| | Voltage / frequency | 110W | |
| Exhaust | Duct Ø | X | |
| Option | Additional Multi-Plus shelves, Mni-Bottle tray, Leveling caster | | |

※ Basic components : Multi-Plus shelves (2ea), Mini-Bottle tray (2ea)



COMFORT

Ergonomic design enables researchers to focus on the research comfortably under any research environment as it is designed to reduce the burden on the body of the researchers who stay in the laboratory for a long time. The module system can create the optimum research environment within a short time when re-arrangement is necessary such as researcher substitution or research purpose.

What is ergonomic research environment?

To be equipped with the ergonomic research environment means to perform the efficient researches.



Personal Research Activities Area

Personal research activities areas are divided even at an open type laboratory where various members exist. space arrangement for the psychological independence is helpful for the improvement of research performance by increasing the research concentration rate.



Universal design & Ergonomics

- CHC LAB is pursuing the universal design which can be used fairly and freely by anybody regardless of the differences in their abilities and personalities of each individual such as age, sex, nationality, language, handicapped or not etc.

The ergonomics based product creates an independent research space as it is designed to be flexibly modified by researchers according to their physical conditions and environment.

It is very important for the reproducibility of a research to set up and maintain the bench well, as the laboratory bench is the same as your house.

- Kathy Barker -

<Source: Kathy Barker, At the Bench, 2005>

- In order to do an experiment safely, a clean space with a width of at least 600mm is needed, where nothing is located. In order to progress various kinds of test actively, devices and equipment that are frequently used should be arranged with this space as the center.

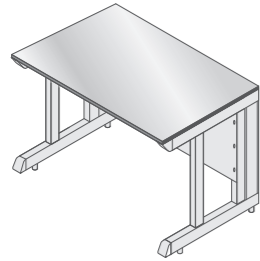


Lab Furniture System

Laboratory Table Frame & Work Top

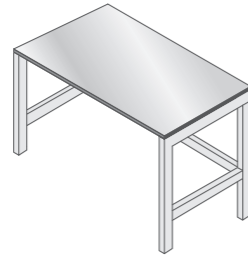
CHC LAB's laboratory furniture creates an efficient, customized environment through the modularization base on safety. The simple line design that matches any laboratory space well directs a safe and pleasant test space.

Type of bench frame



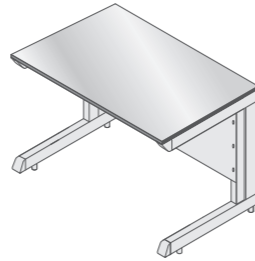
H-Frame (A type)

Table frame was made of Steel or aluminum, the safest type for supporting the construction for analytic equipment and load on the table for a long time.



H-Frame (B type)

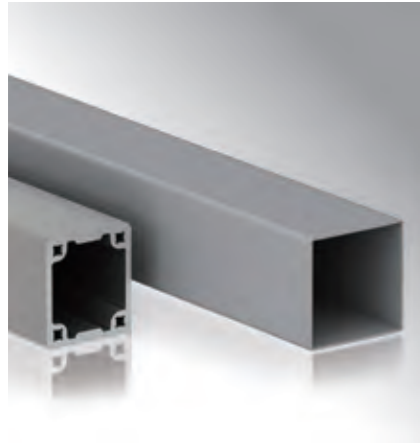
Table frame was made of Steel or aluminum, supporting construction for analytic equipment and superstructures.



C-Frame

Table frame was made of Steel or aluminum, has wide leg room and load space on the bottom, but It has low load capacity other than frame types. It used for all primary, middle and high school laboratories.

Materials of bench frame



Steel frame

Steel frame ensures that safety and excellent performance more than Aluminum, process of manufacture according to EN 10027. It used the general laboratory include heavy duty laboratory require that highly physical and chemical resistance properties.

※ Use the steel frame table when you load the heavy equipment and instruments on the table

Aluminum frame

Aluminum frame has cleanliness exterior and lightweight material, advantage of easily cutting and processing, but it has a weakness of physical properties more than the Steel. Because of frame assembly using bolts and nuts.

※ Don't use the aluminum frame table when you load the heavy equipment and instruments on the table for a long time.

| | Steel Pipe | Aluminum Pipe |
|------------------------|-----------------------|-----------------------|
| Top and bottom panel, | 50 x 50 x 1.4t | 45 x 50 |
| Vertical panel | 60 x 40 x 2.0t | 35 x 61 |
| Frame coating | Epoxy powder | Anodizing |
| Tensile Strength | 430 N/mm ² | 186 N/mm ² |
| Yield Strength | 322 N/mm ² | 145 N/mm ² |
| Elongation | 38% | 12% |
| Frame assembly process | Welding | bolts & nuts |

Essential condition of work top selection

- We recommend that obtain specific certification as follows to protect researchers and safety environments.

Chemical resistant test, according to SEFA 8 and/or EN ISO 10545 (Chemical spot tests)

Anti-bacterial test, according to ASTM G21 and/or ASTM G22 standards test – Reduced the bacteria and fungi after 24hours.

Temperature resistance, according to ATSM D648, ASTM D635 test – Self-extinguishing and/or heat resistance.

※ In addition, check the other test according to national law and/or international standards. (e.g. Physical and mechanical property tests)

Work top



Ceramic / Epoxy resin / Stainless steel

| | Friatec Ceramic | Durcon Epoxy resin | Stainless steel |
|---------------------|---|--|--|
| Compound | Silica ceramics | Epoxy resin and non-asbestos inert fillers | 304 and 316 type stainless steel (Without welds point) |
| Heat resistance | 550~800 °C | 196 °C~270 °C | 800 °C |
| Chemical resistance | Excellent | Excellent | Very good |
| Anti-bacteria test | Excellent | Excellent | Good |
| Physical properties | Excellent | Excellent | Very good |
| Size | 20mm or 26mm | 19mm or 25mm | Custom |
| Use | Hospital, medical, radiation laboratory | Heavy duty laboratory | Hospital and food research laboratory and radiation laboratory |

Phenolic laminate

| | Trespa Toplab plus | Wilsonart Chemsurf | Formica Chemtop2 |
|---------------------|---|---|---|
| Compound | Urethane - acrylic surface and cellulose fiber reinforced phenolic core | Deco paper (melamine resin) and Kraft paper (phenolic laminate) | Kraft paper (phenolic laminate and color paper) |
| Heat resistance | 180 °C | 135 °C ~ 180 °C | 135 °C ~ 180 °C |
| Chemical resistance | Excellent | Excellent | Excellent |
| Anti-bacteria test | Very good | Very good | Very good |
| Physical properties | Very good | Excellent | Very good |
| Size | 19mm or 25mm | 19mm or 25mm | 19mm or 25mm |
| Use | Hospital and food research laboratory and radiation laboratory | | |

Work top features

Friatec - Ceramic

Friatec ceramic are consist of natural material "silicate Ceramics", it can be easy cleaning without product damage after heavy contamination.

Produced in a sintering process at temperatures exceeding 1,200 °C, also has most hardness value when occurring the scratch resistance on the surface.

Also, it's possible to working with radioactive substances.

Durcon - Epoxy resin

Epoxy resin are consist of epoxy resin and non-asbestos inert fillers or with 10% of filler certified as post-consumer glass by SCS.

It provides exceptional physical and chemical resistance required in medium to heavy duty laboratory environments.

Trespa Toplab puls - Phenolic laminate

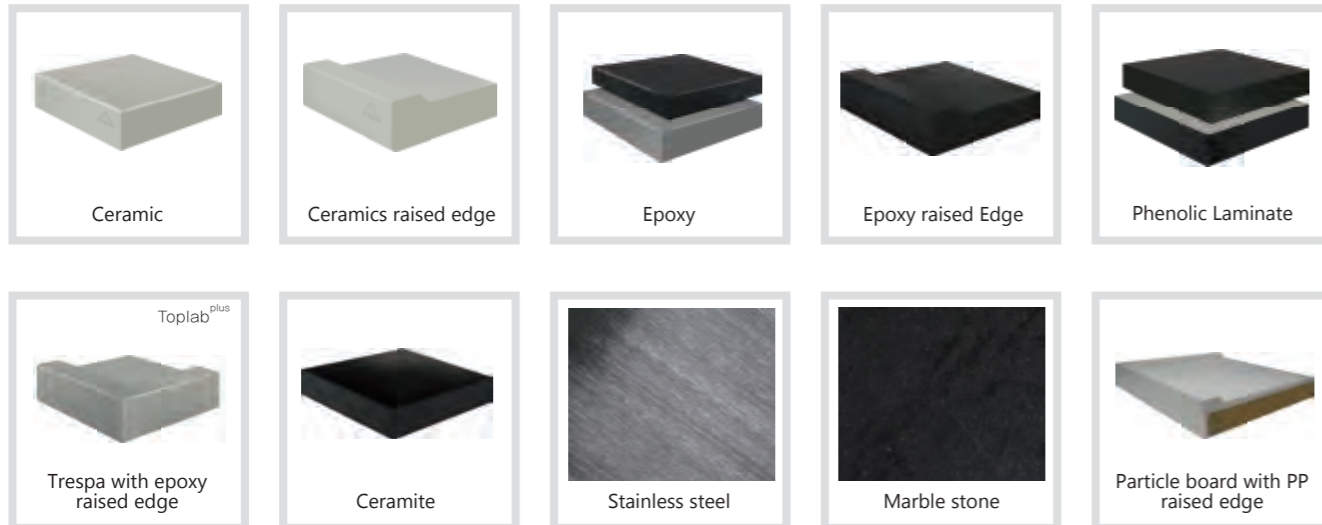
Phenolic laminate are a combination of urethane-acrylic surface and cellulose fiber reinforced phenolic core.

Work top is made by Electron Base Curing (EBC) process, Because of it has excellent chemical resistance, performance and hygiene.

Wilsonart Chemsurf - Phenolic laminate

The decorative paper is treated with melamine resin, and the kraft papers impregnated with phenolic resin. These sheets are then bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 149°C.

It has excellent physical properties according to ANSI/NEME test. (2 times higher performance)



Ceramite (Polyester resin)

Ceramite (Polyester resin) produces a mixed ceramic powder and polyester resin through mold insert. It has chemical resistance, physical durability, but less than other work top materials. Also, it has a weak scratch.

Stainless steel

Stainless steel 304 and 316 stainless steel types, 304 types reduced the carbon rate for avoiding eutectoid carbide. 316 types increase of MO rate for corrosion resistance.

It has excellent mechanical property, corrosion resistance, heat and cold temperature resistance.

Marble stone

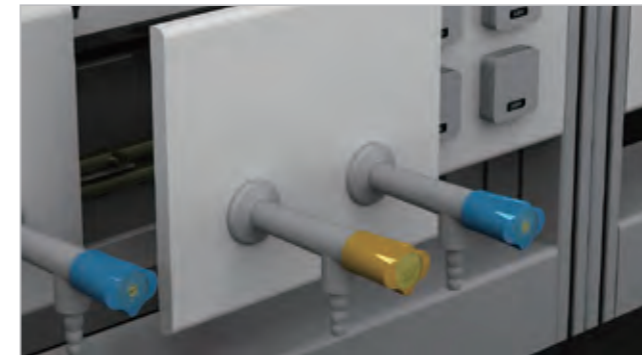
Marble stone is a kind of granite and composed of carbonate minerals. It has excellent impact and heat resistance but less than impact absorbing other materials.

Most marble stone used to work top of the balance table through cut and process.

Human Laboratory LEVEL PRO® Laboratory Furniture Strength

LEVEL PRO® laboratory furniture is possible to adjust dual height of shelf with 4 step control according to the physical condition of the researchers. It can be provided a safe and pleasant laboratory.

LEVEL PRO® Utility box



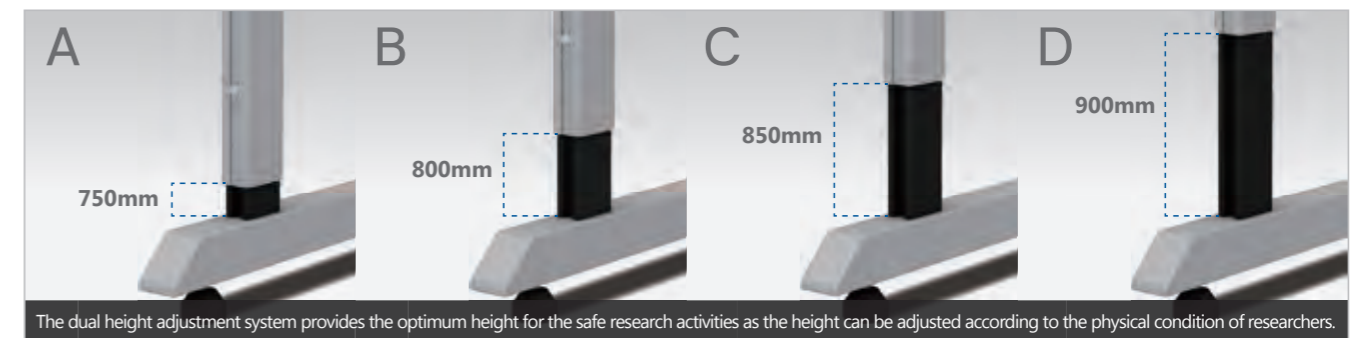
Utility box can be constructed efficiently with utility box as the combination of various units (water, gas, electrical receptacle, LAN port etc.) is depending on researcher requirements.

LEVEL PRO® Skirt panel



LEVEL PRO® skirt panel has that installation, wiring and gas/water lines, convenient for A/S, possible to detachable panel using buttons.

4 step height-adjustable lab table



The dual height adjustment system provides the optimum height for the safe research activities as the height can be adjusted according to the physical condition of researchers.

※ The distance of between floor and work surfaces is 750mm, 800mm, 850mm and 900mm

Choice of 3 colors, Hulab®

LEVEL PRO® can be selected by the height frame and the pillar cover colors. HARD PRO® can be selected of the pillar cover colors.



Human Laboratory

HARD PRO® Laboratory Furniture Strength

HARD-PRO laboratory provides steel or aluminum frame, selectable according to using materials and environments.

• HARD PRO® Utility box



Remove the unnecessary design and joint bolt of utility box has that convenient for A/S and utility extension.

• HARD PRO® Skirt panel



Bolted type of HARD PRO skirt panel protects that exposure of wiring and gas/water lines, also convenient for A/S using possible to detachable panel.

• HARD PRO® Choice of hard-pro frame



• HARD PRO frame type

HARD PRO is able to choose the steel or aluminum according to environments and researchers requirement.

• Steel type

Weld heat treatment of the concentrated load region has to increase the safety for the steel type, excellent of fire resistance through epoxy powder coating panel with durable and safe to reinforce load.

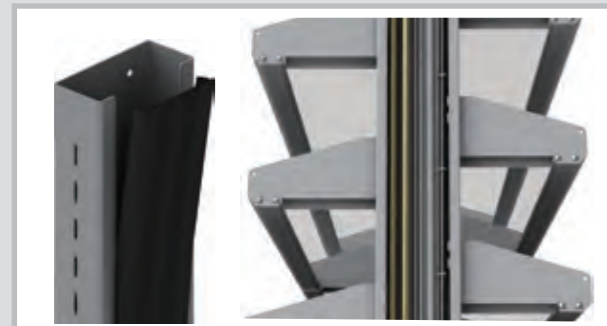
• Aluminum type

Cleanliness exterior of Aluminum frame is reduced weight, and increase water resistance. It used for specific animals, medical and other laboratories.

• Common information about LEVEL PRO® and HARD PRO®

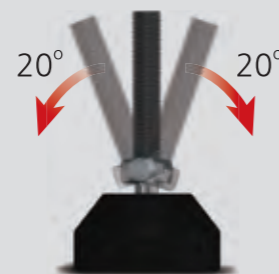
• Convenient pillar structure for A/S and installation

Easily removable pillar cover provides convenient extension, increase safe and convenience through the separate of gas, water, electric line space.



• Fixed foot

It is possible to top and bottom height control besides adjusts the inclination to until the 20 degrees for safety installation on the bumpy floor.



• Integral receptacle

Attached integral receptacle is consist of 2 outlets each of the front and back on the center table, can be selective of the 220V or 110V.



Human Laboratory

hulab® Height Adjustable Shelf

Adjusting the height of shelves is possible to storage of reagent bottles of various sizes, and operating the sizable experiment equipment through configuration of shelf panels for pleasant experimental environment.

• Ergonomic dual height adjustment system

The dual height adjustable system enables not only to arrange the sizable experiment equipment but also to store the reagent bottles of various sizes with convenience and safety by adjusting the height of a shelf.



• Safety reinforced design



• Safety separate shelf table



Each shelf is available to put up and down independently on opposite shelf. It is easy to put large size equipment on the table.

• Type of shelf panel

• Tempered glass

Tensile strength of tempered glass has 3 times stronger than normal glass. It has excellent chemical resistance and light penetration therefore immediate detection of contamination and leaks of reagent.

• Particle board shelf

Particle board shelf increases the chemical resistance through L.P.M treatment, and has an economical panel.

• Phenolic laminate

Phenolic laminate has excellent chemical, heat and physical resistance, thus possible to safety use.

| | | Tempered glass | P.B | Phenolic laminate |
|-----------|----------|----------------|----------|-------------------|
| Level-Pro | | Standard | Option | |
| Hard-Pro | Steel | Option | Standard | Option |
| | Aluminum | Standard | Option | |

• Detachable fall prevention bar

If the shelf is integrated fall prevention bar, damaged by reagent bottle get pushed into a bar. Depending on researcher requirements, can be detachable for preventing an accident.

• Separate structure of centers

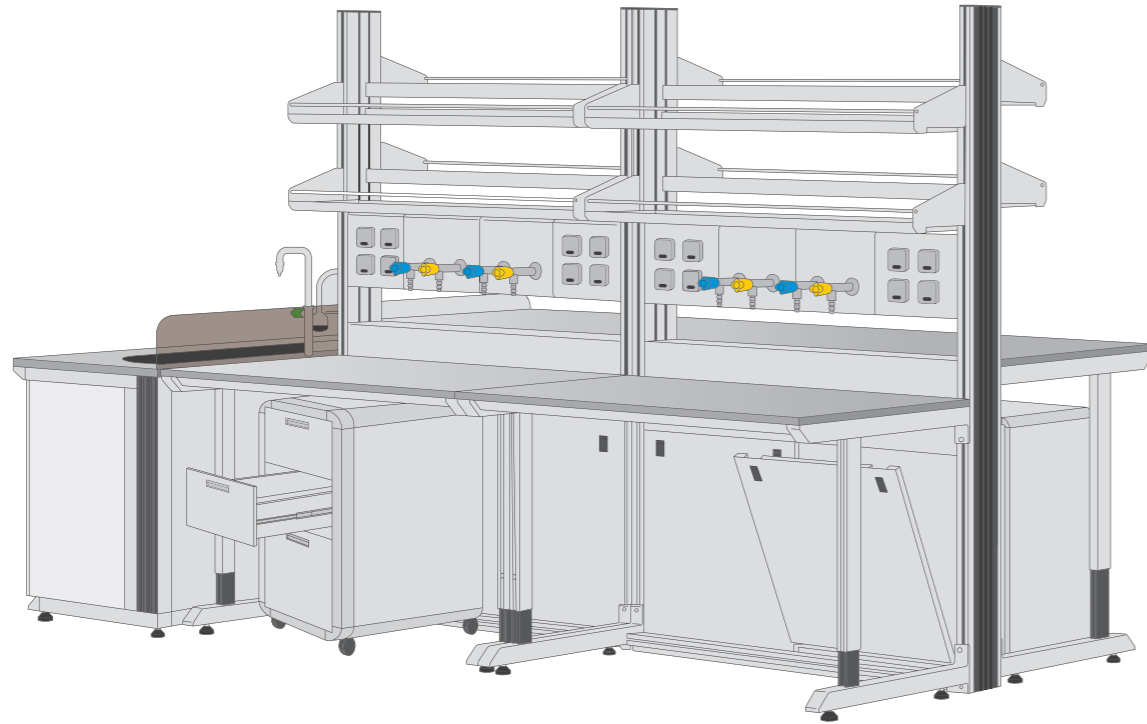
Rear of shelf is designed by separate structure of centers, it can prevent the falling reagent bottles from the panel.

hulab[®] LEVEL PRO

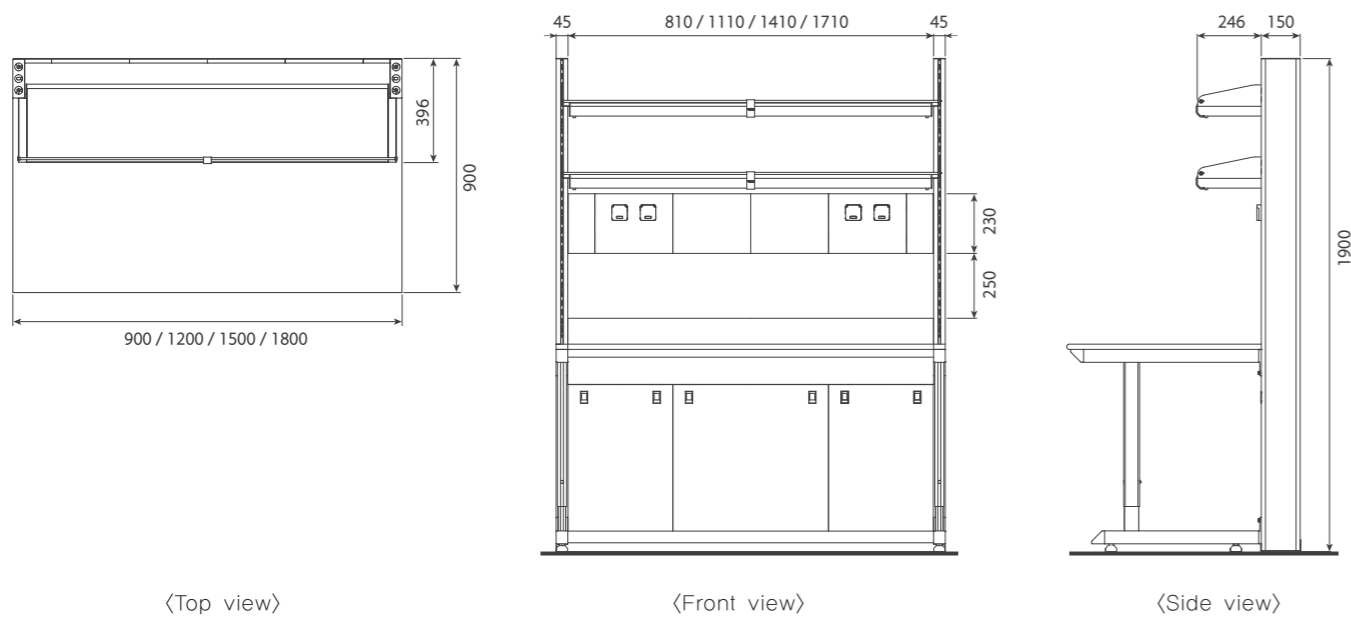


Human Laboratory LEVEL PRO® Laboratory Furniture

The LEVEL PRO furniture system creates a high performance laboratory through the assembly height-adjustable shelves and 4 step height-adjustable tables. It consists of 900mm, 1200mm, 1500mm and 1800mm, thus possible to install a variety of sizes on the laboratory place.

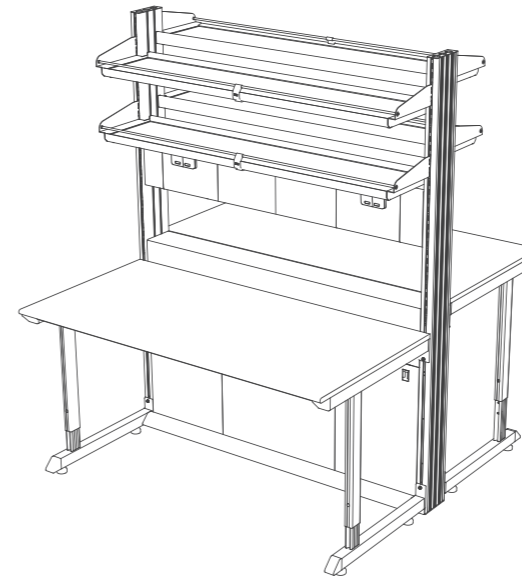


◦ Dimensional drawing



Human Laboratory LEVEL PRO® Lab Table List

◦ Center table (Shelf type)

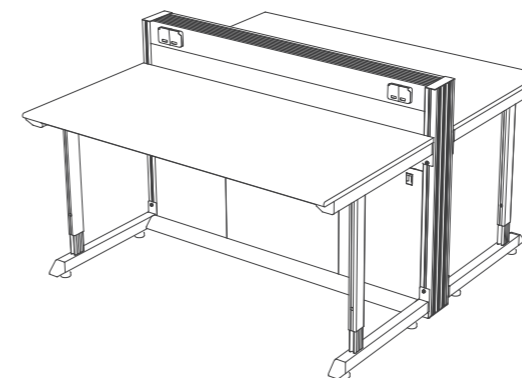


| | |
|-------------------|-----------------------|
| Model No. | H-LCS-(width) |
| Width | 900/ 1200/ 1500/ 1800 |
| Depth | 1650 |
| Height | 1900 |
| Adjustable height | 750/ 800/ 850/ 900 |

[Components]

1. Height-adjustable table 2EA
2. Service wall (double side shelf type)
 - Receptacle 220V (2p type) 4EA
 - Utility valve (option)
3. Shelf 4EA

◦ Center table



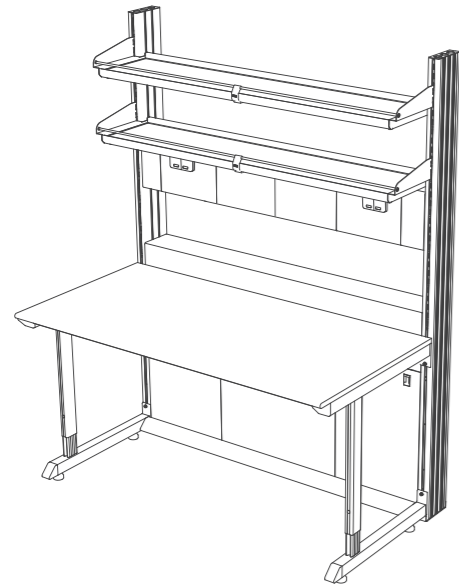
| | |
|-------------------|-----------------------|
| Model No. | H-LCP-(width) |
| Width | 900/ 1200/ 1500/ 1800 |
| Depth | 1650 |
| Height | 1000 |
| Adjustable height | 750/ 800/ 850/ 900 |

[Components]

1. Height-adjustable table 2EA
2. Service wall (short type)
 - Receptacle 220V (2p type) 4EA
 - Utility valve (option)

Human Laboratory
LEVEL PRO® Lab Table List

◦ **Side table (Shelf type)**

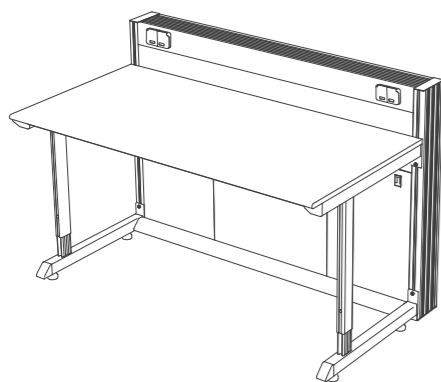


| | |
|-------------------|-----------------------|
| Model No. | H-LSS-(width) |
| Width | 900/ 1200/ 1500/ 1800 |
| Depth | 900 |
| Height | 1900 |
| Adjustable height | 750/ 800/ 850/ 900 |

[Components]

1. Height-adjustable table 1EA
2. Service wall (single side shelf type)
 - Receptacle 220V (2p type) 2EA
 - Utility valve (option)
3. Shelf 2EA

◦ **Side table**



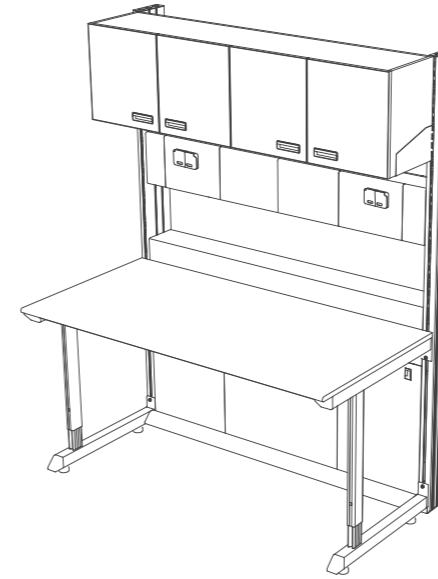
| | |
|-------------------|-----------------------|
| Model No. | H-LSP-(width) |
| Width | 900/ 1200/ 1500/ 1800 |
| Depth | 900 |
| Height | 1000 |
| Adjustable height | 750/ 800/ 850/ 900 |

[Components]

1. Height-adjustable table 1EA
2. Service utility wall (short type)
 - Receptacle 220V (2p type) 2EA
 - Utility valve (option)

Human Laboratory
LEVEL PRO® Lab Table List

◦ **Side table (Mounted cabinet)**

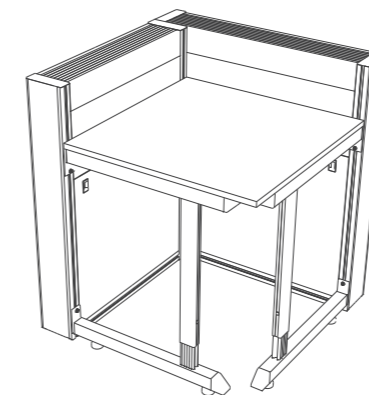


| | |
|-------------------|-----------------------|
| Model No. | H-LSC-(width) |
| Width | 900/ 1200/ 1500/ 1800 |
| Depth | 900 |
| Height | 1900 |
| Adjustable height | 750/ 800/ 850/ 900 |
| Mounted cabinet | 2 / 4 Door |

[Components]

1. Height-adjustable table 1EA
2. Service utility wall (single side shelf type)
 - Receptacle 220V (2p type) 2EA
 - Utility valve (option)
3. Mount cabinet 1EA

◦ **Corner table**



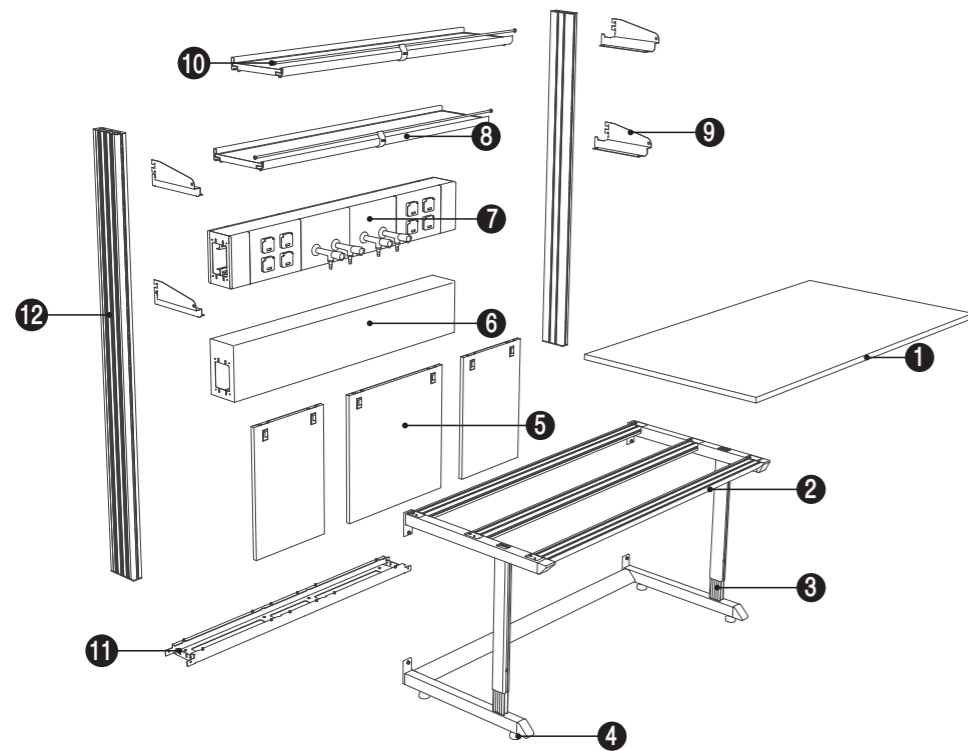
| | |
|-------------------|--------------------|
| Model No. | H-LCN-900 |
| Width | 900 |
| Depth | 900 |
| Height | 1000 |
| Adjustable height | 750/ 800/ 850/ 900 |

[Components]

1. Height-adjustable table 1EA
2. Service wall (short type) 2EA
 - Receptacle (option)
 - Utility valve (option)

Human Laboratory LEVEL PRO® Service Wall

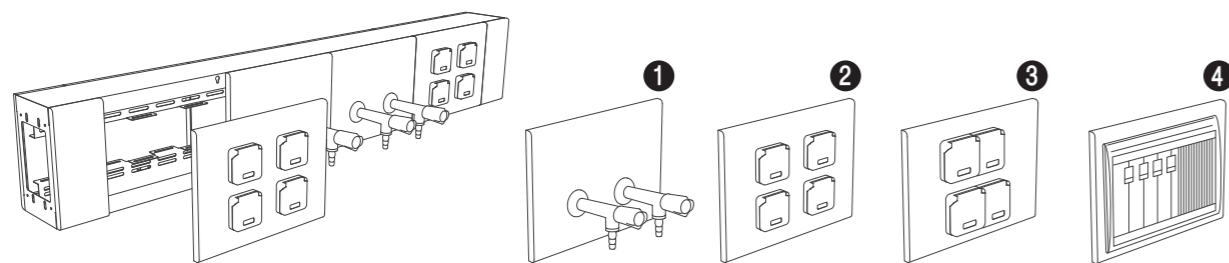
Design



[Components]

- 1. Work top
- 2. Top support frame
- 3. Height-adjustable table frame
- 4. Fixed foot
- 5. Skirt panel
- 6. Utility sub box
- 7. Utility main box
- 8. Shelf
- 9. Shelf bracket
- 10. Fall prevention bar & cap
- 11. Bracket
- 12. Pillar structure & cover

Combination of various utilities



- 1. Addition of corner valves type
- 2. Addition of electrical receptacle (1p type, 220V and/or 110V) type
- 3. Addition of electrical receptacle (2p type, 220V and/or 110V) type
- 4. Addition of automatic circuit breaker or LAN ports type

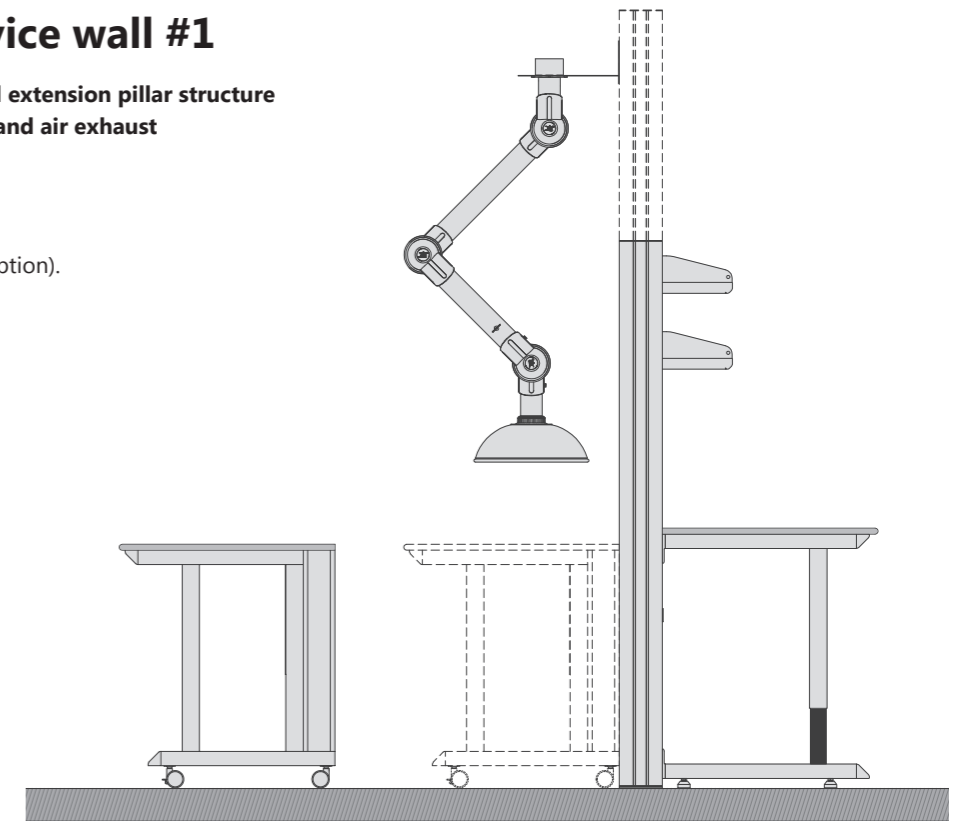
Human Laboratory LEVEL PRO® Service Wall

LEVEL-PRO® Service wall #1

- Installation of arm hood and extension pillar structure
- Possible to reagent storage and air exhaust

[Components]

- 1. Service wall
- 2. Extension pillar structure (option).
- 3. Movable table
- 4. Height-adjustable table
- 5. Arm hood



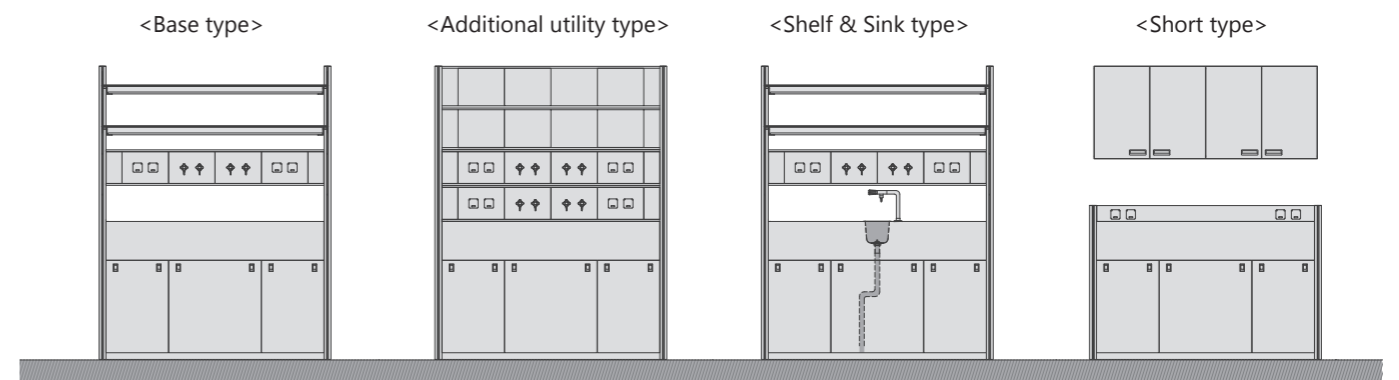
LEVEL-PRO® Service wall #2

1st Base type, Combination of service well and 2 glass shelves, possible to reagent storage.

2nd Without shelf type, Provide the largest service line space.

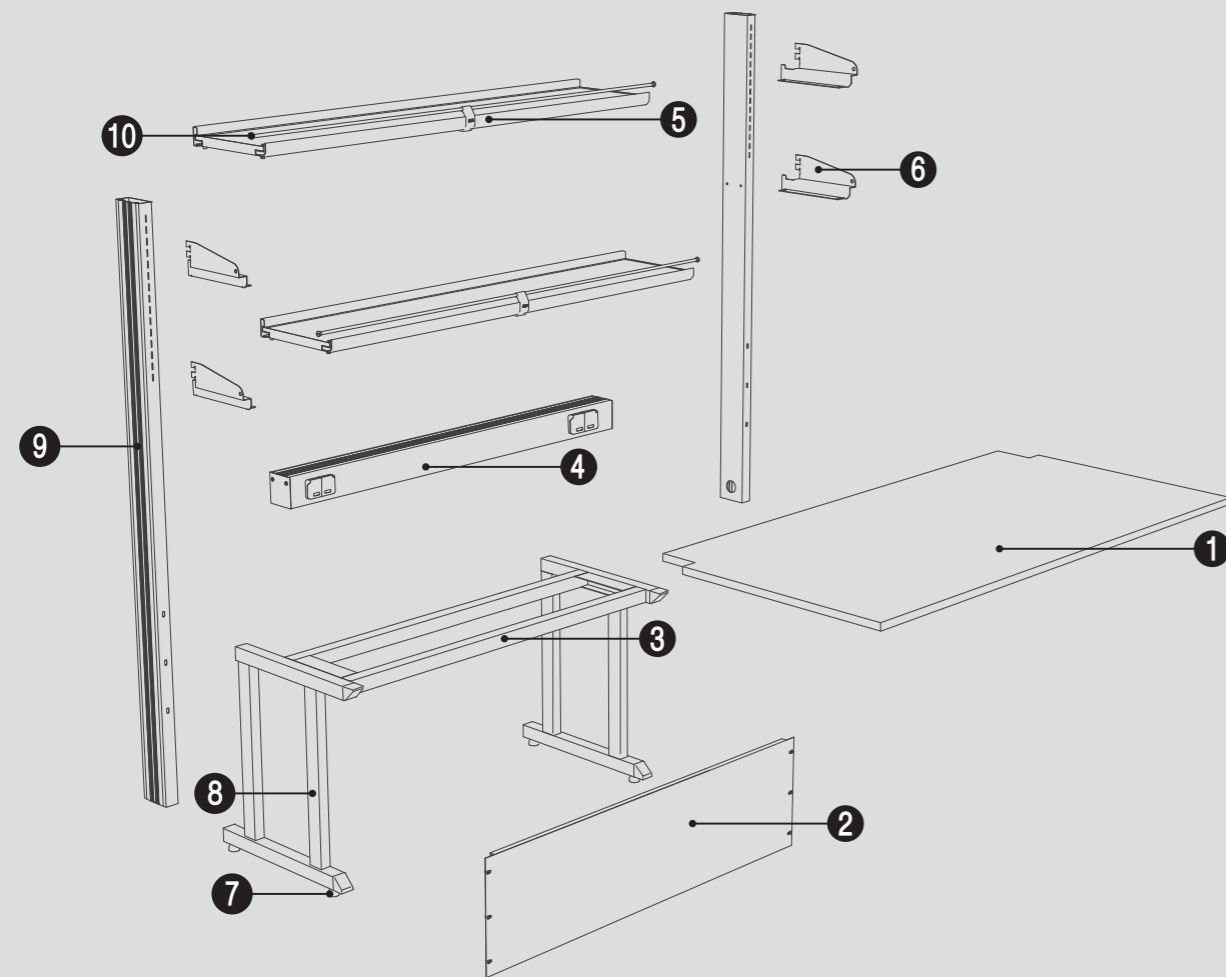
3rd Sink and drain type, Installation of sink and drain.

4th Short type, Installation at the small space.



hulab[®] HARD PRO

• HARD PRO[®] Design



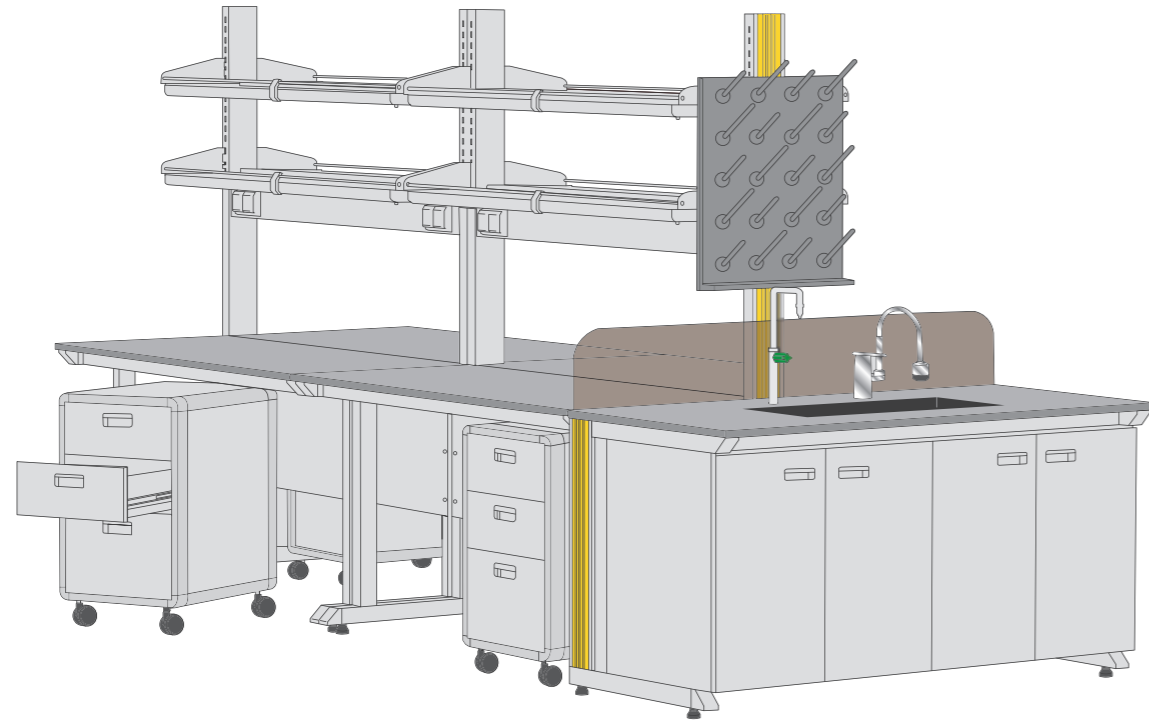
[Components]

- 1. Work top
- 2. Skirt pannel
- 3. Top support frame
- 4. Utility box
- 5. Shelf
- 6. Shelf bracket
- 7. Fixed foot
- 8. Bench frame
- 9. Pillar structure & cover
- 10. Fall prevention bar & cap

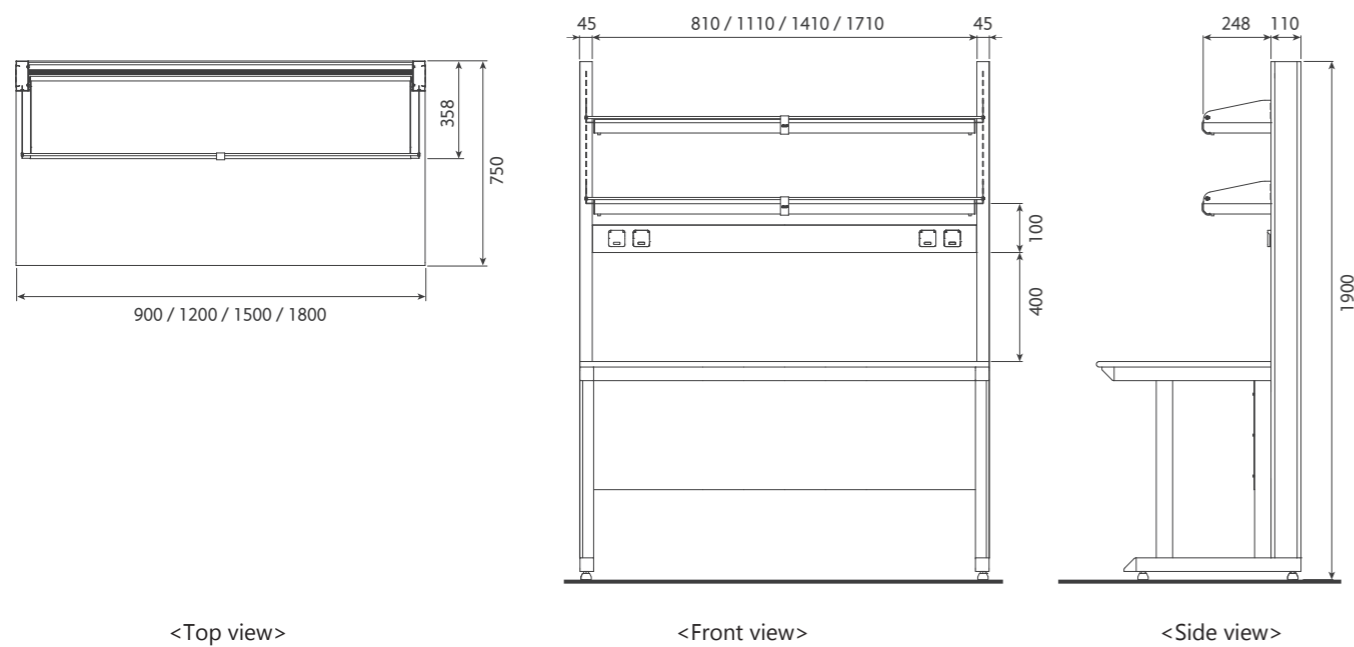


Human Laboratory HARD PRO® Laboratory Furniture

The HARD PRO furniture system has height-adjustable shelves and possible to choose the steel or aluminum table frames. It consists of 900mm, 1200mm, 1500mm and 1800mm, thus possible to install a variety of sizes on the laboratory place.

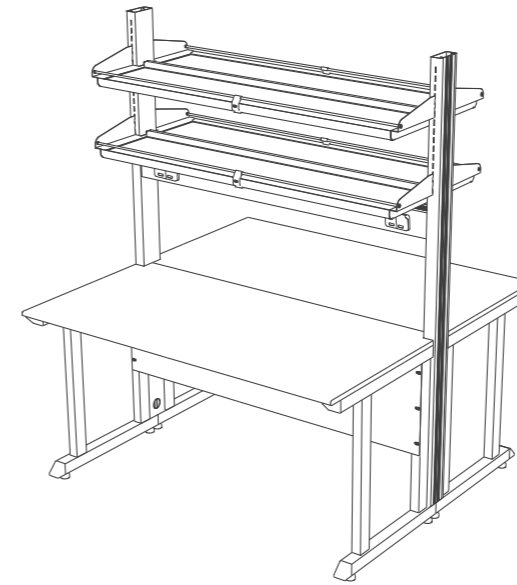


◦ Dimensional drawing



Human Laboratory HARD PRO® Lab Table List

◦ Center table (Shelf type)

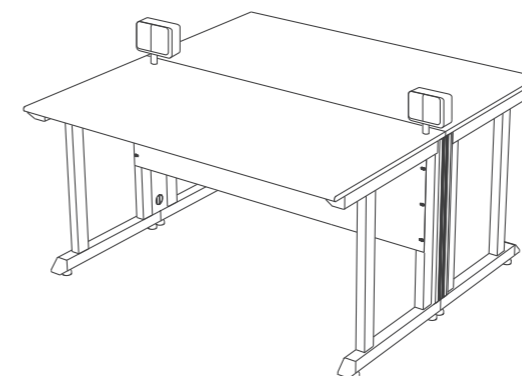


| | | |
|-----------|-----------------------|-----------------|
| Model No. | Steel type | H-HCS-(width)-S |
| | Aluminum type | H-HCS-(width)-A |
| Width | 900/ 1200/ 1500/ 1800 | |
| Depth | 1500 | |
| Height | 1900 | |

[Components]

- Center table 1EA
- Utility box
- Receptacle 220V (2p type) 2EA, 110V (2p type) 2EA
- Shelf 4EA
- Pillar structure & cover

◦ Center table



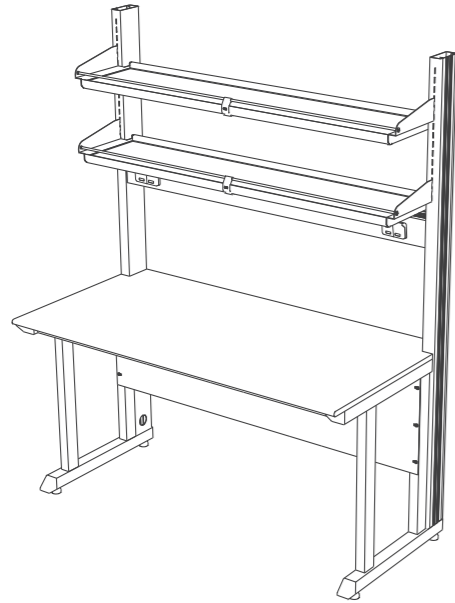
| | | |
|-----------|-----------------------|-----------------|
| Model No. | Steel type | H-HCP-(width)-S |
| | Aluminum type | H-HCP-(width)-A |
| Width | 900/ 1200/ 1500/ 1800 | |
| Depth | 1500 | |
| Height | 800 | |

[Components]

- Center table 1EA
- Receptacle case
- Receptacle 220V (2p type) 2EA, 110V (2p type) 2EA
- Pillar structure & cover

Human Laboratory
HARD PRO® Lab Table List

◦ **Side table (Shelf type)**

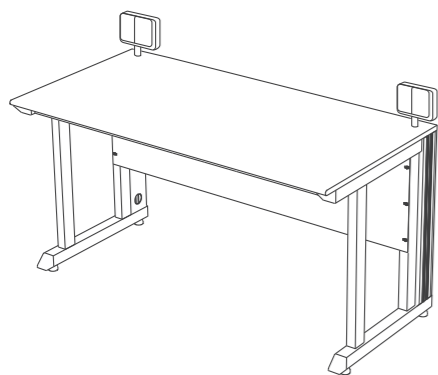


| | | |
|-----------|---------------|-----------------------|
| Model No. | Steel type | H-HSS-(width)-S |
| | Aluminum type | H-HSS-(width)-A |
| Width | | 900/ 1200/ 1500/ 1800 |
| Depth | | 750 |
| Height | | 1900 |

[Components]

1. Table 1EA
2. Utility box
 - Receptacle 220V (2p type) 1EA, 110V (2p type) 1EA
3. Shelf 2EA
4. Pillar structure & cover

◦ **Side table**



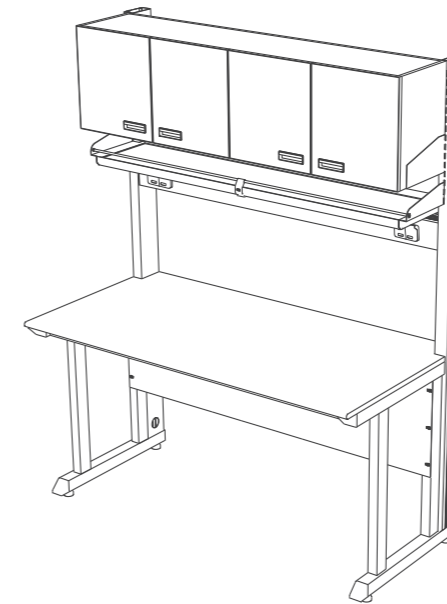
| | | |
|-----------|---------------|-----------------------|
| Model No. | Steel type | H-HSP-(width)-S |
| | Aluminum type | H-HSP-(width)-A |
| Width | | 900/ 1200/ 1500/ 1800 |
| Depth | | 750 |
| Height | | 800 |

[Components]

1. Table 1EA
2. Receptacle case
 - Receptacle 220V (2p type) 1EA, 110V (2p type) 1EA
3. Pillar structure & cover

Human Laboratory
HARD PRO® Lab Table List

◦ **Side table (Mounted cabinet)**

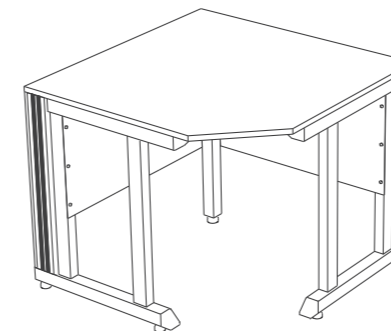


| | | |
|-----------------|---------------|-----------------------|
| Model No. | Steel type | H-HSC-(width)-S |
| | Aluminum type | H-HSC-(width)-A |
| Width | | 900/ 1200/ 1500/ 1800 |
| Depth | | 750 |
| Height | | 1900 |
| Mounted cabinet | | 2 / 4 Door |

[Components]

1. Table 1EA
2. Utility box
 - Receptacle 220V (2p type) 1EA, 110V (2p type) 1EA
3. Pillar structure & cover
4. Mounted cabinet 1EA
5. Shelf 1EA

◦ **Corner table**



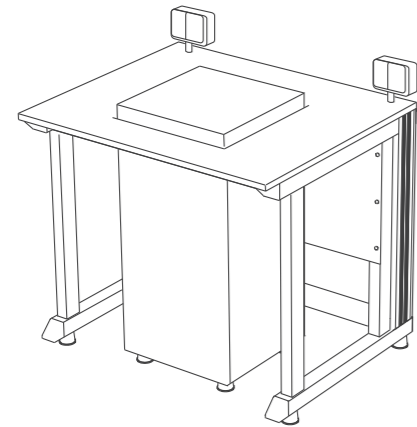
| | | |
|-----------|---------------|-----------------|
| Model No. | Steel type | H-HCN-(width)-S |
| | Aluminum type | H-HCN-(width)-A |
| Width | | 1000 |
| Depth | | 1000 |
| Height | | 800 |

[Components]

1. Table 1EA
2. Receptacle (option)
3. Pillar structure & cover

Human Laboratory
HARD PRO® Lab Table List

◦ Balance table

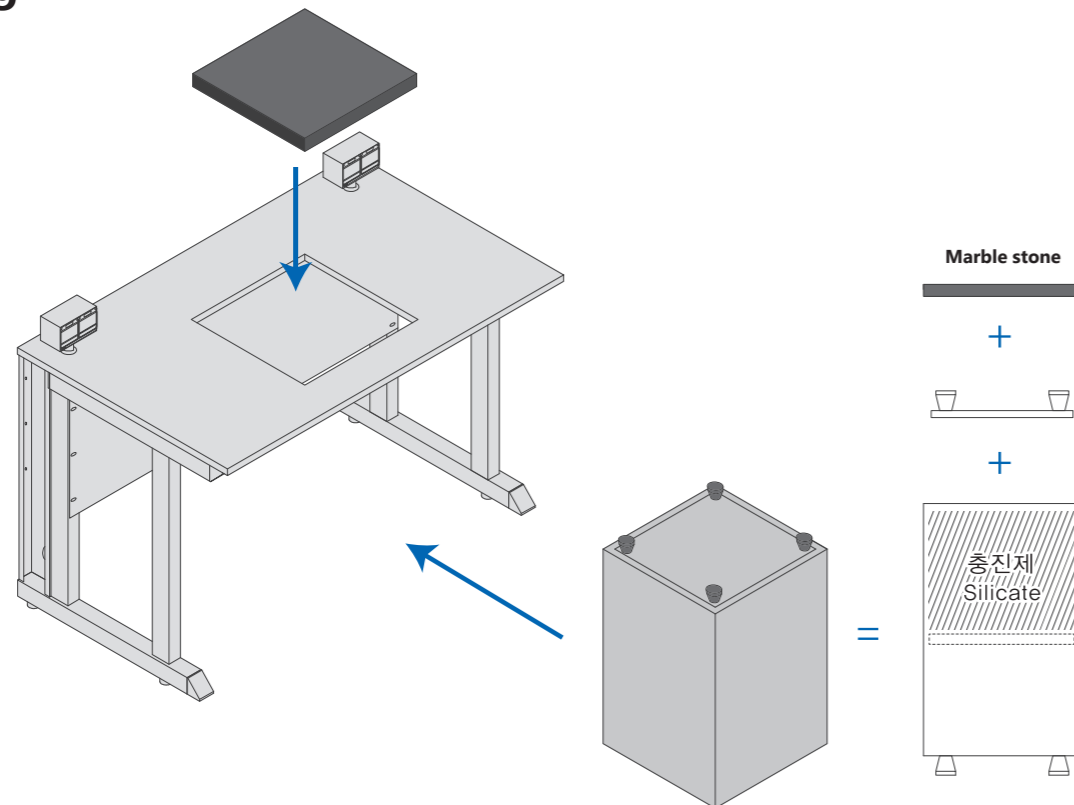


| | | |
|------------|---------------|-------------------|
| Model No. | Steel type | H-HBL-(width)-S |
| | Aluminum type | H-HBL-(width)-A |
| Width | | 900 / 1200 |
| Depth | | 750 |
| Height | | 800 |
| Work top 1 | | Marble stone |
| Work top 2 | | Phenolic laminate |

[Components]

1. Table 1EA
2. Work top
 - Marble stone
 - Phenolic laminate
3. Receptacle case
 - Receptacle 220V (2p type) 1EA, 110V (2p type) 1EA
4. Pillar structure & cover

◦ Design



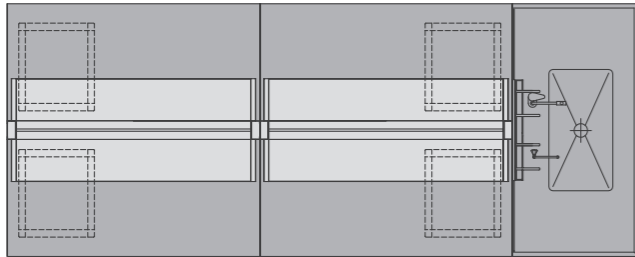
hulab®
HARD PRO
 Floor plan



Human Laboratory
HARD PRO® Floor Plan

◦ **Center table plan #1**

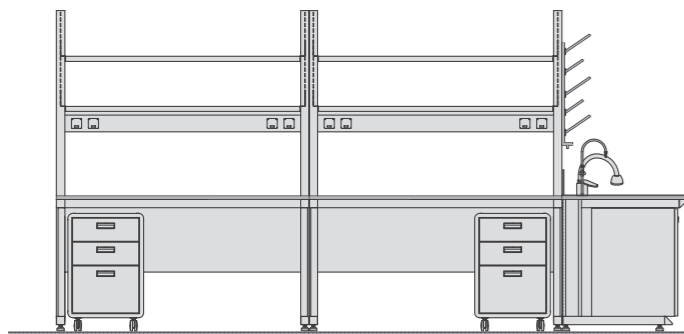
<Top view>



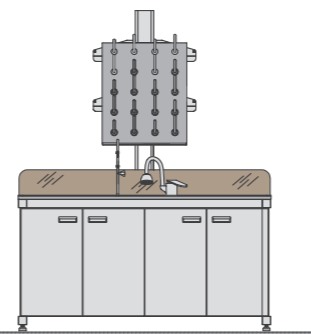
[Components]

1. Center table (shelf) 2EA
2. Sink table 1EA
3. Movable drawer 4EA (R-type)
4. Pegboard 1EA

<Front view>

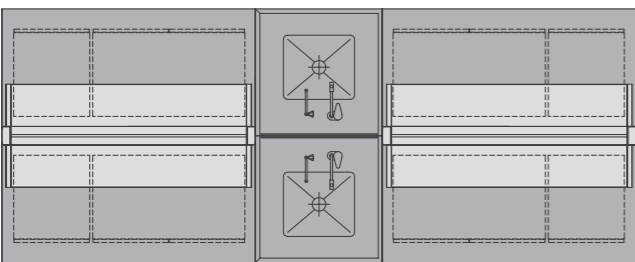


<Side view>



◦ **Center table plan #2**

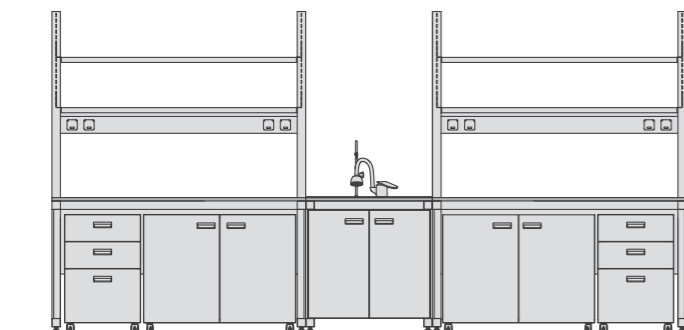
<Top view>



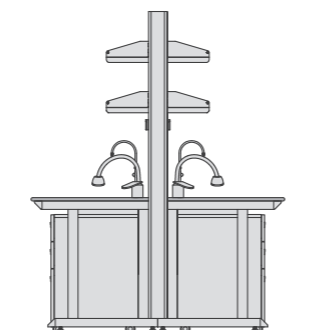
[Components]

1. Center table (shelf) 2EA
2. Sink table 2EA
3. Movable drawer 4EA (Standard)
4. Movable cabinet 4EA (Standard)

<Front view>



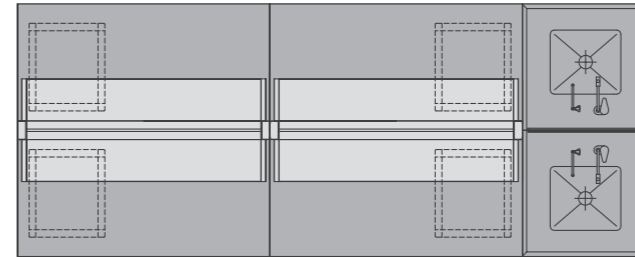
<Side view>



Human Laboratory
HARD PRO® Floor Plan

◦ **Center table plan #3**

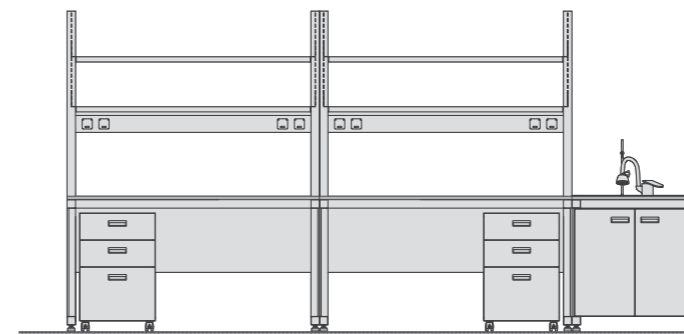
<Top view>



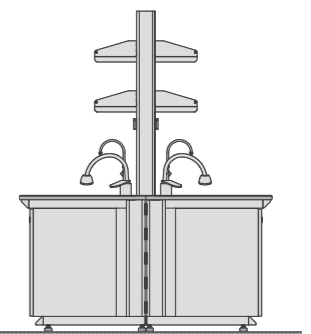
[Components]

1. Center table (shelf) 2EA
2. Sink table 2EA
3. Movable drawer 4EA (Standard)

<Front view>

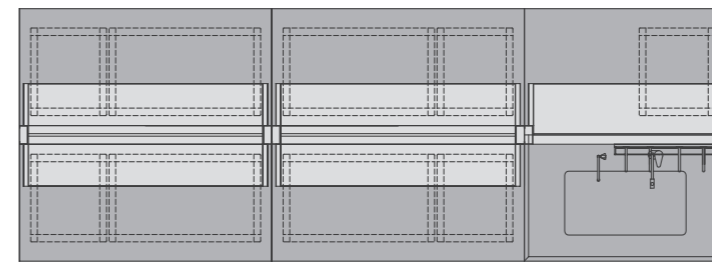


<Side view>



◦ **Center table plan #4**

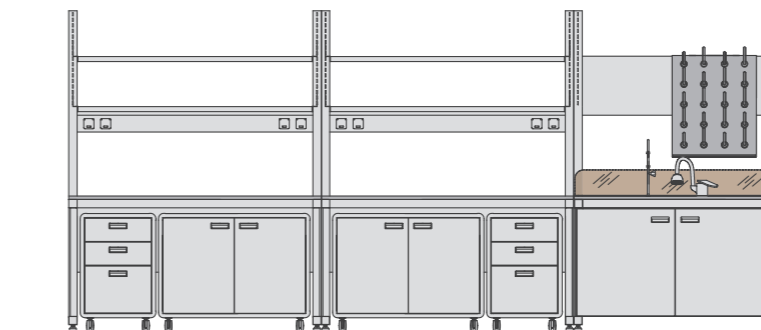
<Top view>



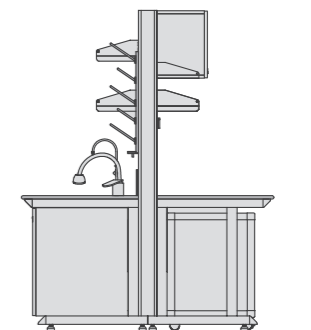
[Components]

1. Center table (shelf) 2EA
2. Side table (mounted cabinet) 1EA
3. Sink table 1EA
4. Movable drawer 5EA (R-type)
5. Movable cabinet 4EA (R-type)
6. Pegboard 1EA

<Front view>



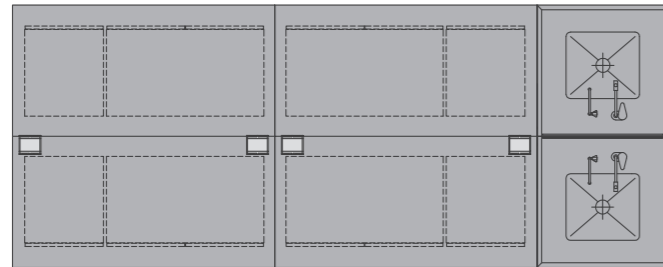
<Side view>



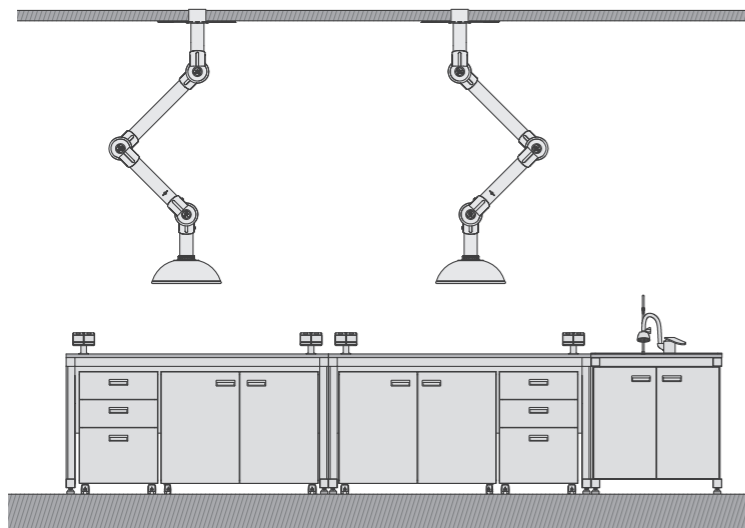
Human Laboratory
HARD PRO® Floor Plan

○ Center table plan #5

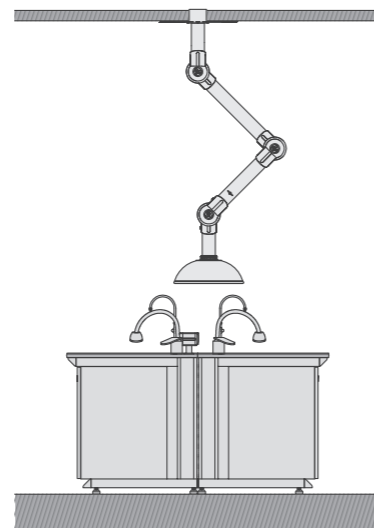
<Top view>



<Front view>



<Side view>



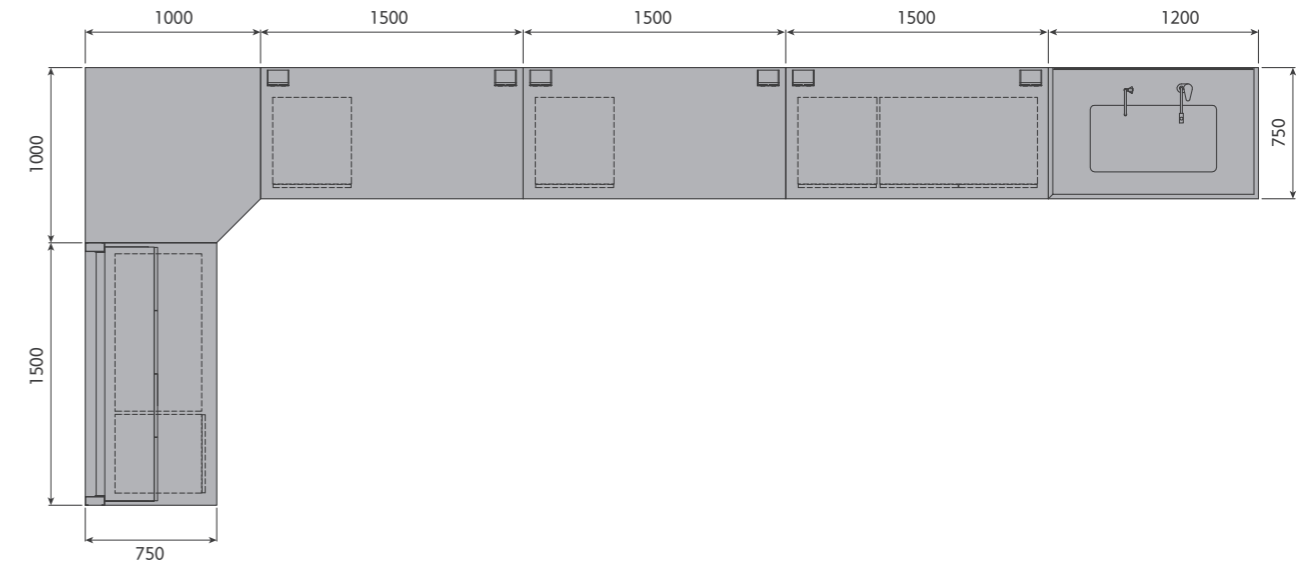
[Components]

- 1. Center table 2EA
- 2. Sink table 2EA
- 3. Movable drawer 4EA
- 4. Movable cabinet 4EA
- 5. Arm hood 2EA

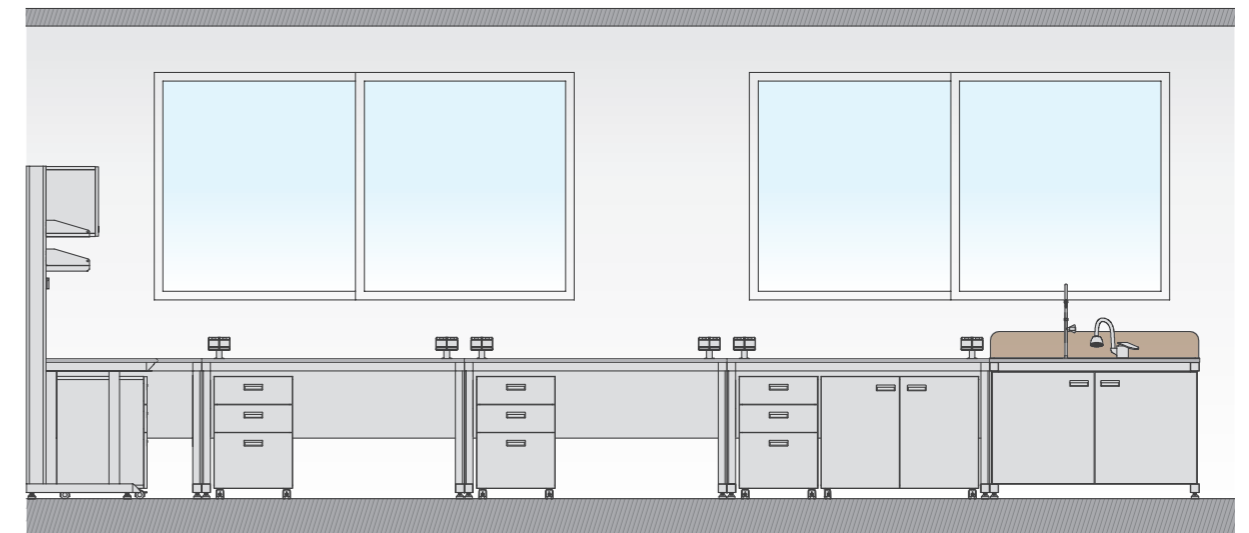
Human Laboratory
HARD PRO® Floor Plan

○ Side table plan

<Top view>



<Front view>



[Components]

- 1. Side table 3EA
- 2. Side table (Mounted cabinet) 1EA
- 3. Corner table 1EA
- 4. Sink table 1EA
- 5. Movable drawer 4EA
- 6. Movable cabinet 2EA

Human Laboratory

Sink Table

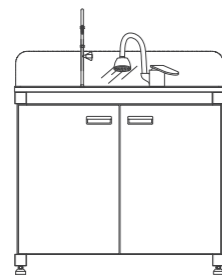
- CHC LAB's Sink table made a various materials, and has excellent chemical resistance (e.g., Polypropylene, stainless, epoxy resin).
It's possible to combination of pegboard and/or emergency eye washer through researcher requirements.



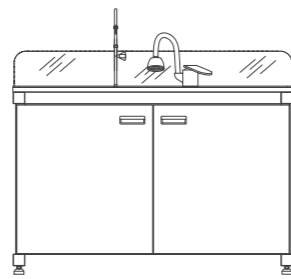
Type of sink table



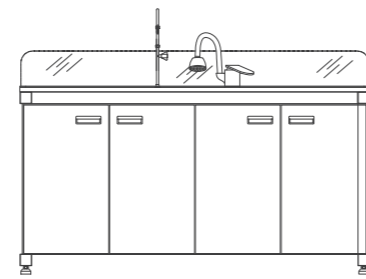
<H-SS-750-S/A>



<H-SS-900-S/A>

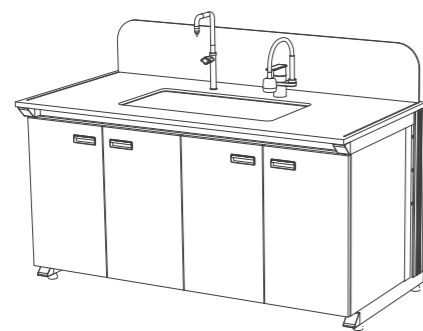


<H-SS-1200-S/A>



<H-SS-1500-S/A>

H-SS-A



| | |
|--------------|---|
| Model No. | H-SS-(width)-S H-SS-(width)-A |
| Width | 750 / 900 / 1200 / 1500 |
| Depth | 750 |
| Height | 800 |
| Sink top | Phenolic laminated |
| Sink bowl | PP |
| Body | Steel frame & LPM P.B |
| Water faucet | One-way chemical faucet / Mixing faucet |

Pegboard

- Pegboard is made of high impact polystyrene, thus has strong resistance to scratches and chemicals.
The peg sockets have closed ends, eliminating leakage and consequent biohazards.

- Provides 83 single modules (4 mm rigid HLPS)



| | |
|----------|-----------------|
| Pegboard | Size (WxHxD) mm |
| | 450 x 630 x 110 |

Human Laboratory HARD PRO® Sink Accessories

Water faucet & Emergency shower



Water faucet

Ergonomic handles with changeable of TOF laboratory faucet and faucet fitting line has functioned from -30°C to 150 °C, also shown the extremely rare alterations about the exposure to chemical reagents.

Eye washer

Eye washer has modern manufacturing technology guaranteeing maximum use, reliability and functionality.

Body shower

Floor, wall or ceiling mounted Safety showers is mounted on pre-assembled parts, possible for easy maintenance of extract and control parts.



One way mixing faucet

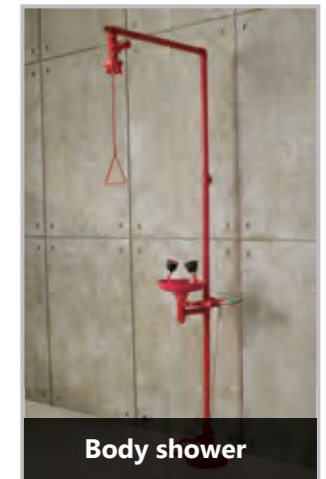
One way water faucet

Three way water faucet

| | Eye washer | Body shower |
|------------------------------|--------------------|-------------|
| Pressure (Min) | 2 bar | |
| Capacity | 6L / min (Single) | 30L / min |
| | 12L / min (Double) | |
| Anti-corrosive epoxy coating | | |
| Certified to DIN EN 246 | | |



Eye washer



Body shower

Sink bowl

Epoxy



It provides exceptional physical and chemical resistance required in medium to heavy duty laboratory environments.

Polypropylene



Smooth and light material has a reduced to damage of fragile apparatus, excellent chemical resistance include hydrofluoric acid and to ease maintenance of cleaning.

Stainless steel



Two types of stainless steel, (304 and 316 type) have excellent mechanical property, corrosion resistance, heat and cold temperature resistance.

Wood type Storage Cabinet

• H-CAB

• Body

The E0 class P.B and L.P.M treatment are increasing the chemical resistance. It is an economical green panel.

• Door

The sliding door type is fitted clear glass, easy to observe the reagent bottle, can be used easily in a small space.

• Shelves

Detachable shelves are able to load according to the size and height of reagent.

• Horizontal adjustable foot

It is possible to horizontally adjustable PVC circle foot, possible to safety installation on the bumpy floor.



• H-ACAB

• Body

The E0 class P.B and L.P.M treatment are increasing the chemical resistance. It is an economical green panel.

• Door

The hinged door type fits aluminum sash frame with unclear glass, minimize expose of the light and safety storage of light sensitive reagents.

• Shelves

Detachable shelves are able to load according to the size and height of reagent.

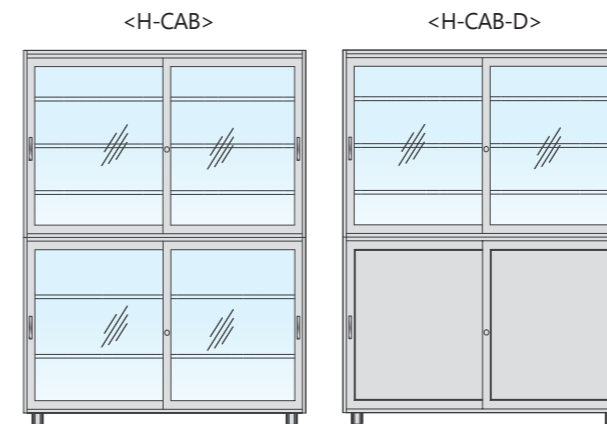
• Horizontal adjustable foot

It is possible to horizontally adjustable PVC circle foot, possible to safety installation on the bumpy floor.



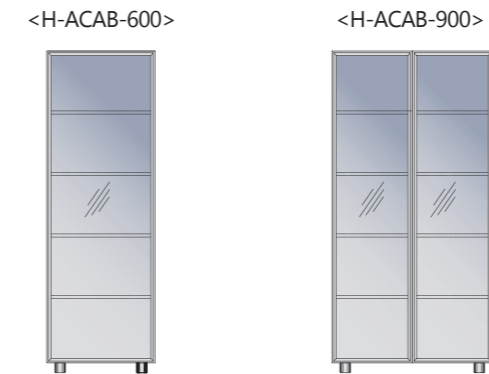
Human Laboratory hulab® Storage Cabinet

• H-CAB



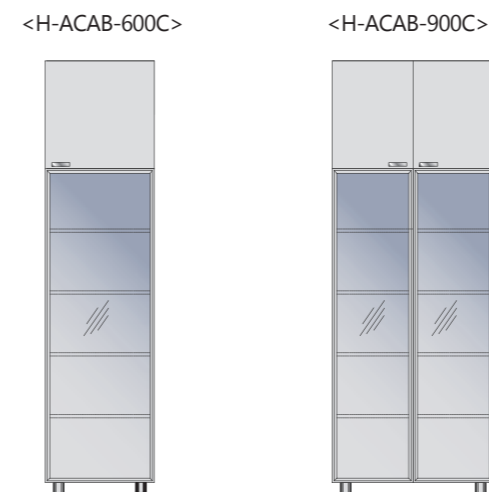
| Model No. | Dimension (WxDxH)mm | Material | | |
|-------------|---------------------|----------|------------|-----------------|
| | | Body | Door Frame | Window |
| H-CAB-1200 | 1200x450x1800 | LPM P.B | LPM P.B | Glass |
| H-CAB-1500 | 1500x450x1800 | | | |
| H-CAB-1800 | 1800x450x1800 | | | |
| H-CAB-1200D | 1200x450x1800 | LPM P.B | LPM P.B | Glass & LPM P.B |
| H-CAB-1500D | 1500x450x1800 | | | |
| H-CAB-1800D | 1800x450x1800 | | | |

• H-ACAB



| Model No. | Dimension (WxDxH)mm | Material | | |
|------------|---------------------|----------|------------|---------|
| | | Body | Door Frame | Window |
| H-ACAB-600 | 600x450x1800 | LPM P.B | Aluminum | Acrylic |
| H-ACAB-900 | 900x450x1800 | | | |

• H-ACAB-C



| Model No. | Dimension (WxDxH)mm | Material | | |
|-------------|---------------------|----------|------------|---------|
| | | Body | Door Frame | Window |
| H-ACAB-600C | 600x450x1800/2400 | LPM P.B | Aluminum | Acrylic |
| H-ACAB-900C | 900x450x1800/2400 | | | |

For the efficient use of space

Movable Drawer & Cabinet

• H-MD3

• Basic drawer

Basic cabinet consists of E0 class P.B and L.P.M treatment, thus increasing the chemical resistance. It is an economical green panel.

• Type of movable drawer

Cabinet is possible to choose a 2, 3 or 4 step movable cabinet according to the purpose of use.



| Model No. | Dimension (WxDxH)mm | Material |
|-----------|---------------------|------------|
| H-MD2/3/4 | 450x515x700 | LPM P.B |

Human Laboratory hulab® Movable Drawer & Cabinet

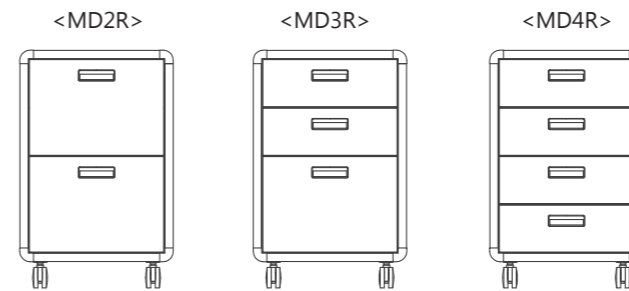
• H-MD3R

• Aluminum frame

Aluminum frame has a resistance of discoloration and corrosion, provides safety for researchers.

• Type of movable cabinet

Cabinet is possible to choose a 2, 3 or 4 step movable cabinet according to the purpose of use.



| Model No. | Dimension (WxDxH)mm | Material | | |
|---------------|---------------------|----------|-------------|----------------------------|
| | | Frame | Front panel | Panel |
| H-MD/2R/3R/4R | 450x515x700 | Aluminum | LPM P.B | MDF |
| | | | | Phenolic laminate (Option) |
| | | | | Steel (Option) |

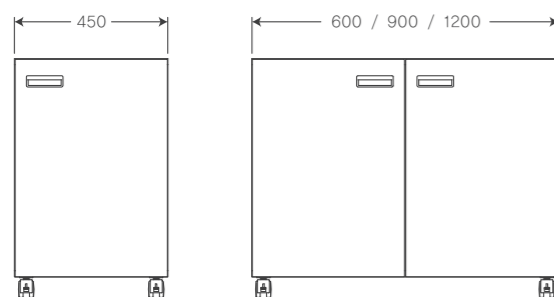
• H-MC

• Basic cabinet

Basic cabinet consists of E0 class P.B and L.P.M treatment, thus increasing the chemical resistance. It is an economical green panel.

• Type of movable cabinet

Cabinet is possible to choose an one side or both side doors cabinet according to the purpose of use.



| Model No. | Dimension (WxDxH)mm | Material |
|--------------|---------------------|----------|
| H-MC-(width) | 450x515x700 | PB |
| | 600x515x700 | |
| | 900x515x700 | |
| | 1200x515x700 | |

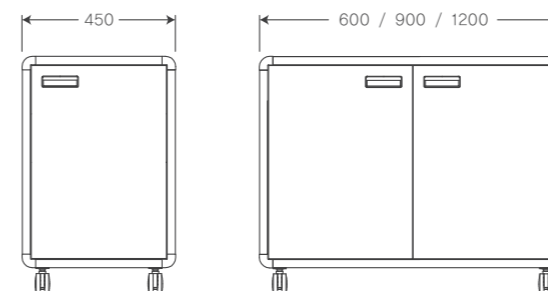
• H-MCR

• Aluminum frame

Aluminum frame has a resistance of discoloration and corrosion, provides safety for researchers.

• Type of movable cabinet

Cabinet is possible to choose an one side or both side doors cabinet according to the purpose of use.



Human Laboratory

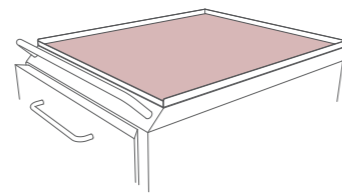
hulab® Movable Drawer & Cabinet

o Movable Drawer & Cabinet (Steel type)

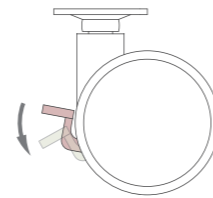
Ergonomic designed Hulab steel cabinet applies to 45-degree angled handles, possible to move a small force without physical excess. Non slip pad is a reagent bottle or experimental tools to prevent slipping.



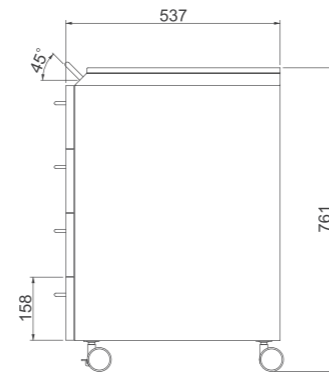
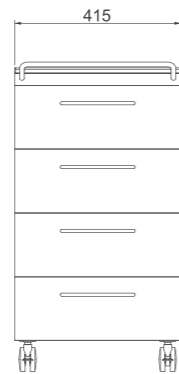
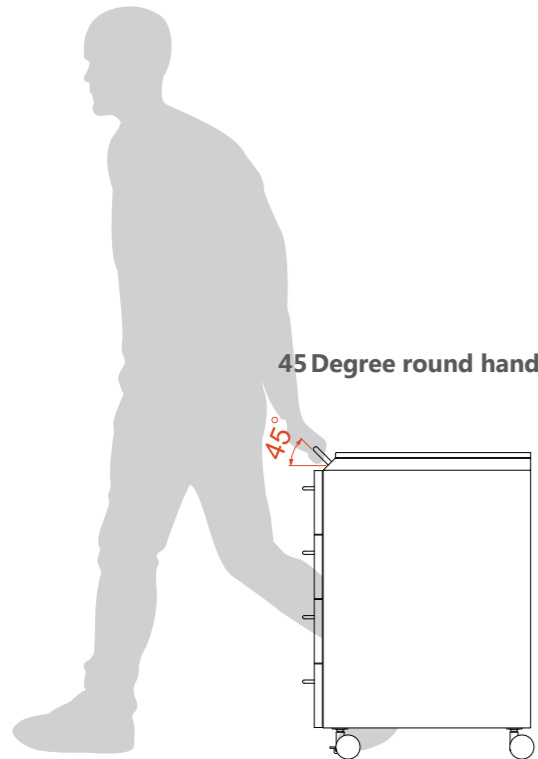
Non slip pad (option)



Caster (stopper type)



45Degree round handle



hulab® Classic



Human Laboratory
hulab® Classic Center Table (Shelf type)

CLF-1110

[Option]
 Worktop color : Black / White gray

[Basic installation]
 Receptacle / One-way water faucet / Mixing faucet
 Water guard / Pegboard



| Model No. | Dimension (WxDxH) mm |
|-------------|--------------------------|
| CLF-1110-08 | 2550 x 1500 x 800 / 2100 |
| CLF-1110-10 | 3150 x 1500 x 800 / 2100 |
| CLF-1110-12 | 3750 x 1500 x 800 / 2100 |
| CLF-1110-14 | 4350 x 1500 x 800 / 2100 |

CLF-1110F

[Option]
 Worktop color : Black / White gray

[Basic installation]
 Receptacle / One-way water faucet / Mixing faucet
 Water guard / Pegboard



| Model No. | Dimension (WxDxH) mm |
|--------------|--------------------------|
| CLF-1110F-08 | 2550 x 1500 x 800 / 2100 |
| CLF-1110F-10 | 3150 x 1500 x 800 / 2100 |
| CLF-1110F-12 | 3750 x 1500 x 800 / 2100 |
| CLF-1110F-14 | 4350 x 1500 x 800 / 2100 |

CLF-1120

[Option]
 Worktop color : Black / White gray

[Basic installation]
 Receptacle / One-way water faucet / Mixing faucet
 Water guard



| Model No. | Dimension (WxDxH) mm |
|-------------|--------------------------|
| CLF-1120-10 | 3000 x 1500 x 800 / 2100 |
| CLF-1120-12 | 3600 x 1500 x 800 / 2100 |
| CLF-1120-14 | 4200 x 1500 x 800 / 2100 |

CLF-1120F

[Option]
 Worktop color : Black / White gray

[Basic installation]
 Receptacle / One-way water faucet / Mixing faucet
 Water guard



| Model No. | Dimension (WxDxH) mm |
|--------------|--------------------------|
| CLF-1120F-10 | 3000 x 1500 x 800 / 2100 |
| CLF-1120F-12 | 3600 x 1500 x 800 / 2100 |
| CLF-1120F-14 | 4200 x 1500 x 800 / 2100 |

Human Laboratory
hulab® Classic Center Table

CLF-1130

[Option]
 Worktop color : Black / White gray

[Basic installation]
 Receptacle / One-way water faucet / Mixing faucet
 Water guard



| Model No. | Dimension (WxDxH) mm |
|-------------|----------------------|
| CLF-1130-08 | 2550 x 1500 x 800 |
| CLF-1130-10 | 3150 x 1500 x 800 |
| CLF-1130-12 | 3750 x 1500 x 800 |
| CLF-1130-14 | 4350 x 1500 x 800 |

CLF-1130F

[Option]
 Worktop color : Black / White gray

[Basic installation]
 Receptacle / One-way water faucet / Mixing faucet
 Water guard



| Model No. | Dimension (WxDxH) mm |
|--------------|----------------------|
| CLF-1130F-08 | 2550 x 1500 x 800 |
| CLF-1130F-10 | 3150 x 1500 x 800 |
| CLF-1130F-12 | 3750 x 1500 x 800 |
| CLF-1130F-14 | 4350 x 1500 x 800 |

CLF-1140

[Option]
 Worktop color : Black / White gray

[Basic installation]
 Receptacle



| Model No. | Dimension (WxDxH) mm |
|-------------|----------------------|
| CLF-1140-08 | 2400 x 1500 x 800 |
| CLF-1140-10 | 3000 x 1500 x 800 |
| CLF-1140-12 | 3600 x 1500 x 800 |
| CLF-1140-14 | 4200 x 1500 x 800 |

CLF-1140F

[Option]
 Worktop color : Black / White gray

[Basic installation]
 Receptacle



| Model No. | Dimension (WxDxH) mm |
|--------------|----------------------|
| CLF-1140F-08 | 2400 x 1500 x 800 |
| CLF-1140F-10 | 3000 x 1500 x 800 |
| CLF-1140F-12 | 3600 x 1500 x 800 |
| CLF-1140F-14 | 4200 x 1500 x 800 |

Human Laboratory hulab® Classic Center Table (Shelf type)

CLF-1150

[Option]
Worktop color : Black / White gray

[Basic installation]
Receptacle



CLF-1150F

[Option]
Worktop color : Black / White gray

[Basic installation]
Receptacle



| Model No. | Dimension (WxDxH) mm |
|-------------|--------------------------|
| CLF-1150-08 | 2400 x 1500x800 / 2100 |
| CLF-1150-10 | 3000 x 1500 x 800 / 2100 |
| CLF-1150-12 | 3600 x 1500 x 800 / 2100 |
| CLF-1150-14 | 4200 x 1500 x 800 / 2100 |

| Model No. | Dimension (WxDxH) mm |
|--------------|--------------------------|
| CLF-1150F-08 | 2400 x 1500 x 800 / 2100 |
| CLF-1150F-10 | 3000 x 1500 x 800 / 2100 |
| CLF-1150F-12 | 3600 x 1500 x 800 / 2100 |
| CLF-1150F-14 | 4200 x 1500 x 800 / 2100 |

Human Laboratory hulab® Classic Side Table (Mounted type)

CLF-1210

[Option]
Worktop color : Black / White gray

[Basic installation]
Receptacle



CLF-1210F

[Option]
Worktop color : Black / White gray

[Basic installation]
Receptacle



| Model No. | Dimension (WxDxH) mm |
|-------------|-------------------------|
| CLF-1210-04 | 1200 x 750 x 800 / 2100 |
| CLF-1210-05 | 1500 x 750 x 800 / 2100 |
| CLF-1210-06 | 1800 x 750 x 800 / 2100 |
| CLF-1210-07 | 2100 x 750 x 800 / 2100 |
| CLF-1210-08 | 2400 x 750 x 800 / 2100 |

| Model No. | Dimension (WxDxH) mm |
|--------------|-------------------------|
| CLF-1210F-04 | 1200 x 750 x 800 / 2100 |
| CLF-1210F-05 | 1500 x 750 x 800 / 2100 |
| CLF-1210F-06 | 1800 x 750 x 800 / 2100 |
| CLF-1210F-07 | 2100 x 750 x 800 / 2100 |
| CLF-1210F-08 | 2400 x 750 x 800 / 2100 |

Human Laboratory hulab® Classic Center Table

CLF-1160

[Option]
Worktop color : Black / White gray

[Basic installation]
Receptacle / One-way water faucet / Mixing faucet
Water guard



CLF-1160F

[Option]
Worktop color : Black / White gray

[Basic installation]
Receptacle / One-way water faucet / Mixing faucet
Water guard



| Model No. | Dimension (WxDxH) mm |
|-------------|----------------------|
| CLF-1160-10 | 3000 x 1500 x 800 |
| CLF-1160-12 | 3600 x 1500 x 800 |
| CLF-1160-14 | 4200 x 1500 x 800 |

| Model No. | Dimension (WxDxH) mm |
|--------------|----------------------|
| CLF-1160F-10 | 3000 x 1500 x 800 |
| CLF-1160F-12 | 3600 x 1500 x 800 |
| CLF-1160F-14 | 4200 x 1500 x 800 |

Human Laboratory hulab® Classic Side Table (Shelf type)

CLF-1220

[Option]
Worktop color : Black / White gray

[Basic installation]
Receptacle



CLF-1220F

[Option]
Worktop color : Black / White gray

[Basic installation]
Receptacle



| Model No. | Dimension (WxDxH) mm |
|-------------|-------------------------|
| CLF-1220-04 | 1200 x 750 x 800 / 2100 |
| CLF-1220-05 | 1500 x 750 x 800 / 2100 |
| CLF-1220-06 | 1800 x 750 x 800 / 2100 |
| CLF-1220-07 | 2100 x 750 x 800 / 2100 |
| CLF-1220-08 | 2400 x 750 x 800 / 2100 |

| Model No. | Dimension (WxDxH) mm |
|--------------|-------------------------|
| CLF-1220F-04 | 1200 x 750 x 800 / 2100 |
| CLF-1220F-05 | 1500 x 750 x 800 / 2100 |
| CLF-1220F-06 | 1800 x 750 x 800 / 2100 |
| CLF-1220F-07 | 2100 x 750 x 800 / 2100 |
| CLF-1220F-08 | 2400 x 750 x 800 / 2100 |

Human Laboratory hulab® Classic Side Table

CLF-1230S

[Option]

Worktop color : Black / White gray

[Basic installation]

Receptacle



| Model No. | Dimension (WxDxH) mm |
|--------------|----------------------|
| CLF-1230S-04 | 1200x750x800 |
| CLF-1230S-05 | 1500x750x800 |
| CLF-1230S-06 | 1800x750x800 |
| CLF-1230S-07 | 2100x750x800 |
| CLF-1230S-08 | 2400x750x800 |

CLF-1230

[Option]

Worktop color : Black / White gray

[Basic installation]

Receptacle



| Model No. | Dimension (WxDxH) mm |
|-------------|----------------------|
| CLF-1230-04 | 1200x750x800 |
| CLF-1230-05 | 1500x750x800 |
| CLF-1230-06 | 1800x750x800 |
| CLF-1230-07 | 2100x750x800 |
| CLF-1230-08 | 2400x750x800 |

CLF-1230F

[Option]

Worktop color : Black / White gray

[Basic installation]

Receptacle



| Model No. | Dimension (WxDxH) mm |
|--------------|----------------------|
| CLF-1230F-04 | 1200 x 750 x 800 |
| CLF-1230F-05 | 1500 x 750 x 800 |
| CLF-1230F-06 | 1800 x 750 x 800 |
| CLF-1230F-07 | 2100 x 750 x 800 |
| CLF-1230F-08 | 2400 x 750 x 800 |

Human Laboratory hulab® Classic Function Table

Corner table CLF-1240

[Option]

Worktop color : Black / White gray



| Model No. | Dimension (WxDxH) mm |
|-----------|----------------------|
| CLF-1240 | 1000 x 1000 x 800 |

Side sink table CLF-1601

[Option]

Worktop color : Black / White gray

[Basic installation]

Receptacle / One-way water faucet / Mixing faucet

Water guard



| Model No. | Dimension (WxDxH) mm |
|-------------|----------------------|
| CLF-1601-02 | 600 x 750 x 800 |
| CLF-1601-03 | 900 x 750 x 800 |
| CLF-1601-04 | 1200 x 750 x 800 |
| CLF-1601-05 | 1500 x 750 x 800 |

Balance table CLF-1901

[Option]

Worktop color : Black / White gray

[Basic installation]

Receptacle / Marble stone



| Model No. | Dimension (WxDxH) mm |
|-------------|------------------------|
| CLF-1901-03 | 900 x 750 x 750 (800) |
| CLF-1901-04 | 1200 x 750 x 750 (800) |

Human Laboratory
COZY PRO® Education Table

CFS-301

[Option]
Worktop color : Black / White gray

[Basic installation]
One-way water faucet / Mixing faucet



| Model No. | Dimension (WxDxH) mm |
|-----------|----------------------|
| CFS-301 | 2700 x 900 x 800 |

CFS-302

[Option]
Worktop color : Black / White gray



| Model No. | Dimension (WxDxH) mm |
|-----------|----------------------|
| CFS-302 | 2100 x 900 x 800 |

Human Laboratory
COZY PRO® Education Table

CFS-303 / CFS-305

[Option]
Worktop color : Black / White gray



| Model No. | Dimension (WxDxH) mm |
|-----------|----------------------|
| CFS-303 | 1200 x 500 x 800 |
| CFS-305 | 1800 x 500 x 800 |

CFS-307 / CFS-309

[Option]
Worktop color : Black / White gray



| Model No. | Dimension (WxDxH) mm |
|-----------|----------------------|
| CFS-307 | 1800 x 1000 x 800 |
| CFS-309 | 1200 x 1000 x 800 |

CFS-306

[Option]
Worktop color : Black / White gray

[Basic installation]
One-way water faucet / Mixing faucet



| Model No. | Dimension (WxDxH) mm |
|-----------|----------------------|
| CFS-306 | 2400 x 1000 x 800 |

CFS-308

[Option]
Worktop color : Black / White gray

[Basic installation]
One-way water faucet / Mixing faucet



| Model No. | Dimension (WxDxH) mm |
|-----------|----------------------|
| CFS-308 | 3000 x 1000 x 800 |

CFS-316

[Option]
Worktop color : Black / White gray



| Model No. | Dimension (WxDxH) mm |
|-----------|----------------------|
| CFS-316 | 1800 x 900 x 800 |

Lab design & Consulting

CHC LAB suggests the healthy and pleasant research environment taking the balance of customer's convenience and safety regulation as well as the individual characteristics of actual research work into consideration.



Pleasant and efficient laboratory system

Working process



Laboratory layout design & 3D rendering



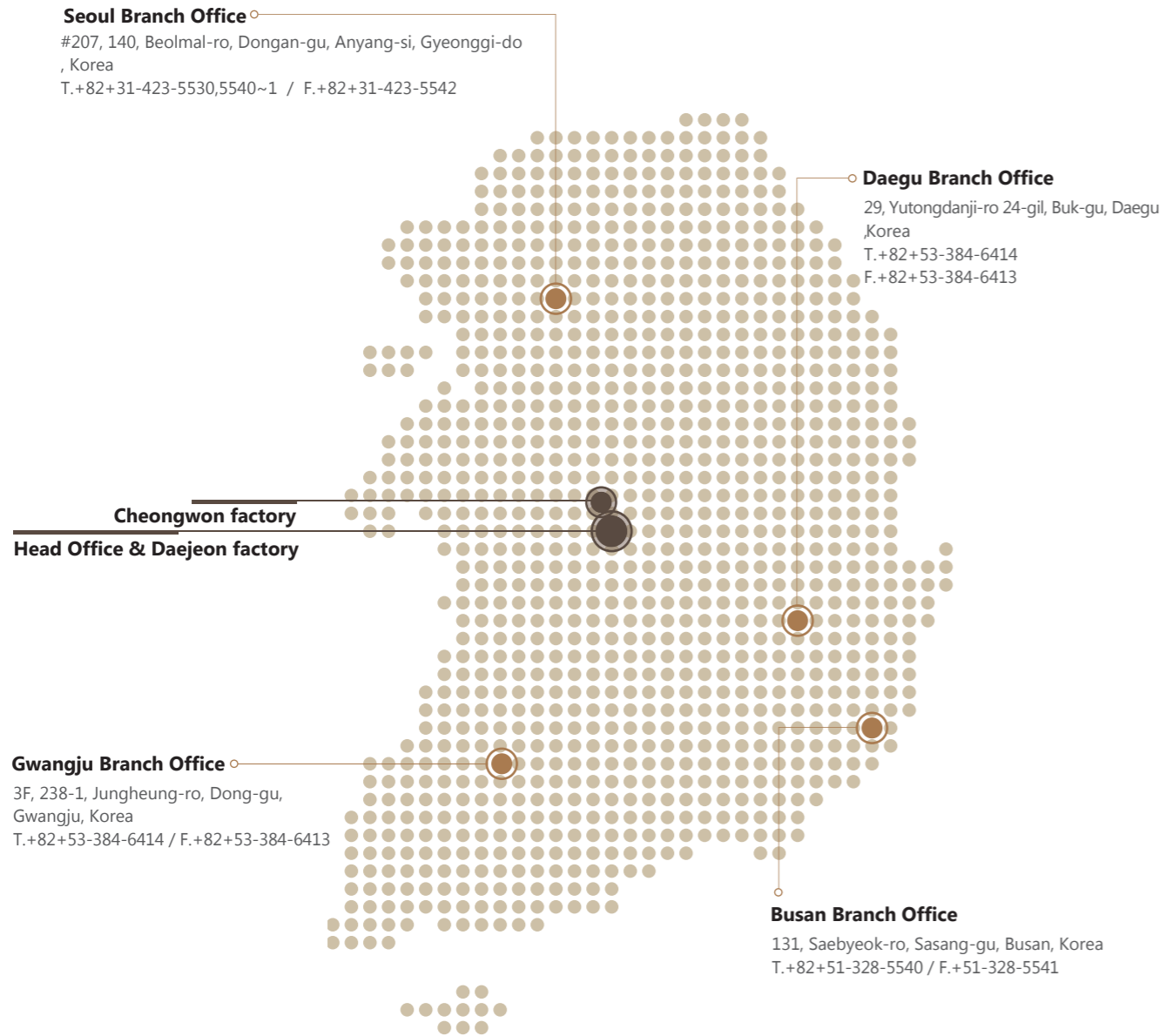
Floor plan

Front view

Side view

Perspective view

Domestic business channels



Exporting countries



Head Office & factory



139, Techno 2-ro, Yuseong-gu, Daejeon, Korea
T.+82+42-933-0036 / F. +82+42-933-0039

Production products

- Fume Hood
- Storage Cabinet
- Clean Bench
- BSC
- Filter Box
- Ductless Fume Hood

Cheongwon factory



336-8, Biryong-ri, Nami-myeon, Cheongwon-gun, Chungbuk, Korea
T.+82+43-277-8475 / F. +82+43-277-8476

Production products

- Lab Table
- Cabinet
- Printing, Cutting, Welding

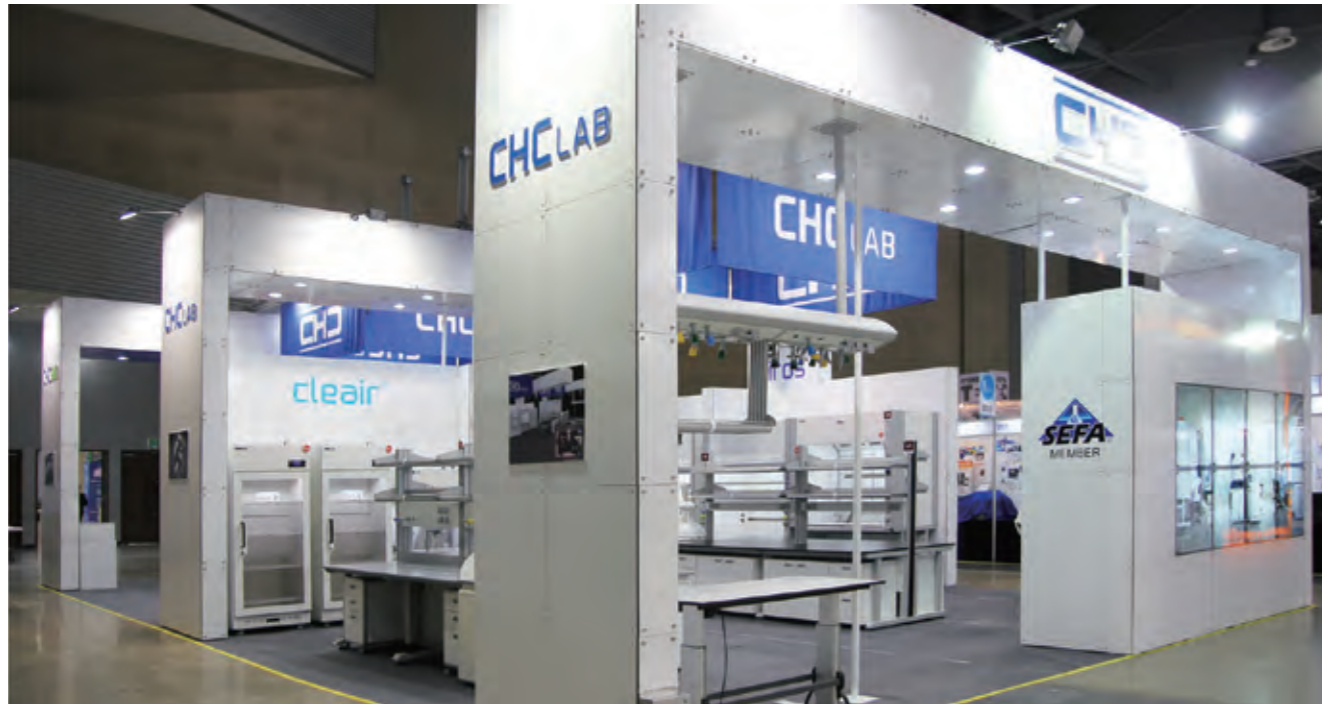
- Mexico
- Switzerland
- Japan
- Australia
- Peru
- Vietnam
- Malaysia
- Singapore
- Turkey
- United Arab Emirates
- Ethiopia
- Kuwait
- Thailand
- India
- Sri Lanka
- Czech
- Saudi Arabia
- Colombia
- Chile
- Venezuela

Global marketing

Participation in exhibitions

CHC LAB Co., Ltd. has been participating in various overseas exhibitions for many years and has obtained world-class qualities and technologies. So, the performances and designs of our products are now widely recognized by many buyers at home and abroad.

o 2013 KOREA LAB (South Korea)



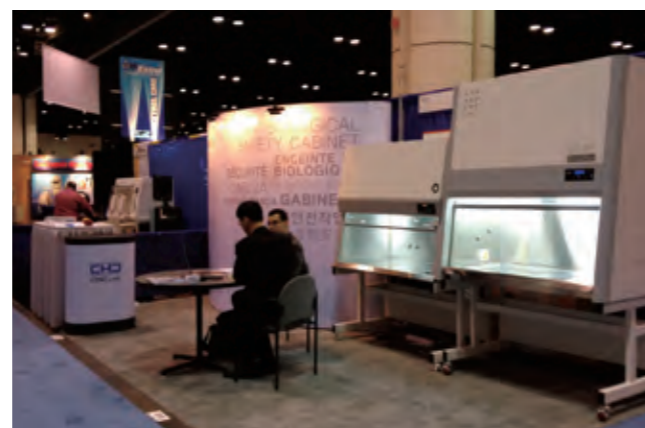
o 2013 ARAB LAB (Dubai)



o 2012 ACHEMA (Germany)



o 2012 PITTCON (America)



Operation of showroom

CHC LAB Co., Ltd. operates its own 330-sqm showroom, the first of its kind in the industry in order to help buyers visiting at home and abroad and front-line business partners to understand not only products but also how to install and operate new products.

o Lab furniture



o Fume hood



o Bio equipment



Business performance

Installation

We have been supplying the lab furniture, fume hood and laboratory equipment to various laboratories such as government-invested organizations, education, pharmacy, medical, chemistry, cosmetics, bio-engineering, and food area etc., based on the accumulated technology power to perform the whole process of laboratory layout, design, production, installation and validation.

Chemicals



Cosmetics



Research institution



Hospital



GLP laboratory



Pharmaceutical factory



Hospital



Micro-biological institution



Research institution



Hospital



Electronics industry



School



University



Food-engineering



Household & Health Care



Chemicals



