erlab
You can breathe.

Captair 321 Midcap

Ductless filtering fume hoods

Instructions & User's Manual



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General

By choosing Captair Smart ductless filtration fume hoods, you have chosen an efficient and responsible way to ensure safety.

Erlab's 50 years of expertise in the field of laboratory fume hoods provide unparalleled filtration quality to ensure your users are properly protected when handling chemicals in the laboratory. The new Captair Smart range uses an innovative and straightforward mode of communication called Smart technology. This powerful interface uses light to intuitively and effortlessly communicate with users and leave them free to focus all their attention on the main task: **handling the chemicals.**

Your ductless Captair Smart filtration fume hood guarantees that you are protected when working with chemicals that pose an inhalation risk. The Erlab filtration technology it employs traps hazardous particles and molecules and returns clean air back into the laboratory.

The system's connectivity allows for real-time safety alerts and individual device usage reports to be sent via the eGuard.

Safety notices

The effectiveness of your device is directly dependent upon it being used correctly and monitored by its users. Your laboratory may also benefit from ergonomic, economic and ecological advantages provided by the Captair Smart fume hood throughout its life cycle.

The E.S.P. program (Erlab Safety Program) was set up to guarantee your safety. We would remind you that it is important to have the safety parameters validated before using the device for the first time and whenever it is used for a different application.

The handling of substances that are carcinogenic, mutagenic or toxic for reproduction (CMRs) underneath a fume hood is covered by the French Labour Code. The code notably specifies that an in-depth risk analysis must be carried out prior to any CMRs being handled under a recirculating fume hood.

The equipment provided is not intended to be used in an explosive atmosphere.

The filters delivered with this device must be removed from their packaging and positioned correctly; they must also be suitable for the type of chemicals being handled in order to guarantee user safety.

Erlab recommends that filter breakthrough tests are regularly carried out.

Erlab recommends that the electronic anemometer is calibrated at least once a year.

The quantities of the chemicals handled in the enclosure should not be greater than those listed in the guide to approved chemicals (the Chemical Listing).

The filtration performance of the Erlab Midcap units complies with the AFNOR NF X 15-211: 2009 standard, which only applies to chemical agents subject to VELP. The fume hood filter must be replaced as soon as the presence of a chemical is detected downstream of the filter.

New filters must be stored in their packaging, kept in a dry location and laid flat. (see recommendations for storing and using the filters).

Erlab recommends keeping a logbook which is specific to the device and shows the chemical agents handled, how often they are used and the maintenance operations carried out on it.

Warranty



Product registration

Take full advantage of the device's connectivity to enhance your safety

Get up to 10 years warranty on your connected Erlab unit

Register your product online: the registration of the product will automatically give you one extra year of warranty (in addition to the warranty mentioned in the Erlab' general terms and conditions of sale).
https://www.erlab.com/form/90/1266/register-your-product.html

Register your product online: the registration of the product will automatically give you one extra year of warranty (in addition to the warranty mentioned in the Erlab' general terms and conditions of sale).

Connect your unit: Once the device is connected to the Internet and configured to exchange usage data, the warranty is extended for up to 10 years. Warranty will be successively renewed at each filters replacement and for the life time indicated on the Valipass® and/or or at the end of filter usage time.

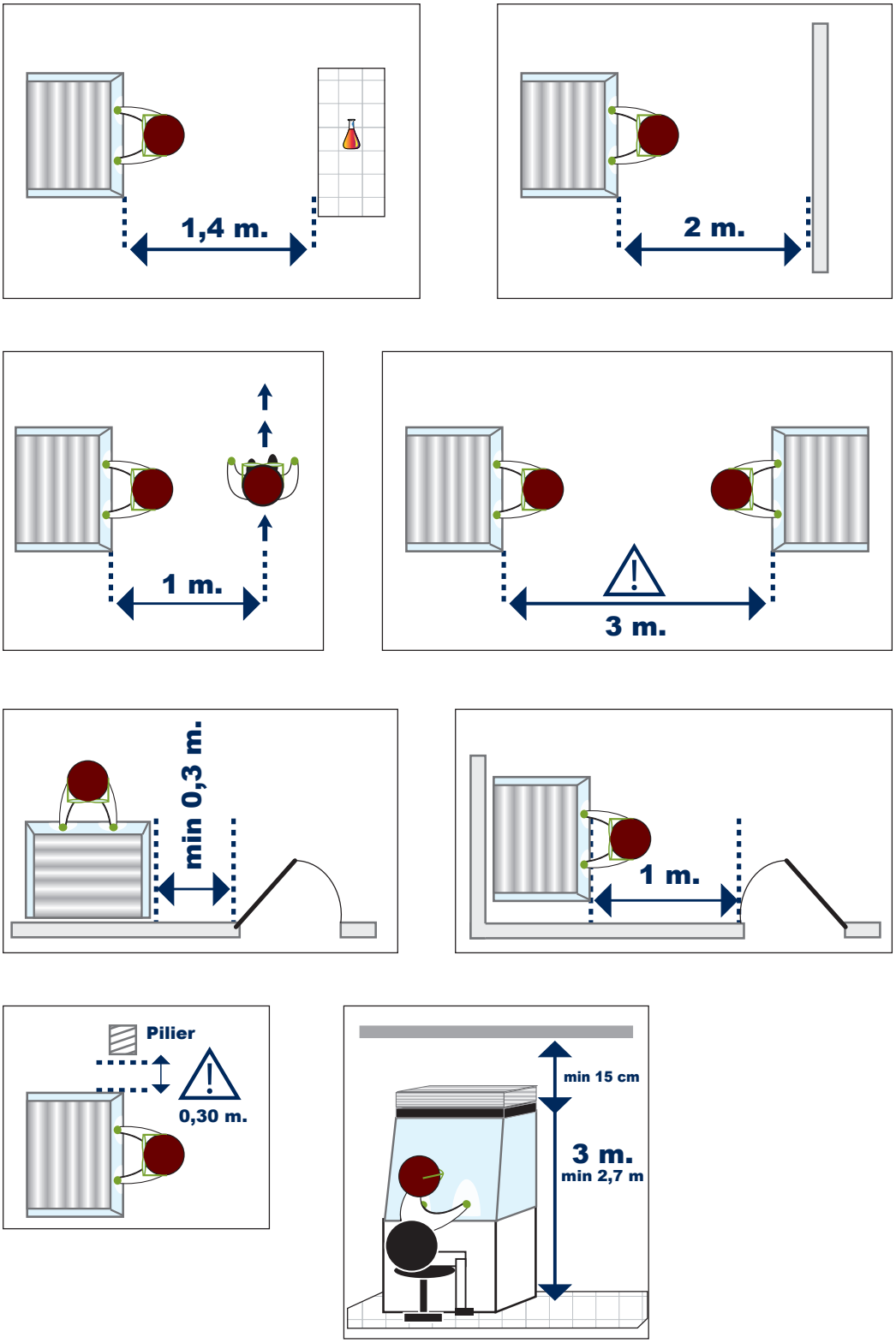
In order to benefit from Erlab extension of warranty offer, the following conditions shall be respected:

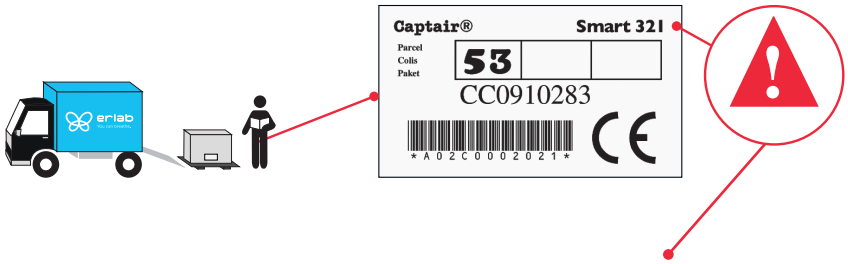
- The registration and/or the connection of the product shall be performed within the twelve months from the purchase date ;
- Filters replacement must be performed following eValiQuest® service recommendations or at the end of filter usage time ; The filter's serial number, used as an identification key, validates this condition, regardless of your device's supplier (and/or the replacement filter's supplier for the following years);
- The device's replacement filters must be manufactured by Erlab, as must all other spare parts.

Consumables such as filters and filter failure sensors are not covered by the warranty.

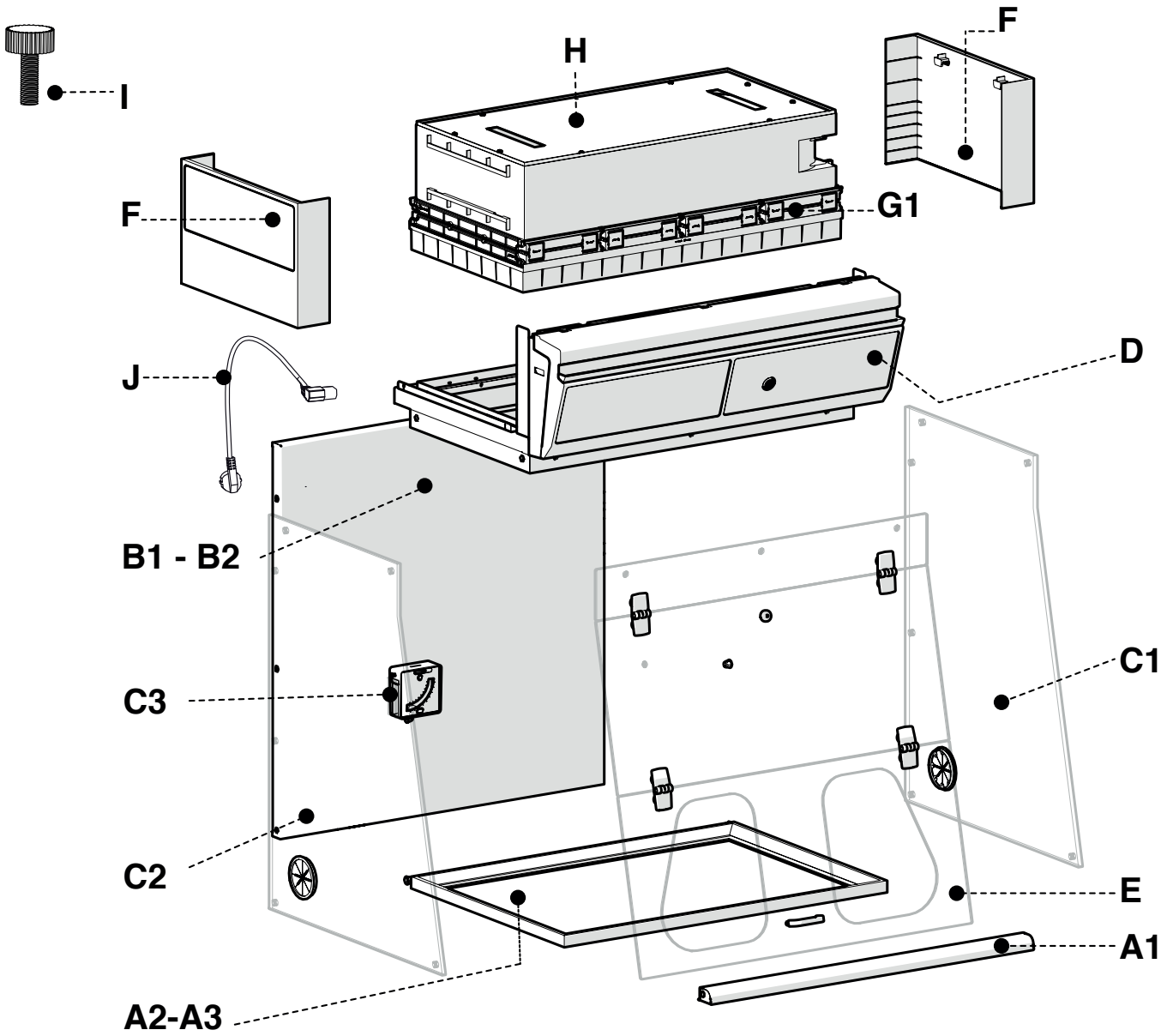
Recommendation for implementation/positioning

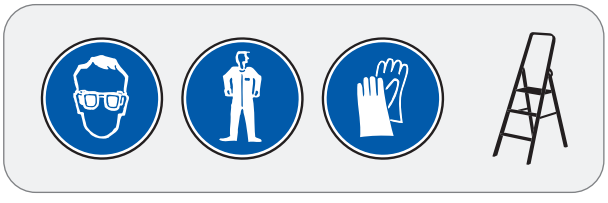
Necessary space and dimensions - according to the EN 14175-5 standard

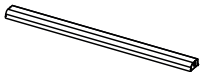
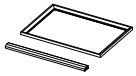
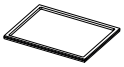
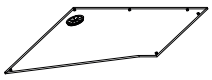
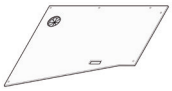
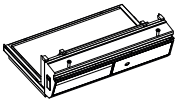
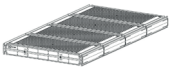
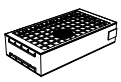
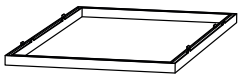
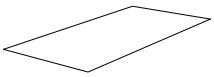




Example : Midcap 321 - 1C - Options A2





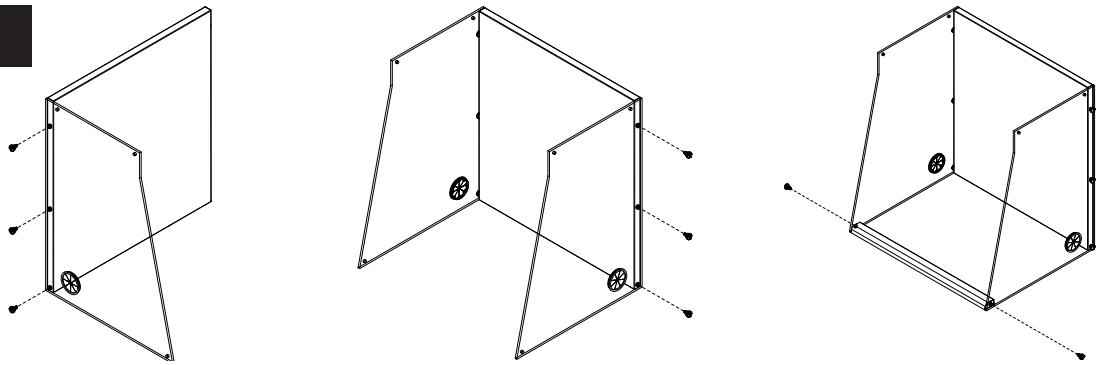
A1	Spacing Bar		x1	PIDREA603016
A2	Work surface with sealed tempered glass retention tray		x1	IO160030001
A3	Resin work surface		x1	IO115030002
B1	Back panel		x1	PIDREA603007
B2	Transparent back panel		x1	IO360100001
C1	Side panel		x1	PIDVI03002
C2	Side panel anemometer		X1	PIDVI03004
C3	Anemometer+screws		X1	Z7PID772
D	Acrylic front panel		x1	(1): Z3CEILINGMIDCAP (2) = Z3MCMIDCAP1 (1+2): K82XXX
E	Side cover		x1	PIDVISMART321
F	Carbon filter		x2	PIDM58552
G1	HEPA H14 - ULPA U17 Filter		*	H11074101 (AS) H11074201 (BE+) H11074401 (F) H11074301 (K)
G2	Hook HEPA-ULPA Filter		*	H11074031 (HEPA H14) H11074061 (ULPA U16)
H	Fan box + grid			Z3FM005 + PIDM58522M
I	Nylon screws		x15	PIDB08547
J	Power cable + 2 clamps		x1	EU = PIDEL076 USA = PIDEL080 GB = PIDEL090 CH = PIDEL106
L	HEPA filter seal frame		x1	PIDMS8532
P	Pre-filter		x1	I1015000001

Standard
Options

1

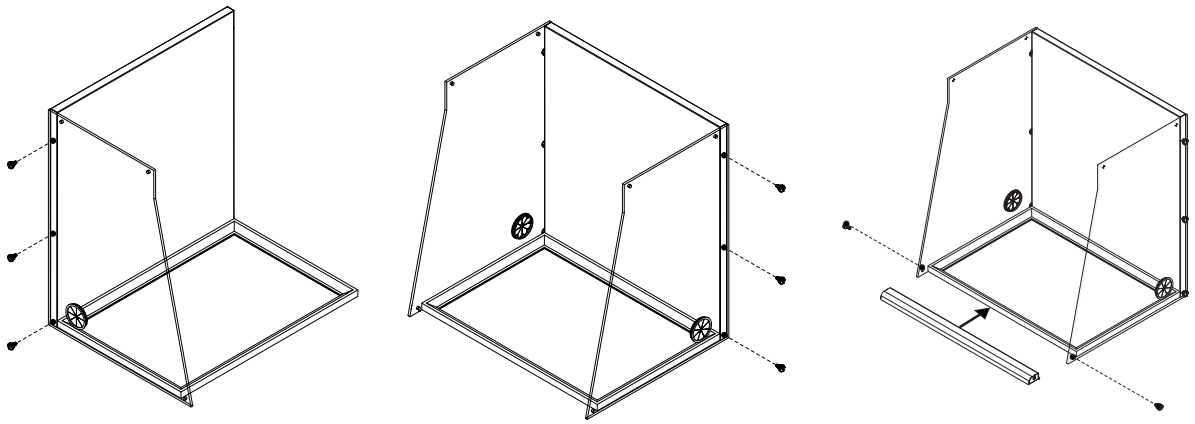
A1	x1
B1 B2	x1
C1	x1
C2	x1
I	x8

A1



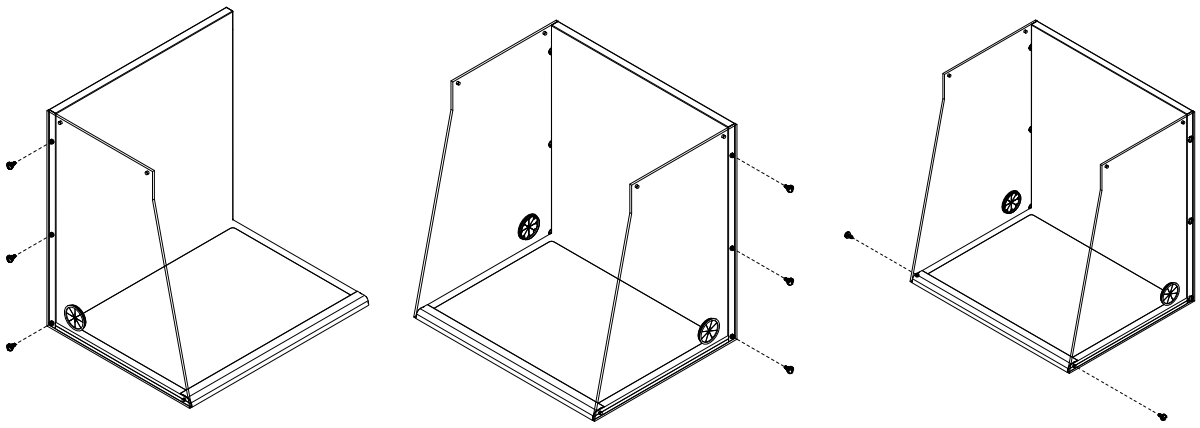
A2	x1
B1 B2	x1
C1	x1
C2	x1
I	x8

A2



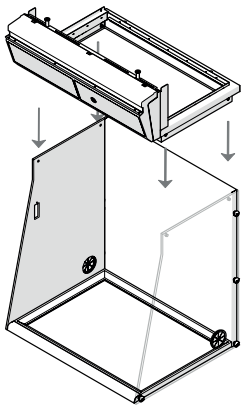
A3	x1
B1 B2	x1
C1	x1
C2	x1
I	x8

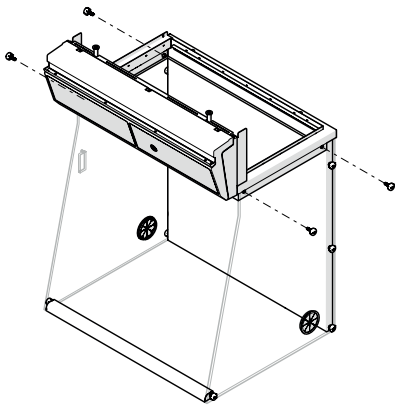
A3



2

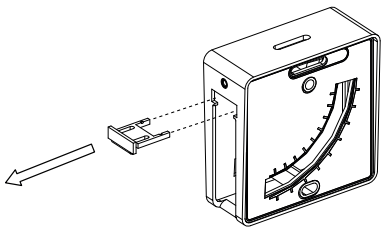
D	x1
I	x4

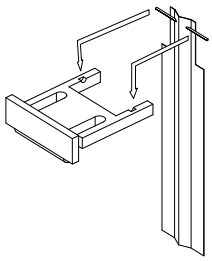


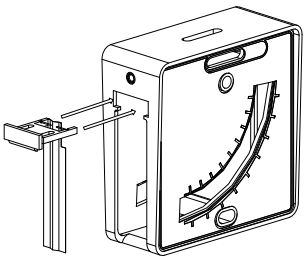


3

C3	x1

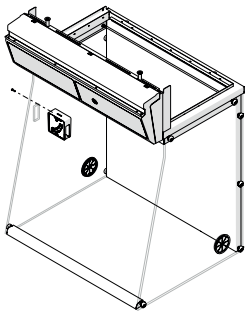






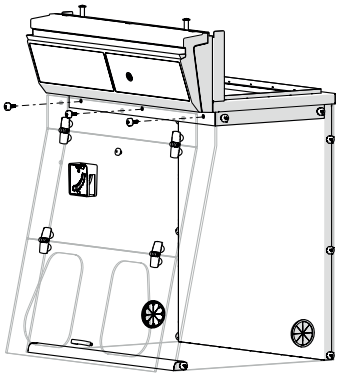
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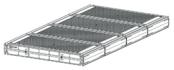
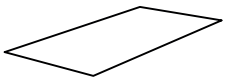
C3	x1



5

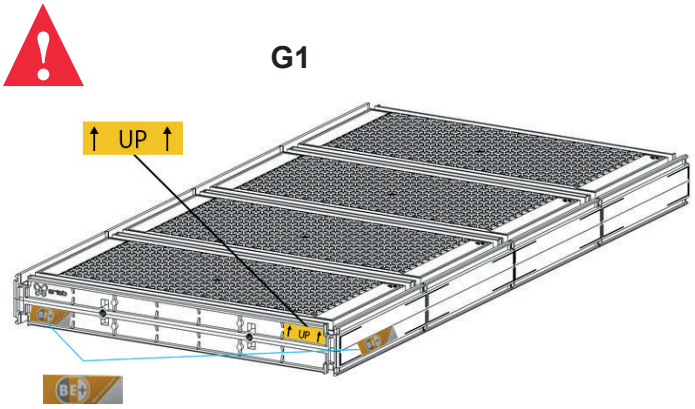
E	x1
I	x3

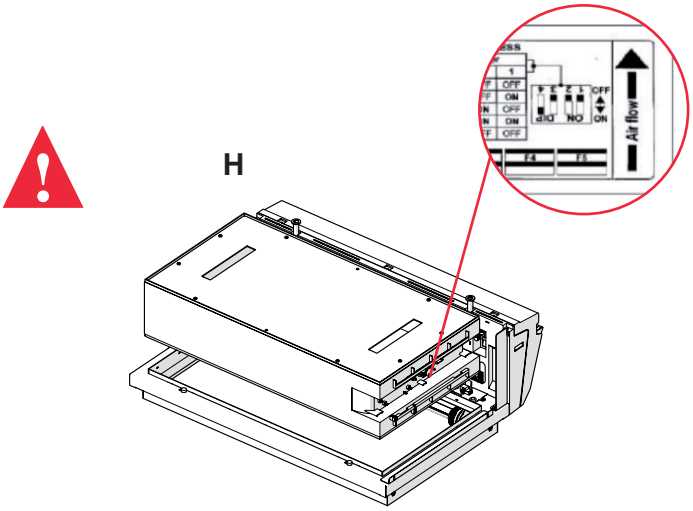


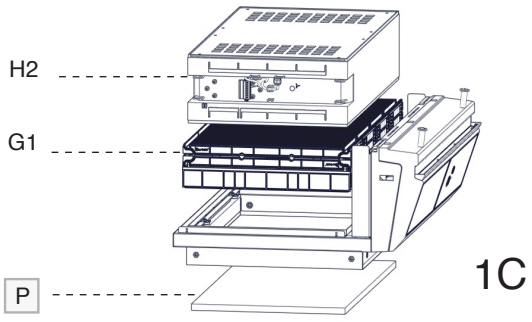
6	G1	Molecular filter	G2	HEPA filter H14 / ULPA	P	Pre-filter
Column Configuration						
1C	x1				x1	
1 P			x1		x1	

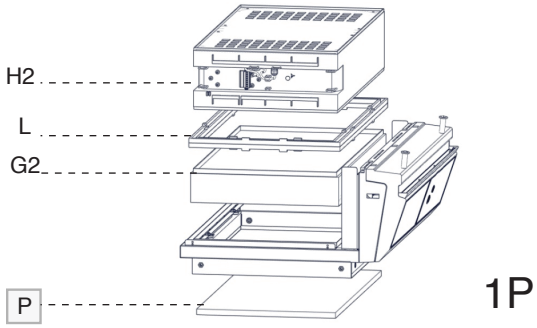
Standard

Options

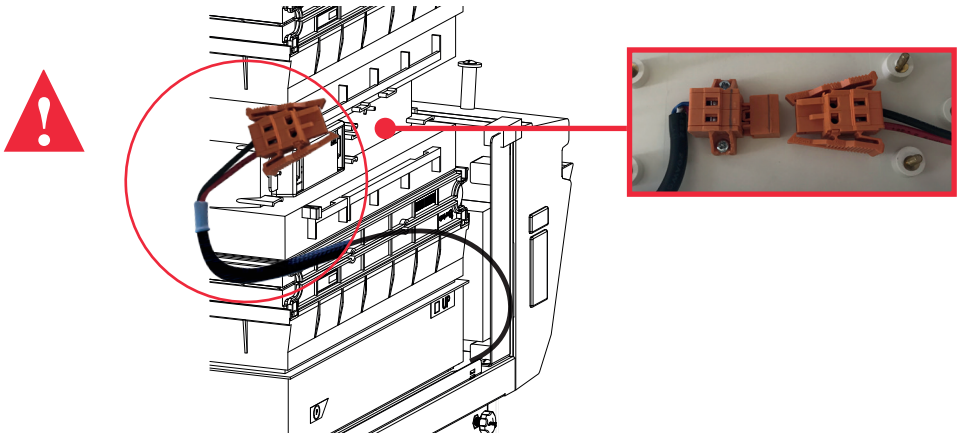






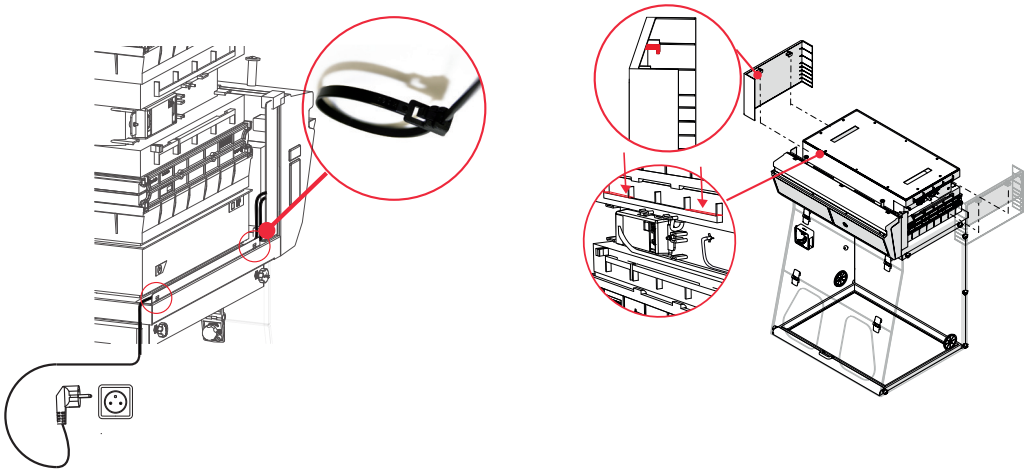


7

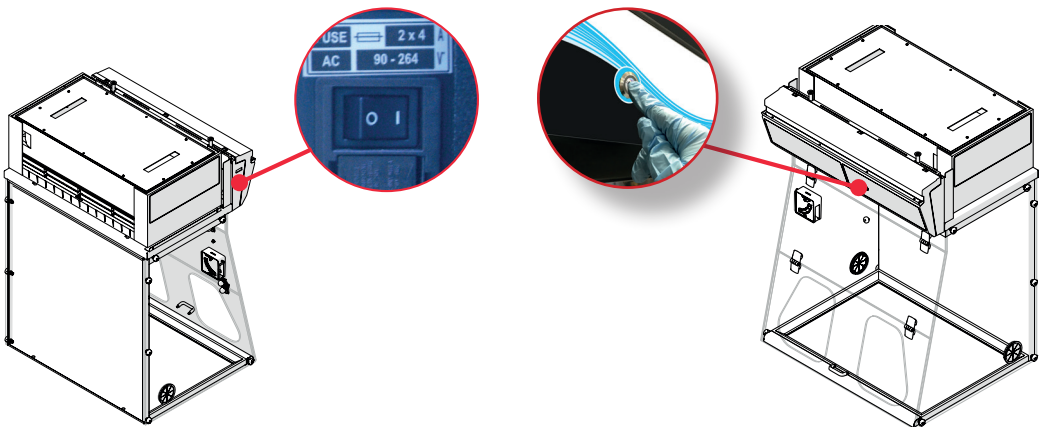


8

J	x1
F	x2



9



First Start-Up

Turn on the device using the switch located on the left side of the control panel.



we recommend never turning off the main device power switch after the machine as been started for the first time.

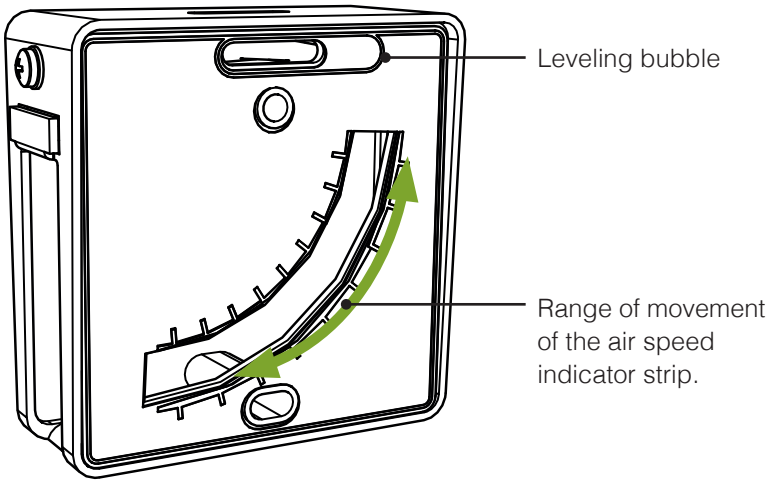
Activate the device's ventilation system using the ventilation button



Switch on fan

Monitoring air face velocity

The anemometer provided with your Captair Midcap fume hood allows the user to constantly monitor the face velocity.
If the anemometer is not installed during assembly, please install this device according to the steps listed in the installation instructions provided with your fume hood.



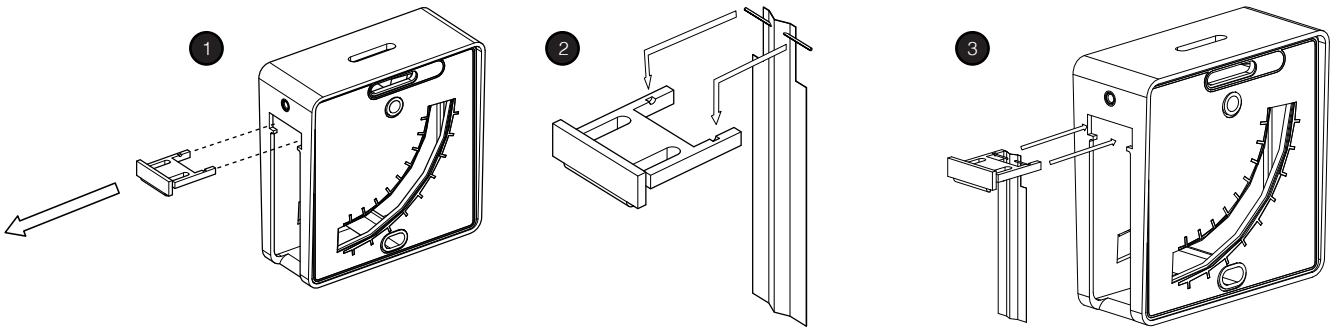


When reading the face velocity, first be sure to check that the leveling bubble on the anemometer is positioned correctly. To ensure proper movement of the strip, the anemometer must be level. The air face velocity must be between 0.4 and 0.6 m/s (as required by AFNOR NF X 15-211: 2009 standard).

QWhat should you do if the strip does not move or if its movement is irregular?

- First of all, verify that the fume hood's ventilation system is turned on.

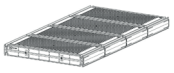
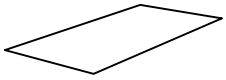
- If the strip's movement is highly irregular, verify that the strip is correctly positioned in the housing located within the anemometer as shown in the diagrams below. The two pins of the strip must be correctly positioned in the support slots.



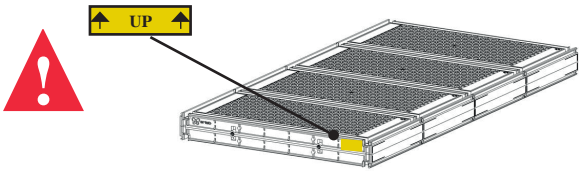
Replacing the filters

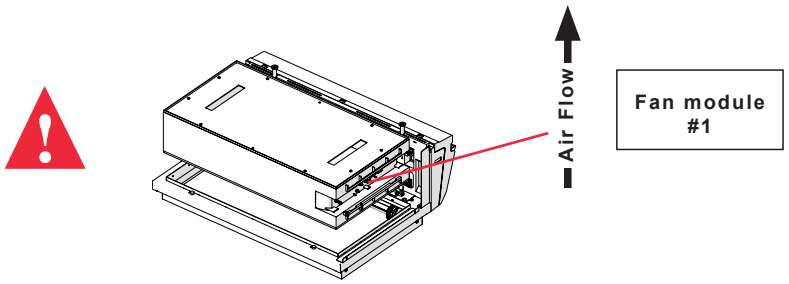
Your device is equipped with FLEX™ filter technology that was configured to the user's protection needs when the device was purchased. The configuration of the filter column is dependent on the applications carried out in the enclosure. These applications may change over time. Your FLEX™ filter technology can therefore be reconfigured if your fume hood is used for applications other than those anticipated when the device is first set up. If so, please contact us so that we can verify that the current configuration is safe or it needs to be configured.

The table below summarises all possible Flex™ filter technology configurations for your device

	Captair Midcap 321		
	Molecular filter	**HEPA filter H14 / ULPA**	**Pre-filter**
Column Configuration			
1C	x1		x1
1 P		x1	x1

Standard **Options**





The table below summarises the different types of carbon filters that Erlab® offers along with their fields of application.

Type AS	For organic vapors
Type BE +	Multi-application for acid and organic vapors
Type K	For ammonia vapors
Type F	For formaldehyde vapors
HEPA H14	For powders
ULPA	For powders

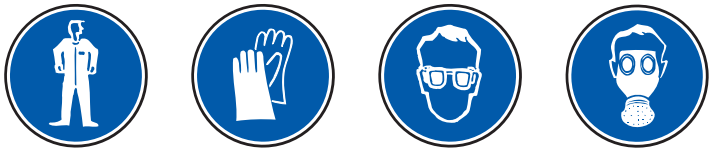
Replacing the HEPA H14 / ULPA filters

Pre-requisites

- The operative responsible for replacing the filter is kept up-to-date with the exhaustive list of products handled in the fume hood by the user so that the correct EPI can be used
- The laboratory is empty when the operation is carried out
- The laboratory is ventilated by mechanical or natural means while the operation is carried out

Minimum protective equipment

- One-piece overall + overshoes + bouffant cap
- Laboratory gloves (latex or nitrile)
- Protective glasses
- Breathing mask with particle filter (P3)



Notice: additional equipment could be required.

This procedure is applicable to HEPA/ULPA filters located at the bottom of the filtration columns and designed to trap powders handled inside the device enclosure.

<u>Strict chronological order to follow:</u>

1- Switch on the device fan
2- Carefully spray the bottom surface of the HEPA/ULPA filter
(paint with NON FLAMMABLE propellent), to be done inside the enclosure
3- Allow at least 5 minutes with the fan running for the spray to dry
4- Shut down and unplug the device and disconnect the fan module power supply cable and the sampling tubes from the sampling area (if installed)
5- Carefully remove the molecular filter(s) (if present) and the fan module
6- Carefully unwrap the new HEPA/ULPA filter
Keep the plastic film and cardboard box so that you can use it later to pack up the used filter
Lay out the film on a flat surface in the immediate vicinity of the operation so that it is at the ready
7- Carefully remove the used HEPA/ULPA filter and immediately place it contaminated-side down onto the plastic film
8- Clean the filter housing and the enclosure (using water + surfactant)
9- Package up the used filter + contaminated equipment
Seal the plastic film tightly
10- Place the sealed package in the box the new carbon filter came in, then seal it using adhesive tape, clearly write «used filter» on the packaging.

Have the filter disposed of via a suitable disposal process in accordance with the applicable regulations.
To find out more, please contact your usual advisor.

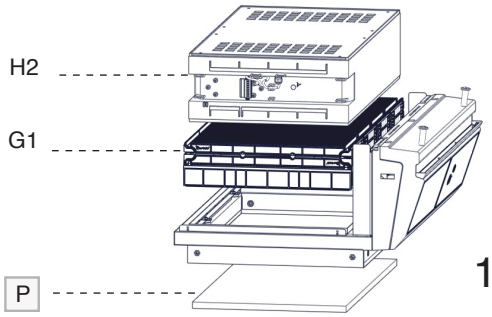
11- Fit the new HEPA/ULPA filter, main molecular filter (if present) and the fan module, followed by the backup molecular filter (if present). Make sure that all the column components
12- Reconnect the device's various cables and hoses, switc h the device back on and check the air speed using the anemometer calibration procedure via the administrator interface

1. Identify wich column configuration below applies to your hood. (See your Valipass label)

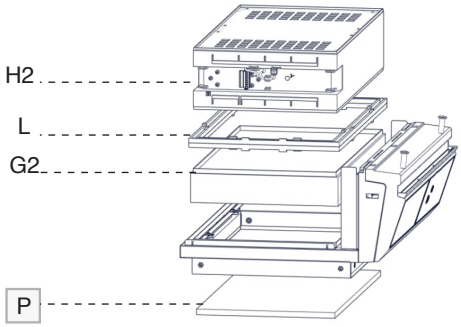
2. Unstack the filtration column(s) above the fume hood.

3. After carrefuly removing the filters from their packaging, assemble the column per the configuration below.

4. If your column configuration changed, Apply the correct fan setpoint for the filtration column configuration (see fan setpoints)

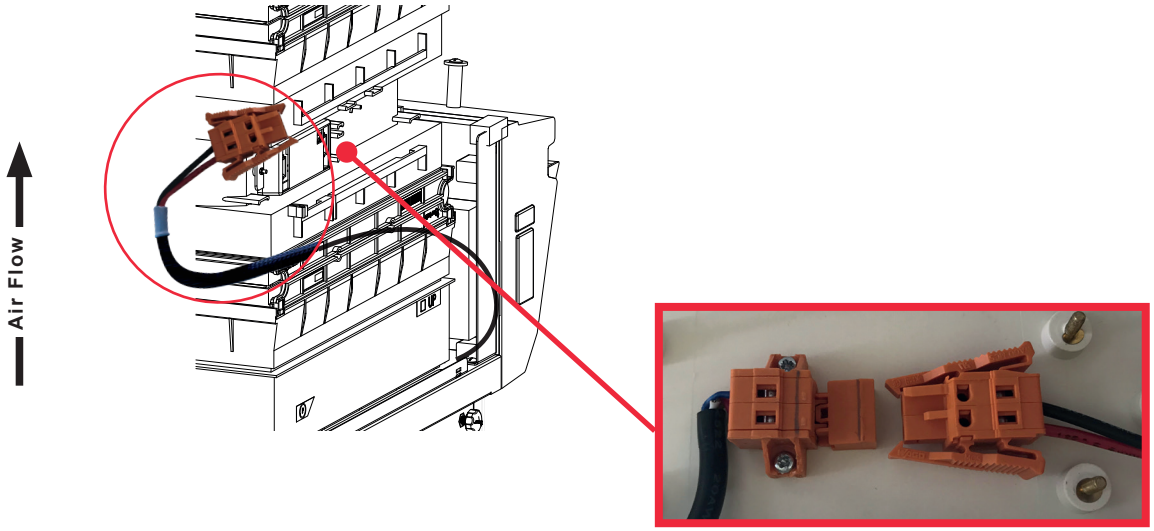


1C



1P

When reassembling the filtration column, be sure that the fan module is positioned correctly to access your connection points.



Recommendations for the use of filters

We recommend replacing the filter annually (if used 24/7).

ERLAB offers 3-point validation of your handling operations based on a scientific analysis carried out by its laboratory specialists via the global **Erlab Safety Program (E.S.P)** which includes the **eValiQuest** questionnaire:

- Feasibility of handling operations under a recirculating fume hood
- Type(s) of filter(s) to use and filtration column configuration
- Predicted service life of the activated carbon molecular filters

How does the E.S.P service work?

- The customer completes the eValiQuest questionnaire and sends it by email to Erlab
- The Erlab laboratory specialists analyze the questionnaire and issue a Valipass certificate

The Valipass certificate is affixed to the new devices at the factory. If the chemical processes in the hood change, a new eValiQuest is completed and is sent by email after revalidation.

The certificate contains the following: a list of the products handled in the fume hood, the type of filter required for these chemicals, the serial number, the life of the filter, the traceability information used to track the use of the device and the methods of detecting filter failure of the molecular filter.

The activated carbon molecular filter(s) must be replaced when the period in months specified on the Valipass certificate expires

To ensure their safety, we invite users who have not had their application validated via the eValiQuest questionnaire or whose device is not covered by a Valipass usage certificate, to contact ERLAB or their usual distributor to arrange a new usage validation for the device in question.

Failing that and/or in the absence of information regarding device usage:
ERLAB is unable to provide any guidance as to the predicted service life of the filter(s).

In such cases, we strongly recommend:

- **Replacement of molecular filters at least every 12 months and implementation of a regular filter fault monitoring protocol. (Please contact us for personal advice on this matter)**
- **That the HEPA or ULPA particulate filters are replaced at least every 36 months**

Admissible weighs on working surfaces

	Tempered glass work top		Trespa® Top Lab^{PLUS} work top	
	50 kg/m^2	1187 lb/ft^2	110 kg/m^2	2610 lb/ft^2
Captair Midcap 321	**15 kg**	**33 lbs**	**35 kg**	**77 lbs**

Cleaning and maintenance

Mechanical item checks

Hinges:
Hinges must be properly attached and must allow any items on the front side of the hood to be instantly and easily lifted upward.

Acrylic Parts:
These parts must be clean; white streaks or spatters indicate rather heavy use of acid (hydrochloric acid) or products handled at a high temperature. Ensuring the transparency of the walls is a part of regular maintenance for the enclosure.

Cleaning the enclosure

The enclosure must be cleaned on a regular basis.

This may be accomplished in several ways:

- With soapy water followed by rinsing with clear water and drying with a soft, non-abrasive absorbent paper towel.
- Or with a commercial pH neutral neutralizing product followed by drying with a soft, non-abrasive, absorbent paper towel.

Coated Metal Parts:

- These must be inspected and free from any traces of corrosion.
- Check that there is no stagnant water in the spill tray.
- Clean the spill tray if necessary.



The Erlab Research and Development laboratory

About Erlab

Since 1968, **Erlab** has been a specialist, inventor and world leader in **ductless, zero-emission filtering fume hoods for laboratories** to provide total safety in chemical handling.

1 Erlab filtration

We provide technologies to protect laboratory staff from inhaling chemicals. This is made possible thanks to our **Research and Development (R&D) department,** which has continuously improved our filtration technology **for more than 50 years.** That's why, in 2009, we invented the **ERLAB ABOVE** label for tried and tested filtration technology.

2 The AFNOR NF X 15-211: 2009 standard

Erlab's filtration technology conforms to the **NF X 15-211: 2009 standard,** the industry's most demanding standard for molecular filtration, developed by a committee of independent scientists and specialized manufacturers.

This text imposes performance criteria linked to:

- Filtration efficiency
- Containment efficiency
- Air face velocity
- Documentation: chemical listing

3 The ESP programme

A set of three services included with the purchase of each device designed to ensure your safety.

eValiQuest Risk analysis – Determination of protection needs – Determination of ergonomic needs.

ValiPass Certified installation – Total safety for handling.

ValiGuard Ongoing monitoring – Preventative and maintenance inspections – Device reconfiguration based on protection needs – Development of handling.

4 Flex technology

The combination of molecular and particulate filtration technologies allows a single device to meet laboratories' protection needs. This innovation from Erlab's R&D department offers unprecedented **flexibility, versatility and value.** A single device can be reconfigured over time and easily reassigned to other applications.

5 Smart technology

Smart technology is a **simple and innovative** means of communication that improves safety. This technology uses a light and sound signal to indicate the user's level of protection. The advantages of the technology are:

1/ Light pulsation: Real-time communication via LED light pulses intuitively alerts the user to the device's operating status.

2/ Simplicity: One-touch activation.

3/ Detection system: The exclusive detection system continuously monitors filtration performance.

4/ Built-in monitoring: This service provides direct access to the **status, settings and history** of your device.

Captair Midcap 321_2023 - Erlab France - Technical data are not contractual. Erlab reserves the right to modify the present document without prior notice.

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