erlab
You can breathe.

HALO C & P

Ceiling mounted air purification station

Instructions & User's Manual for HALO Carbon and HALO HEPA

Filtration of Gas, Viral & Bacterial Pollutants

Contents

General 3

Safety notices 3

Product registration 3

Description of the unit HALO C and P 6

Installation HALO C and P 9

Connectivity principle 13

Sensors sensitivity settings 27

Recommendation for the replacement of particulate filters 28

HEPA filter replacement and removal 29

Replacing the filter and the Prefilter 30

Recommendations for the use of filters 32

General Description

HALO C and P guarantees all labs, offices or classrooms air decontamination from all chemical, viral and bacterial pollutants. Automas from HVAC system.

Halo C air purifier units (VOC, Formaldehyde, Chemplus) allow for the complete molecular filtration (compliant with **NF X 15-211**) laboratory grade molecular filtration safety standard) of a wide variety of airborne pollutants which can represent a health threat to all occupants.

In order to bring the best particulate filtration technology, we have equipped our **HALO P** purified air units with a **HEPA H14** laboratory grade particulate filter or when necessary a **ULPA U16** particulate filter for the most critical health risk situations.

Safety notices

The effectiveness of this device is directly dependent upon correct use and monitoring.
The equipment provided is not intended to be used in an explosive atmosphere.

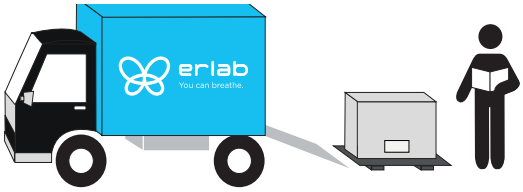
Keep away from any risk of liquid splashes.
Do not installed outside of the laboratory.

Sensor replacement:
- VOCs sensor: every 5 years
- Chemplus and Formadehyde sensors: every 2 years
After the usage time, Erlab cannot guarantee its stability and performance.

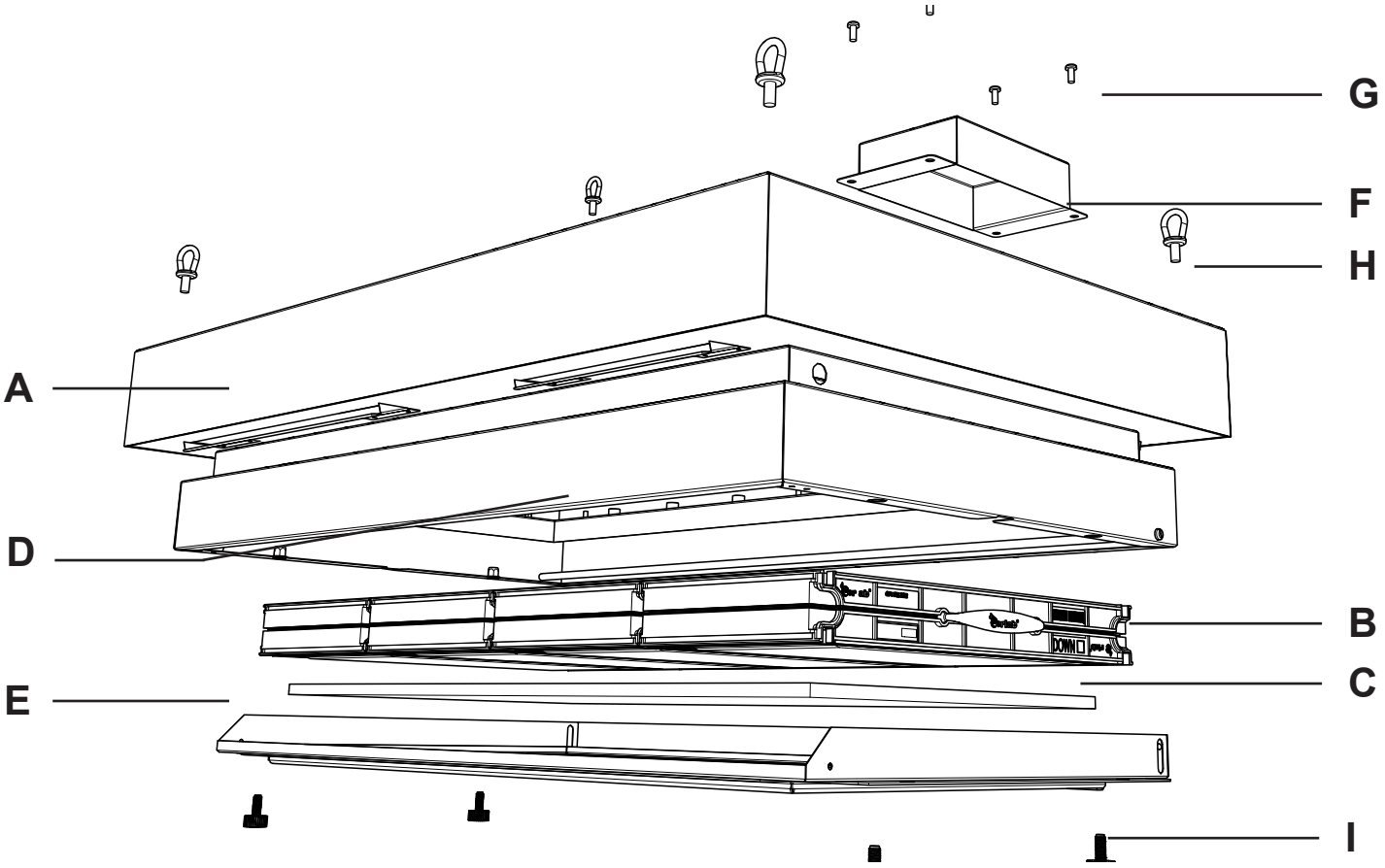
Warranty

A 5 Year Warranty is valid on all Halo products with regards to mechanical parts as long as genuine Erlab parts and filters are used in compliance with the Captair Brand specifications. Consumable items (including filters) and Captair Pyramid remain under warranty only until the first use. Erlab Inc. is the Sole US Distributor of Captair products and is not responsible for damage that occurs as a result of failure to follow instructions that are included with the original product. This Limited Lifetime Warranty does not apply from the result of an accident, misuse, abuse, contamination, modification, normal wear and tear or other external causes. This section constitutes Clients sole and exclusive remedy and Erlab Inc.'s sole and exclusive responsibility with respect to any alleged breach of this limited warranty.

388 Newburyport Turnpike
Rowley, MA 01969
800-964-4434

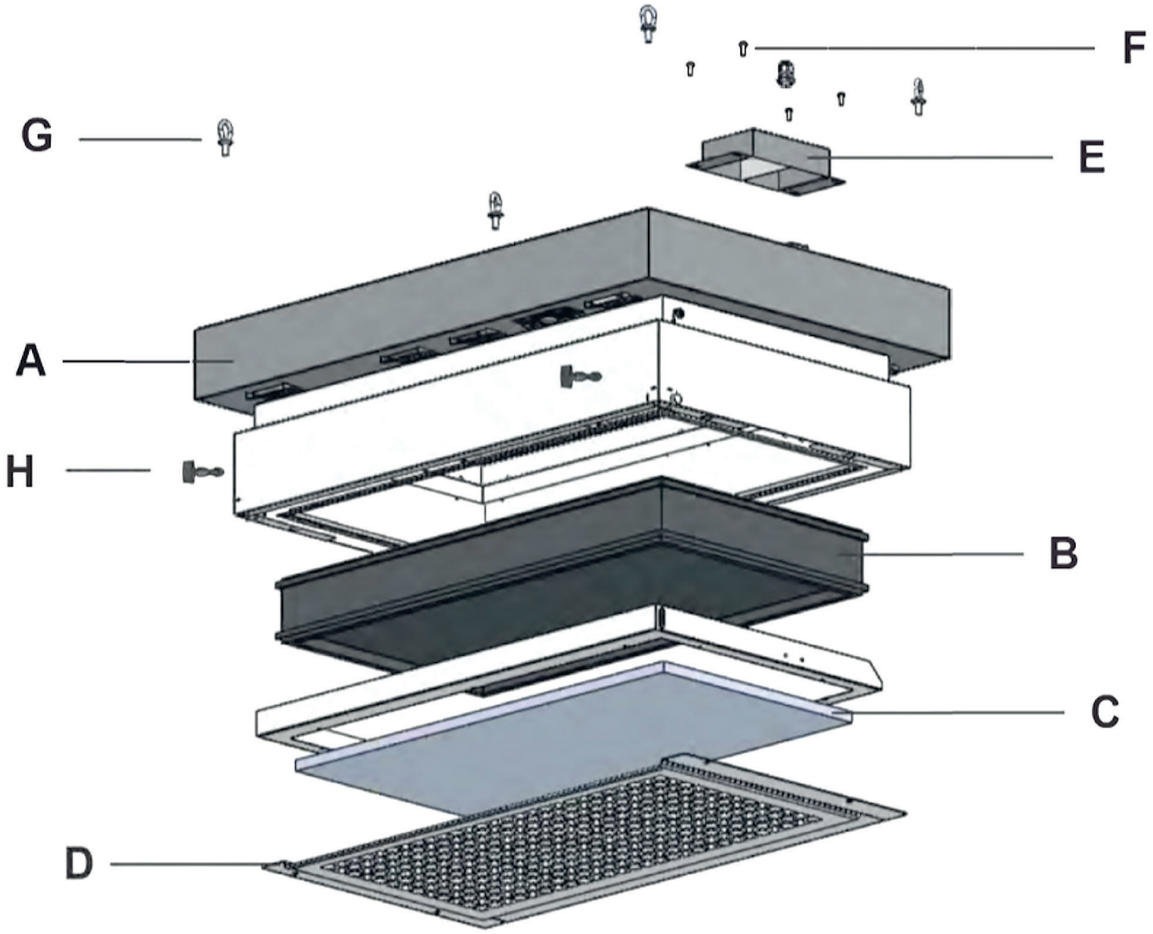


HALO C



A	Fan module
B	Carbon or HEPA filter
C	Prefilter
D	Postfilter
E	Grid
F	Power supply carter
G	4 Screws
H	4 eye bolts
I	4 quarter turn screws

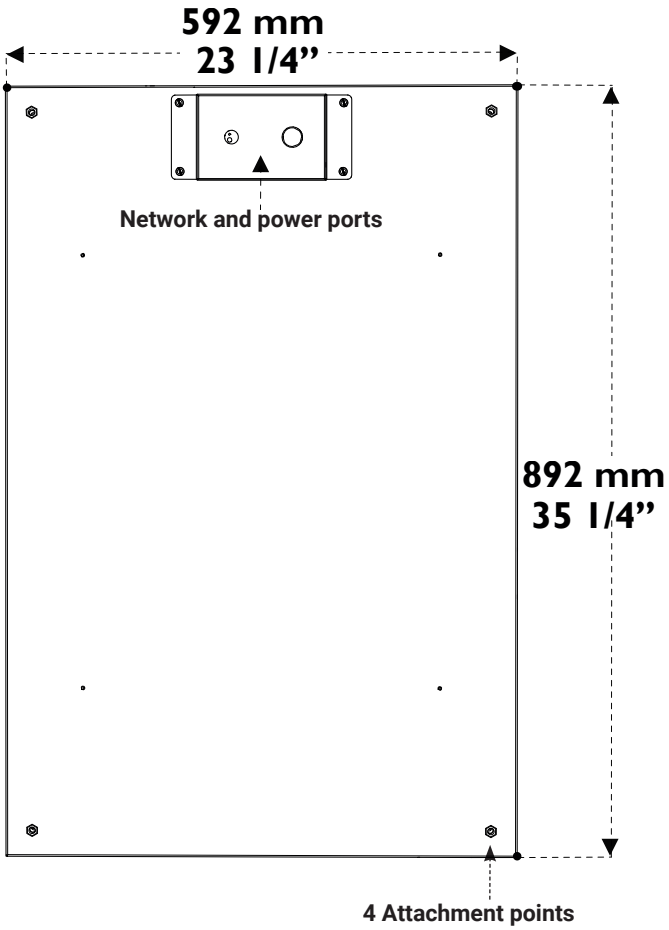
HALO P



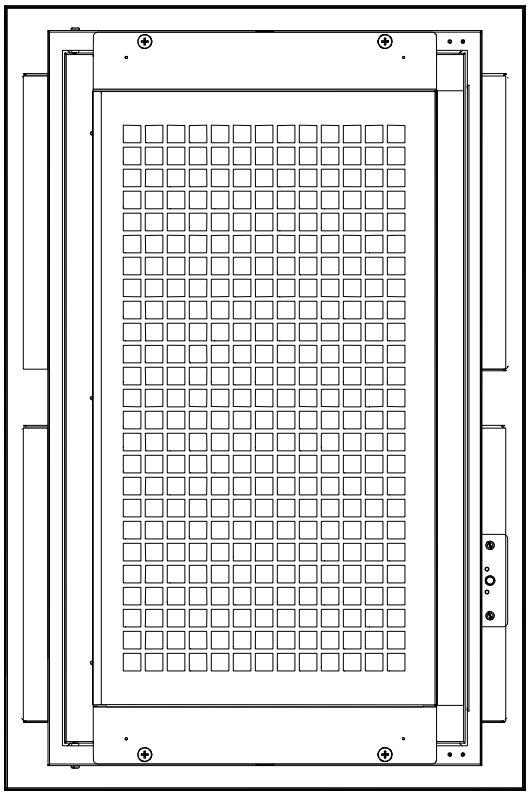
A	Fan module
B	Filter
C	Prefilter
D	Grid
E	Power supply cover
F	4 screws
G	4 eye bolts
H	2 pins

Description of the unit

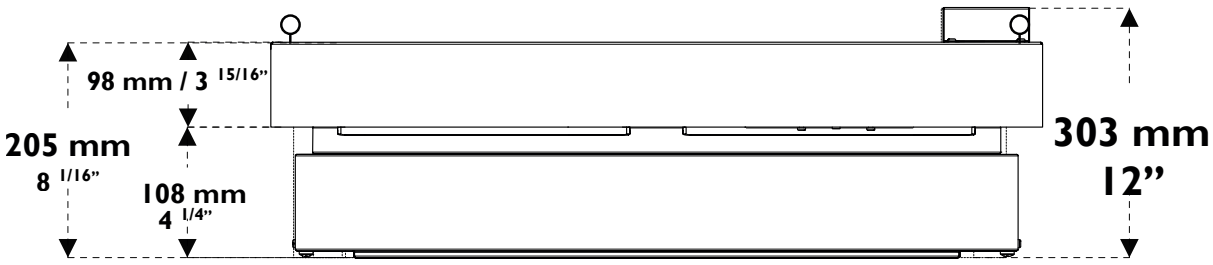
Above view



Below view



Side view



HALO C

Specifications			
Processed air flow	220 M ³/H / 130 CFM		
Operating modes	24/24h - 7/7, Night/Day, Min Max detection, Detection value only		
Fan monitoring	Halo unit monitors the air flow and informs the user through light pulsation communication		
Prefiltration	Particulate prefilter		
Postfiltration	Particulate postfilter		
Sensors	VOC	Chemplus	Formaldehyde
	Semiconductor for VOCs	Semiconductor of a wide array of pollutants	Electro-chemical sensor for Formaldehyde
Filtration options	For organic vapors	For formaldehyde vapors	For organic vapors and acid vapors
Smart-light	Simple communication by LED pulsation system		
Ethernet Port	1 x RJ45 (included)		
Installation	Hung via 4 eye bolts (included) must hold 68 lbs.		
Weight	68 lbs. (including filter)		
Voltage / frequency	80-240V 50/60hz		
Amperage	0.5 A (220 V) - 1 A (110 V)		
Energy consumption	50 W		

HALO P

Specifications		
Processed air flow	300 m³/H / 120 CFM	
Operating modes	24/24h - 7/7, Night/Day	
Fan monitoring	Halo unit monitors the air flow and informs the user through light pulsation communication	
Prefiltration	Particulate prefilter	
Particulate filtration for powders	HEPA	ULPA
	HEPA H14 filtration efficiency: 99.995 % according to MPPS method, EN1822 standard	ULPA U16 filtration efficiency: 99.99995 % according to MPPS method, EN1822 standard
Smart-light	Simple communication by LED pulsation system	
Ethernet Port	1 x RJ45 (included)	
Installation	Hung via 4 eye bolts (included) must hold 31 Kg / 68,34 lb	
Weight	31 kg (including filter)	
Voltage / frequency	80-240V 50/60hz	
Amperage	0.5 A (220 V) - 1 A (110 V)	
Energy consumption	50 W	

Installation HALO C and P

Minimum protective equipment

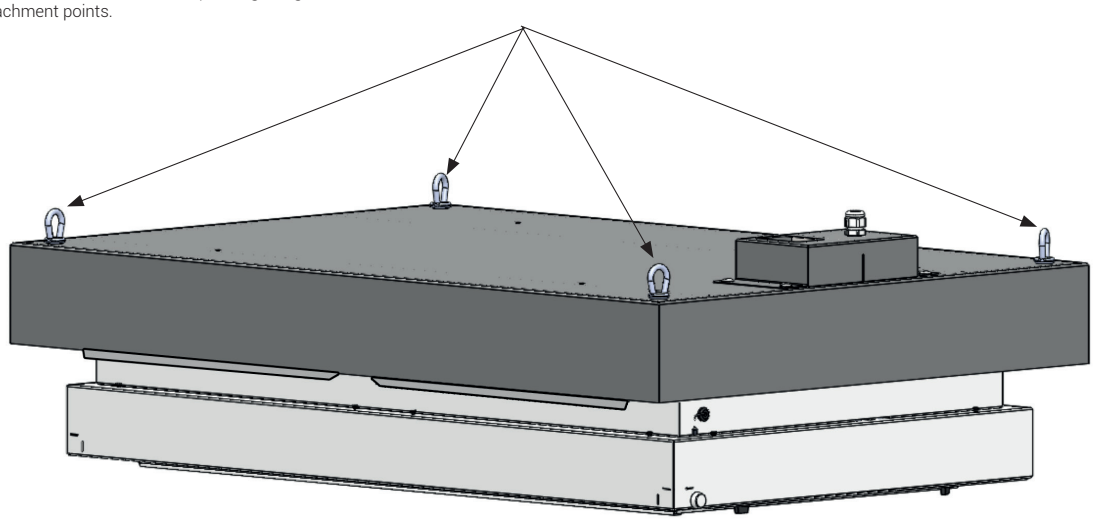
- One-piece overall + overshoes + bouffant cap
- Gloves
- Protective glasses

According to the local regulations

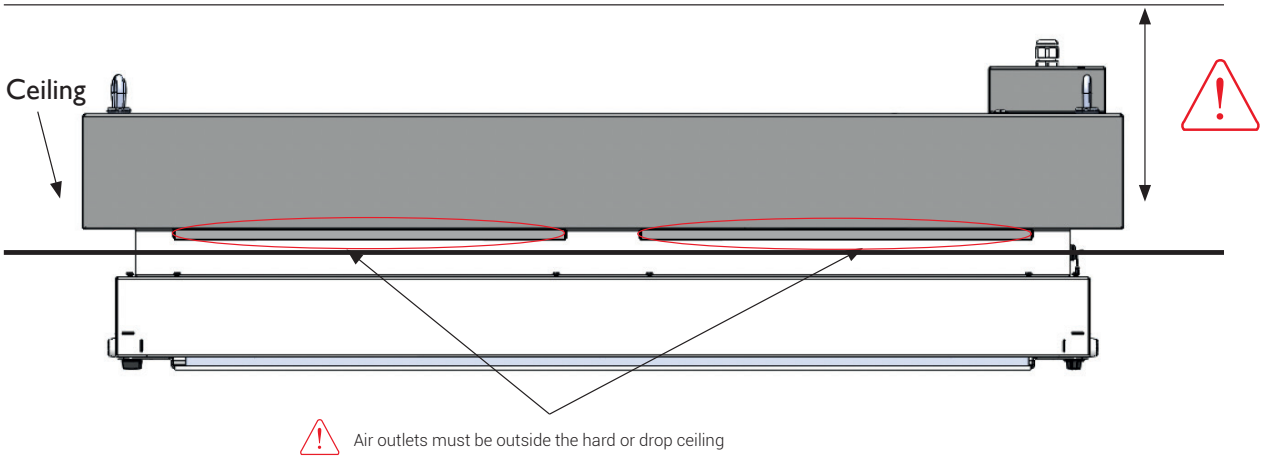
1

Provide an accessible RJ45 socket in your room. This will allow you to connect more easily to your device.
Erlab will not bear any responsibility regarding product installation. Installation shall be performed by qualified persons and shall respect building codes (and all other advice necessary for installation).

Fix the unit into the hard or drop ceiling trought its 4 attachment points.

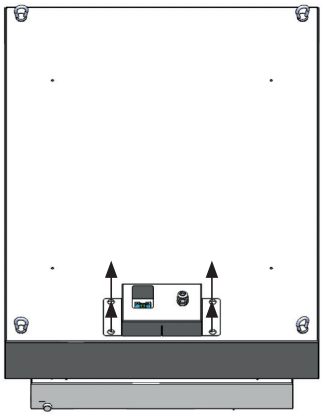


2

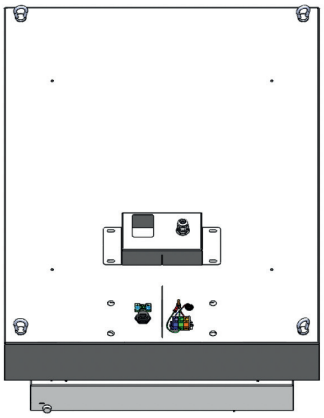


Air outlets must be outside the hard or drop ceiling

3



4



5

Make sure to cut off the power supply before any intervention

Connect the power supply to your mains and connect the RJ45 cable to your Ethernet socket.
It is recommended to install a switch between the electrical cable and the electrical outlet

1

Remove the cover to get access to the electrical power block and RJ45 port.

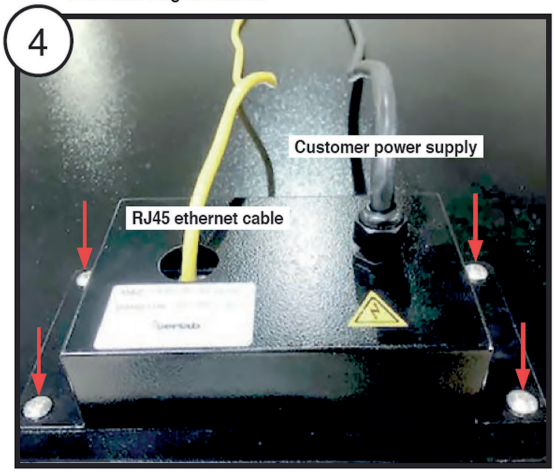
2

Electrical connection:
Each unit must be grounded. For electrical connection, reference diagram above.

3

Connect the Ethernet cable to the RJ45 port
To install the electrical connections press down with a small slotted screw driver then insert the wire

4

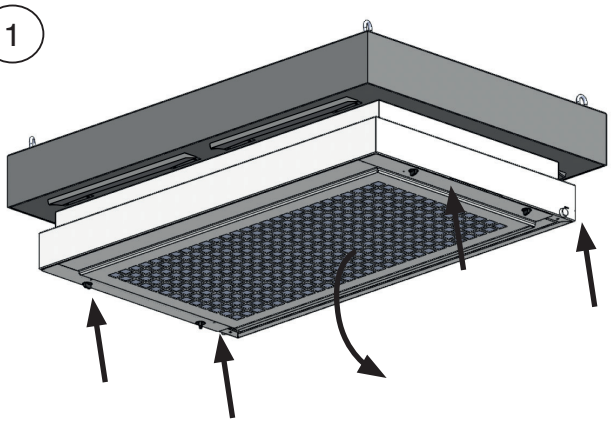


Reassemble the cover

HALO C and P filters and prefilter's installation

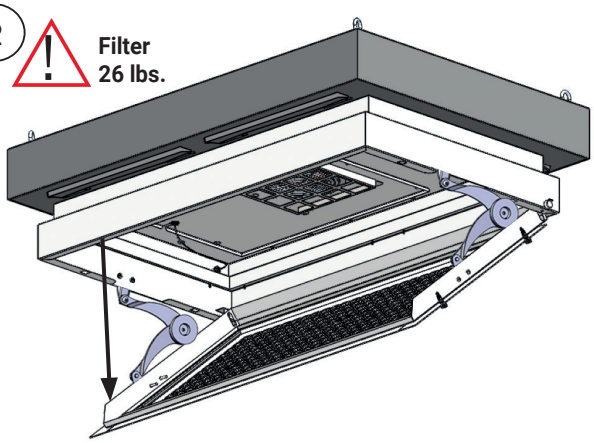
- **Installation of carbon or HEPA / ULPA filter**

1

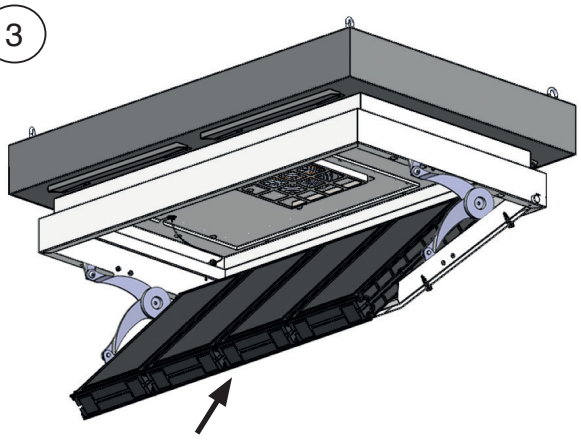


Make a quarter turn

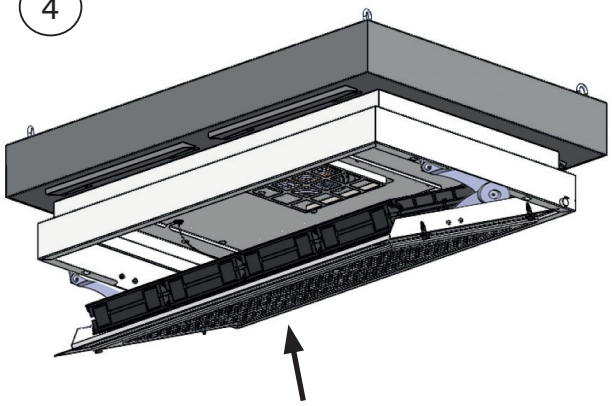
2



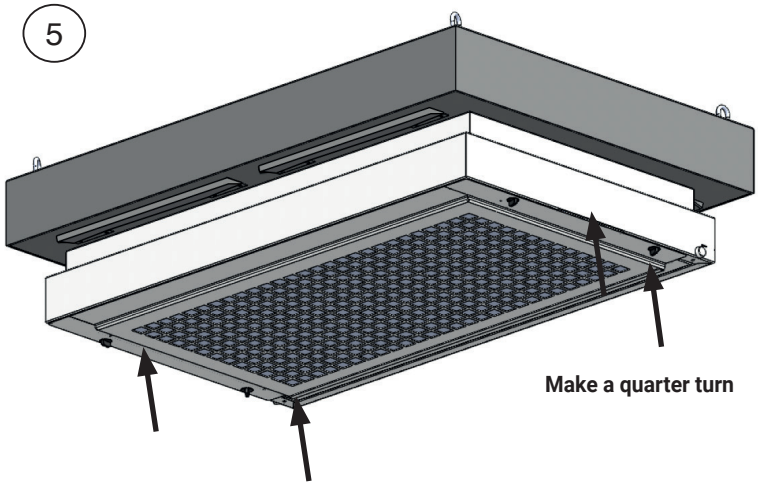
3



4

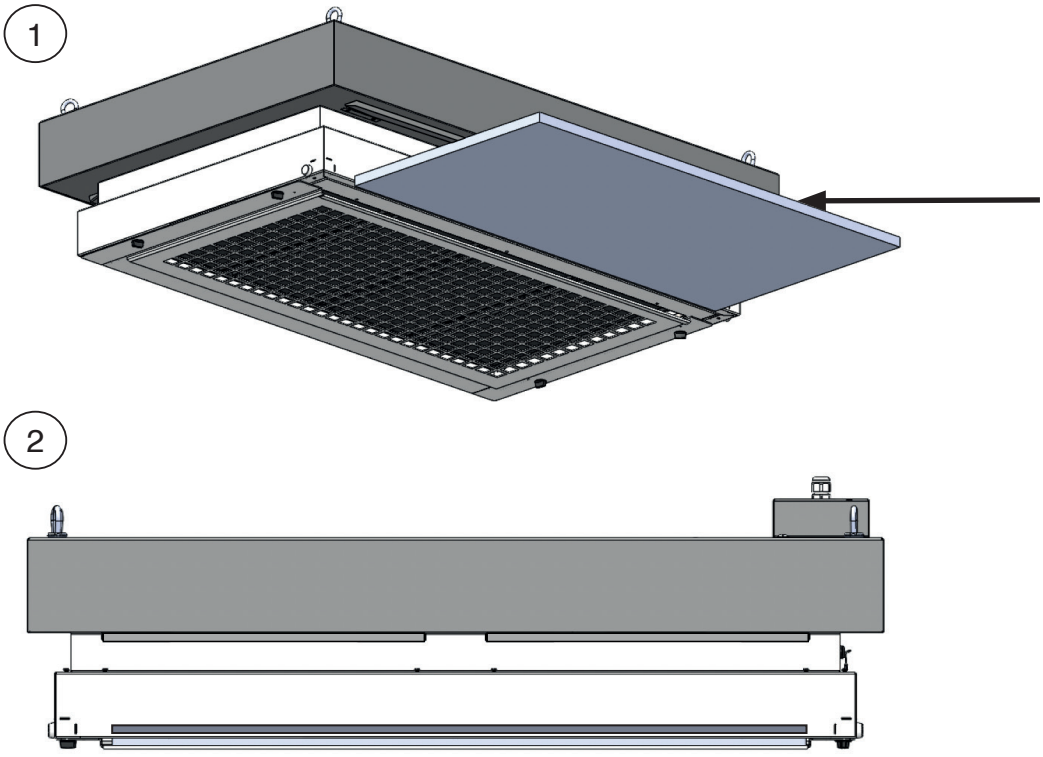


5



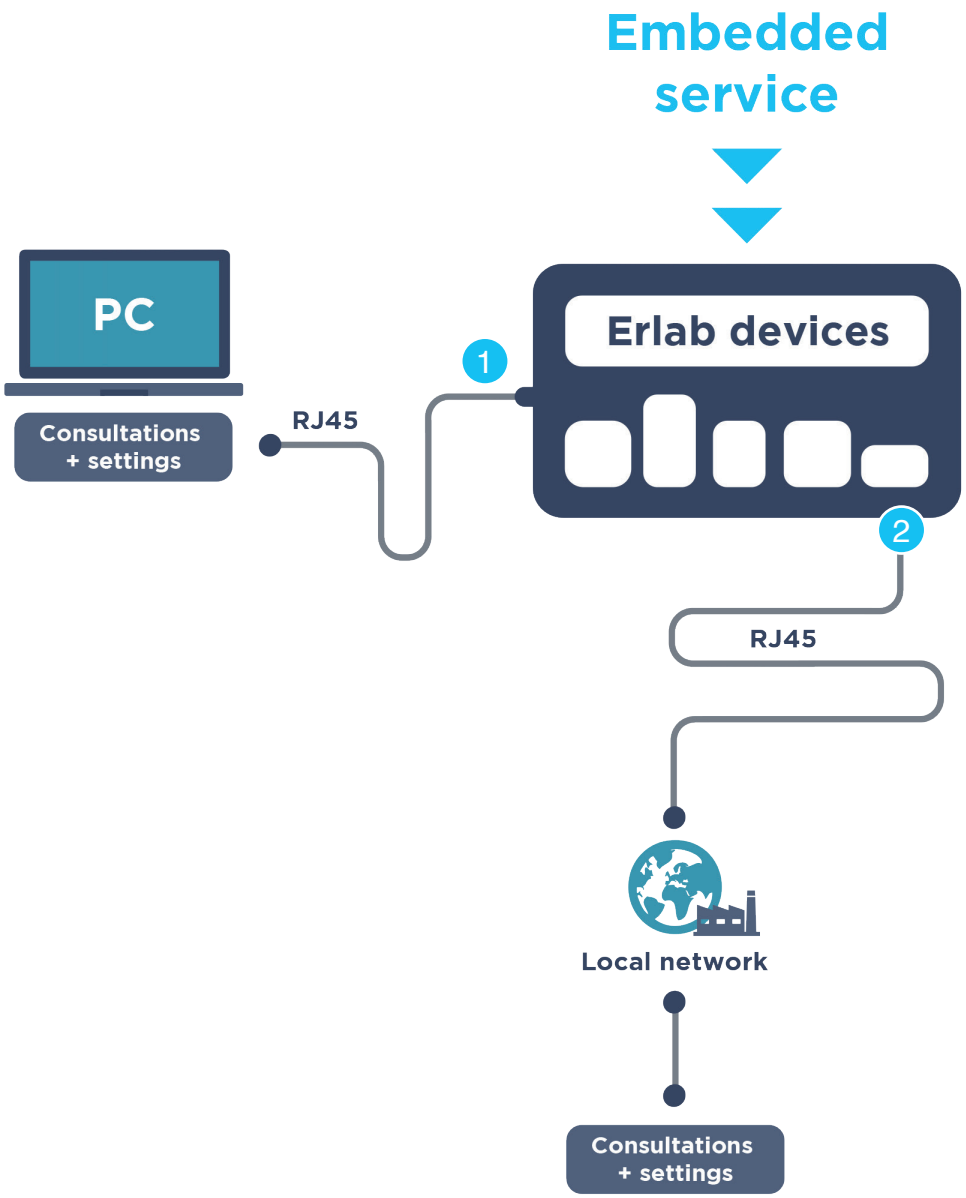
Make a quarter turn

- **Prefilter installation**



Connectivity principle

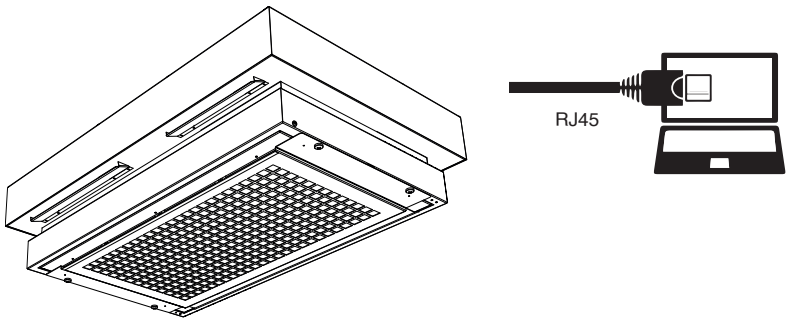
Ecosystem designed for simpler use and safer protection



connect your device	1  Embedded service
Conditions of use	**Direct connection on PC with data cable (RJ45)**
Hardware requirements	1 PC + 1 cable
Parameters	Monitoring + Controlling
Data access	One unit
Historical data access	✓
Historical data download	✓
Alerts, Notifications	
Multiple units monitoring	
Multiple user accounts	
Automatized status report	
Download	

How to connect

- Direct connection to computer



Direct connection to computer

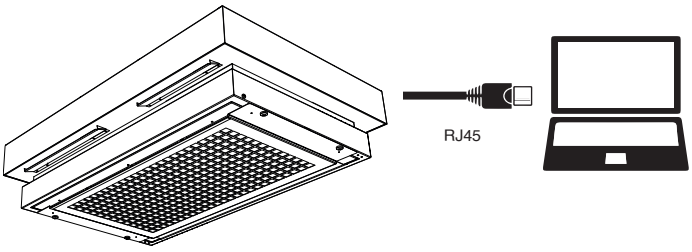
Consult the parameters and access your device settings via the embedded service.
To monitor the parameters and modify the settings of the unit

In order to connect:

- Use a computer equipped with an Ethernet port to plug in the RJ45 cable
- WIFI of the computer must be **switched off**
- Web browser (Internet Explorer, Edge, Chrome, Mozilla Firefox, Safari, …) must be installed on the computer

Note: RJ45 cable used to plug the unit to the computer is provided.

1 Connecting the device to the PC



Default IP address

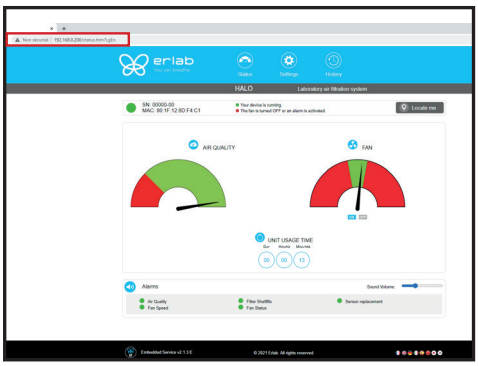
IP : 192.168.0.200

If the network settings are changed, copy the new IP address here:

_____

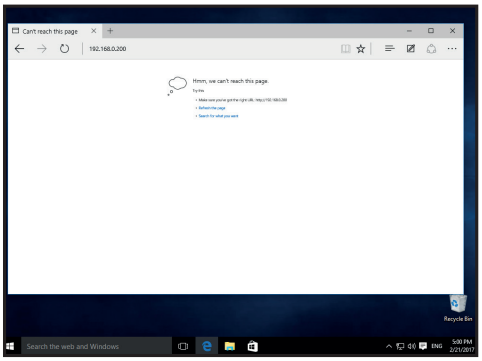
- Take the RJ45 cable out of the package and plug into the ethernet port on the back of the device

2 Open your web browser, type the following IP address 192.168.0.200 into the address bar and validate



OK

You are connected to the embedded software
You enter the « Status » page and you can have access to the « Settings » using the following credentials:
Login : **erlab** / Password : **smart**
Please go to page 20



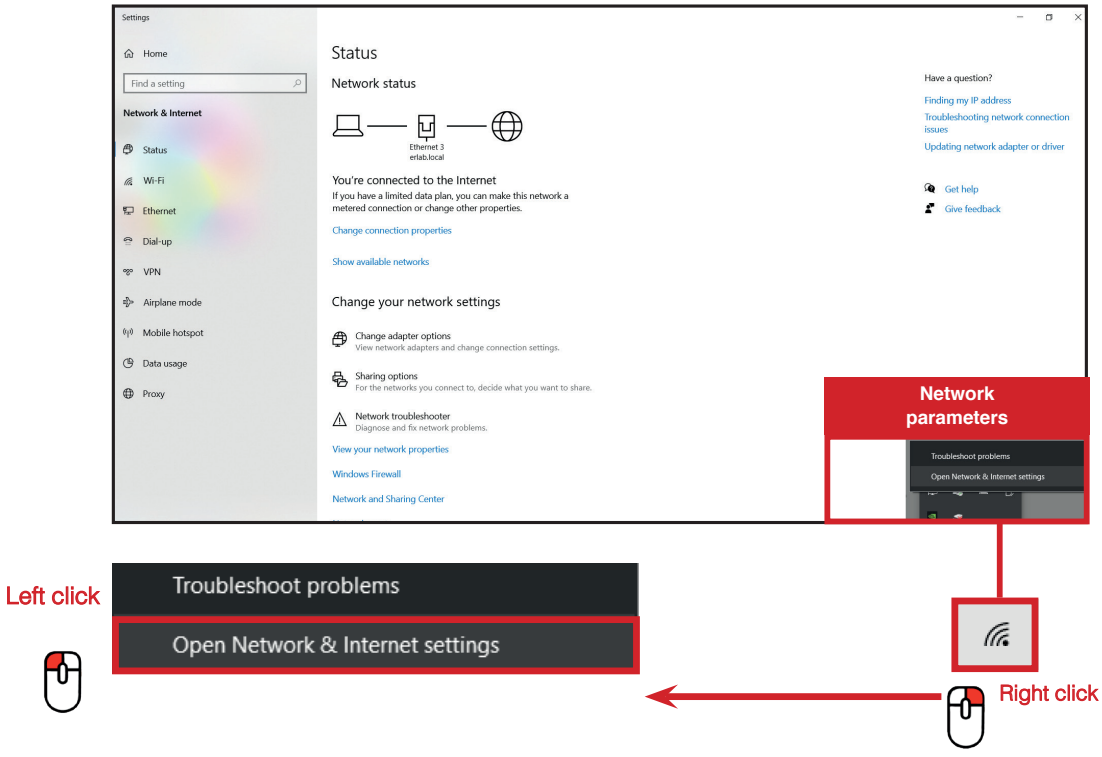
Page is not accessible

Computer network parameters are not allowing the access to the embedded software

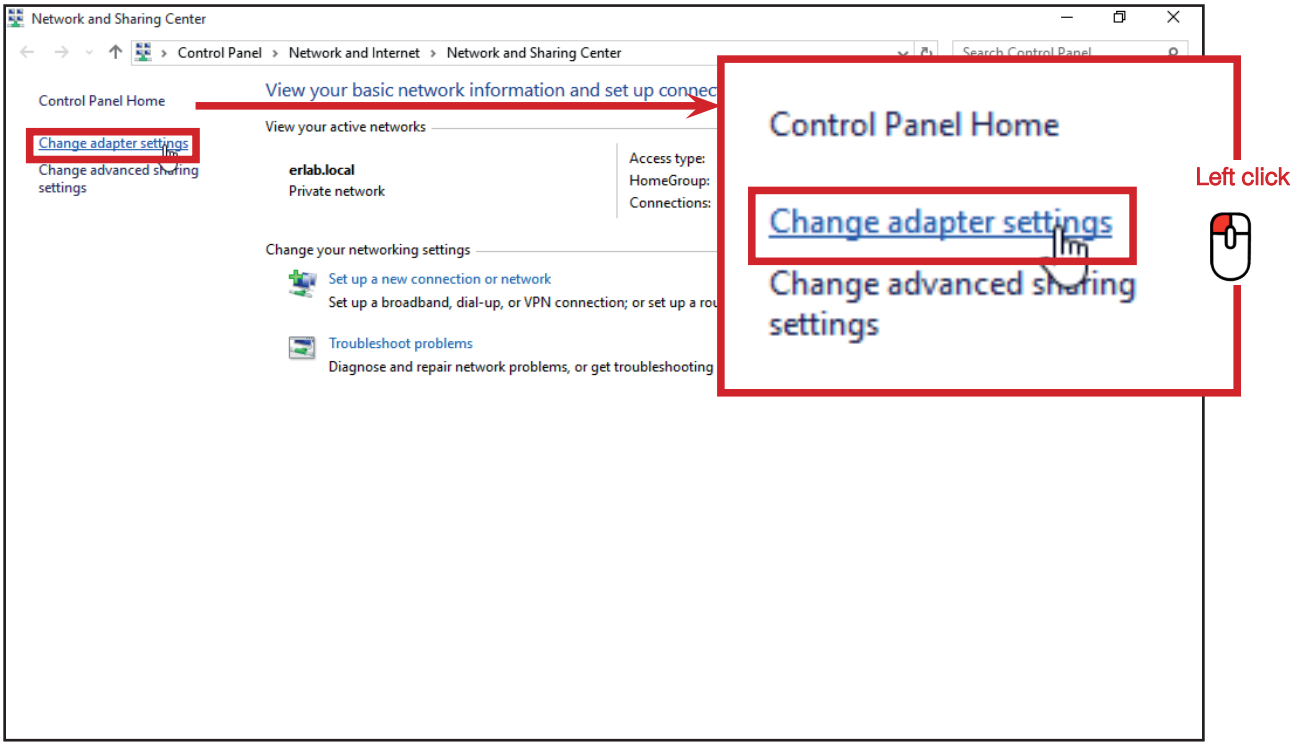
Apply the following procedure

Page is not accessible

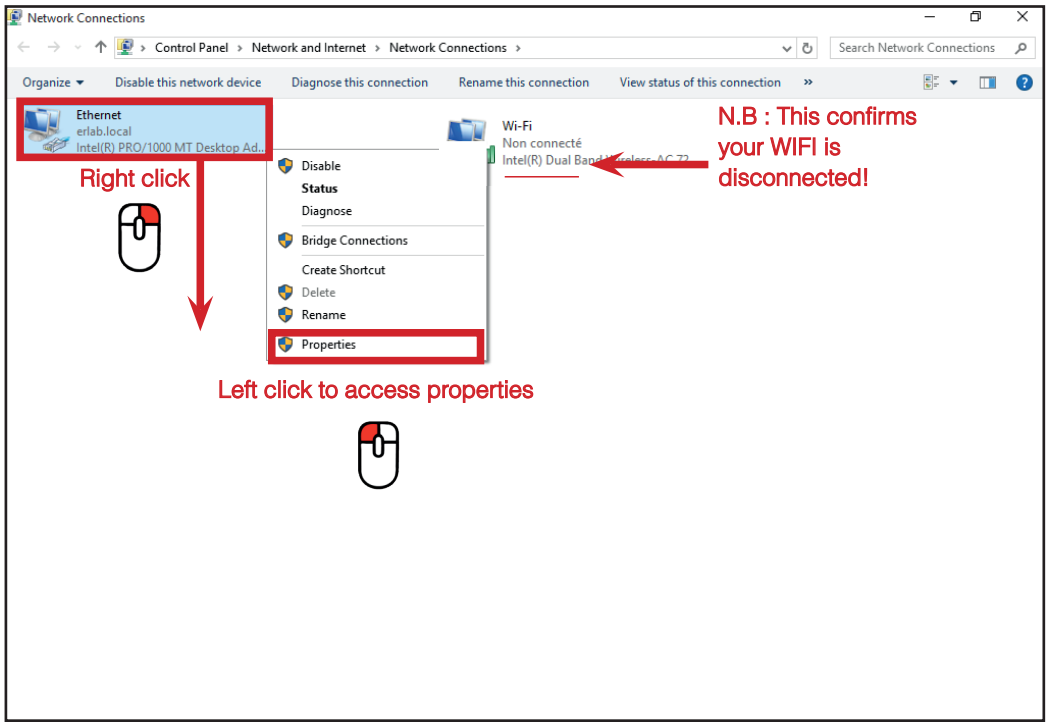
1 Modify computer network parameters (windows 10)



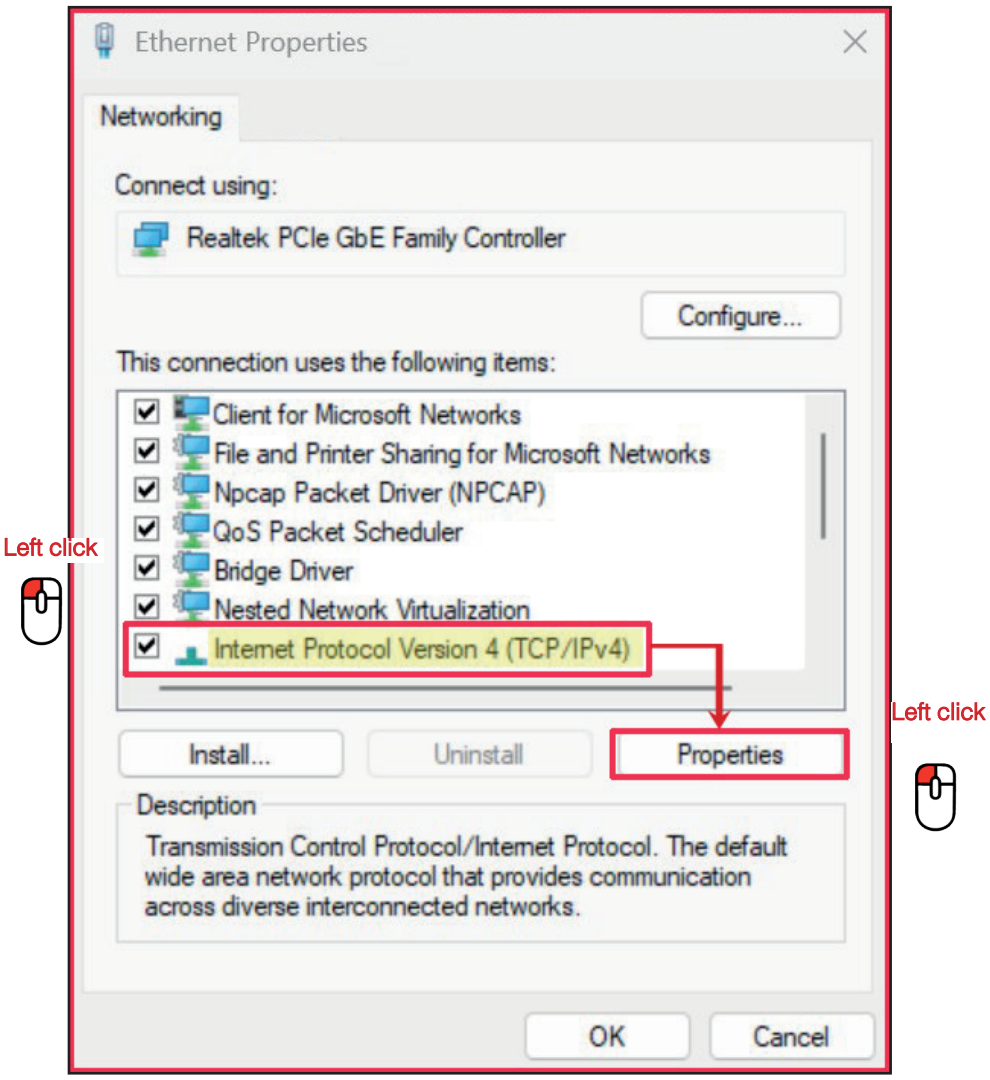
2 Access to the Network and sharing center (windows 10)



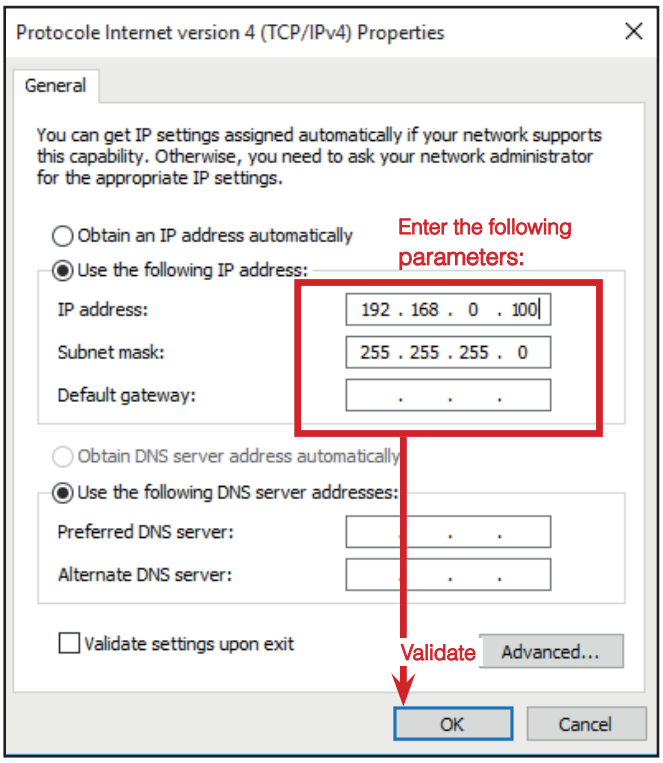
3 Access to the network connection (windows 10)



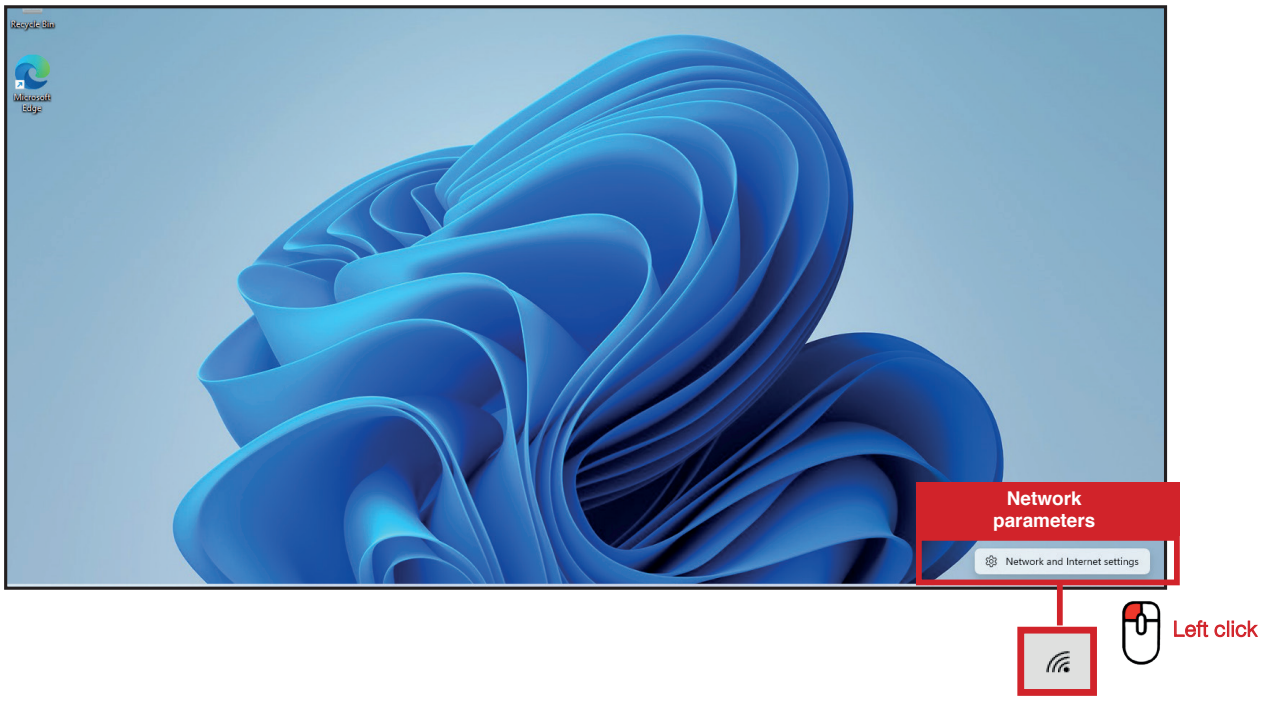
4 **Enter compatible network parameters as indicated below** (windows 10)



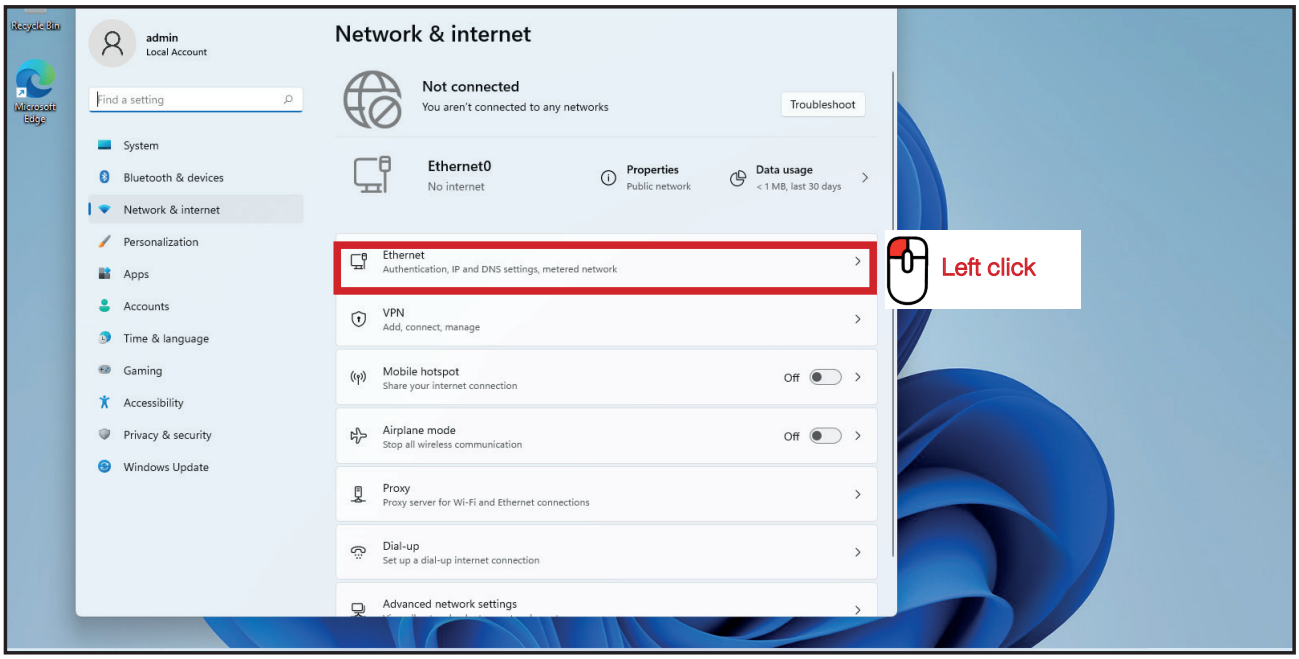
Write down your existing parameters **before** changing them in order to be able to set your initial parameters after the operation!



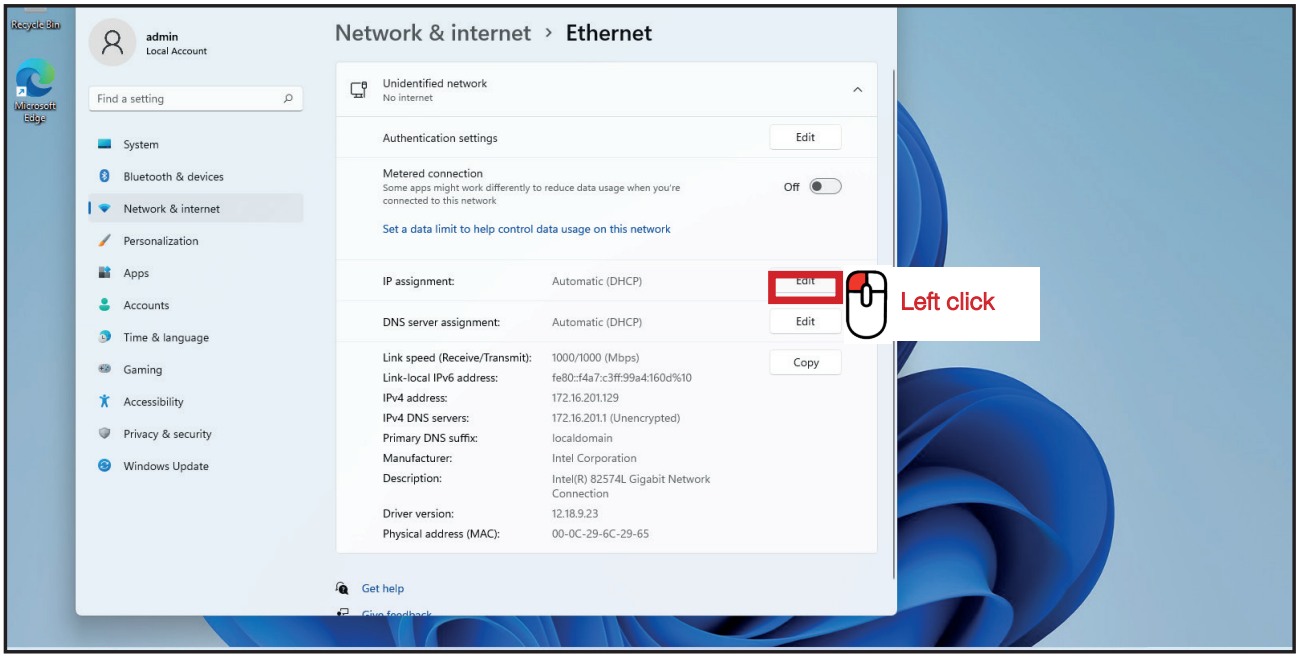
1 Modify computer network parameters (windows 11)



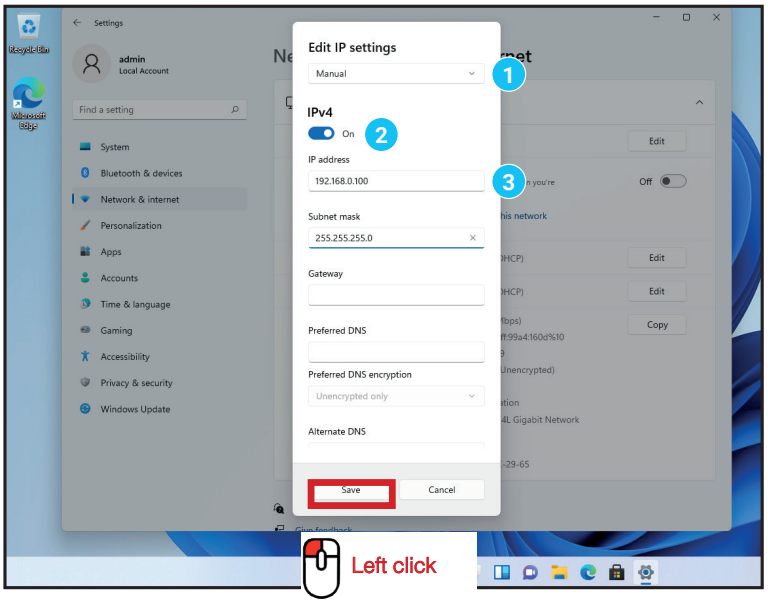
2 Access the network and sharing center (windows 11)



3 Access the network connection (windows 11)

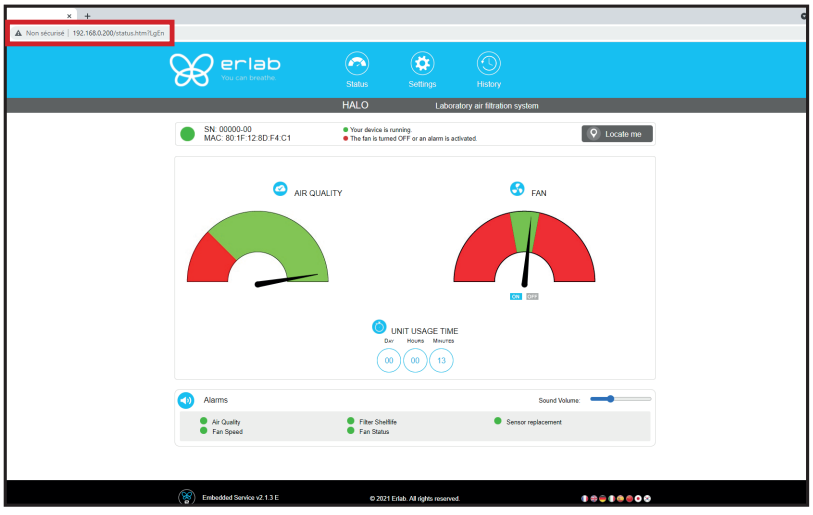


4 Enter compatible network parameters as indicated below (windows 11)



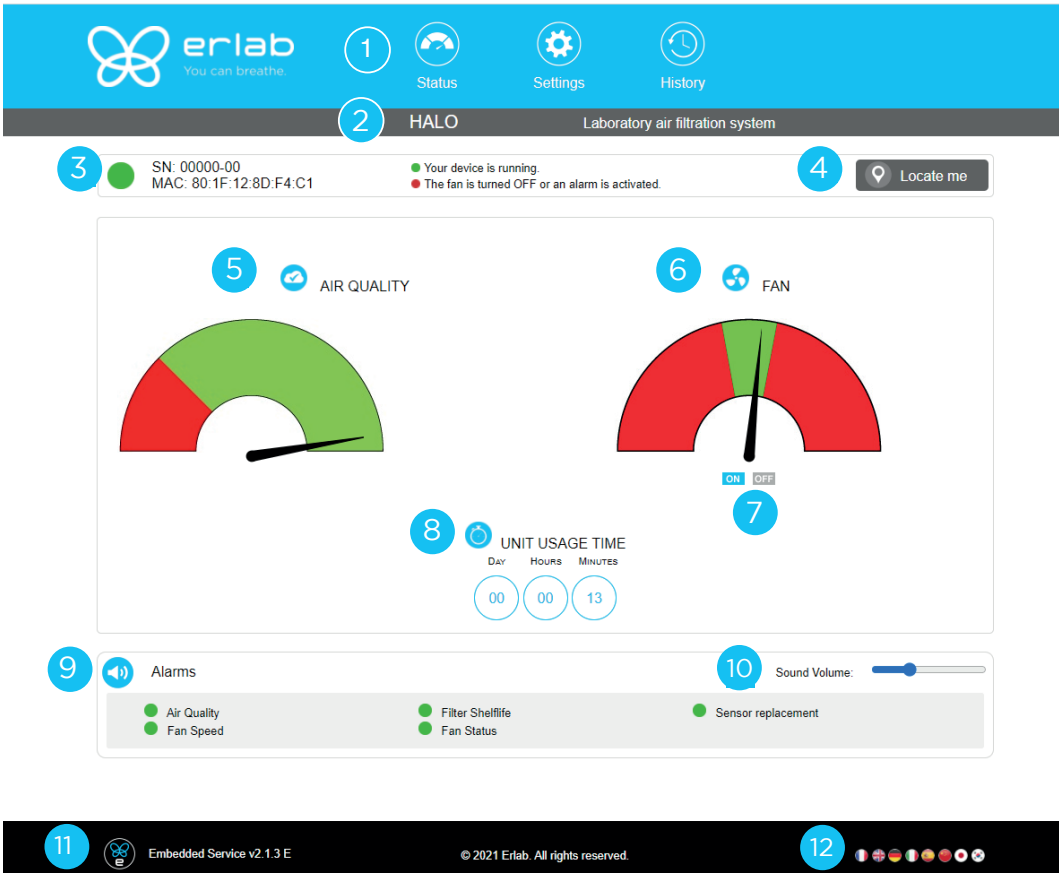
1. Select «manual»
2. Set «IPv4 to On»
3. Enter the IP address «192.168.0.100»

5 Open your web browser again, type again the following IP address 192.168.0.200 and validate



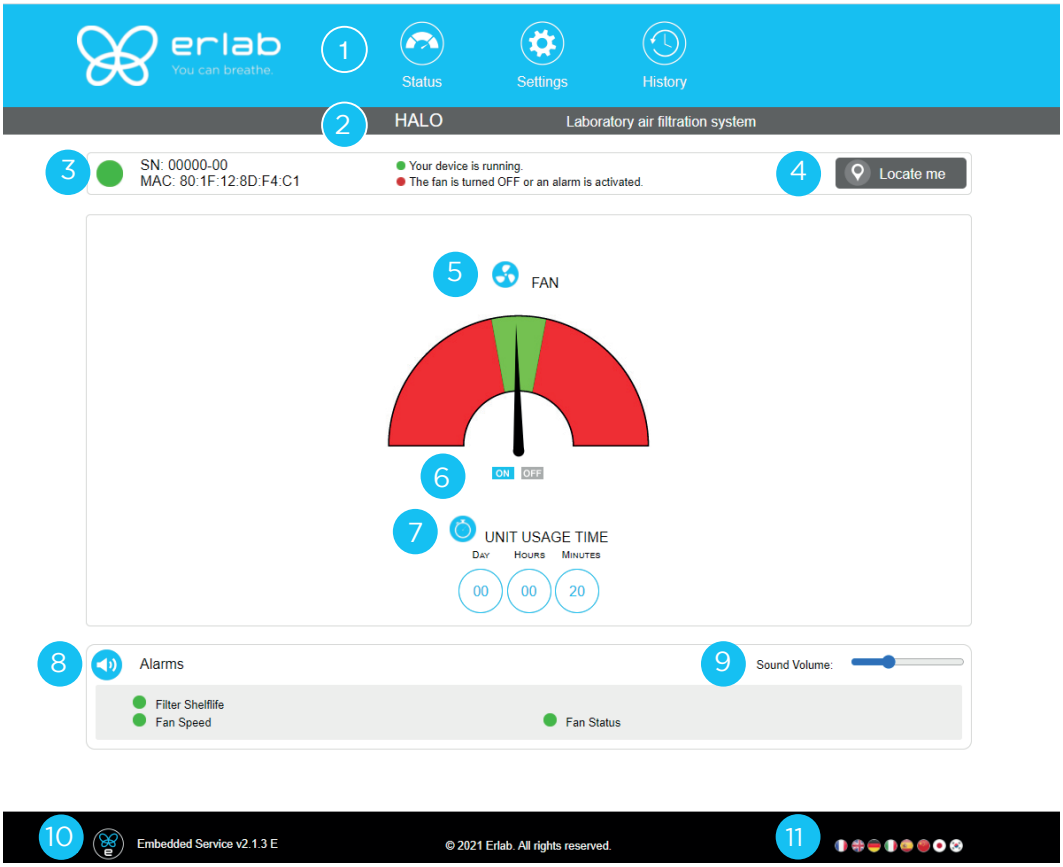
- **OK** : You are connected to the embedded software
  You enter the « Status » page and you can have access to the « Settings » using the following credentials:
  Login: **erlab** / Password : **smart**

Administrator interface **HALO C**



Status page details	
1	Choose active interface page
2	Device ID: Model
3	Device ID: serial number, MAC address, device status
4	Activates smart light to identify the unit location
5	Air quality gauge: indicates the air quality level (green: good air quality/Red: polluted air)
6	Indicates fan status
7	ON/OFF: Turn ON/OFF fan
8	Unit usage time since since its first usage
9	Alarms
10	Volume setting
11	Embedded service version
12	Choose language

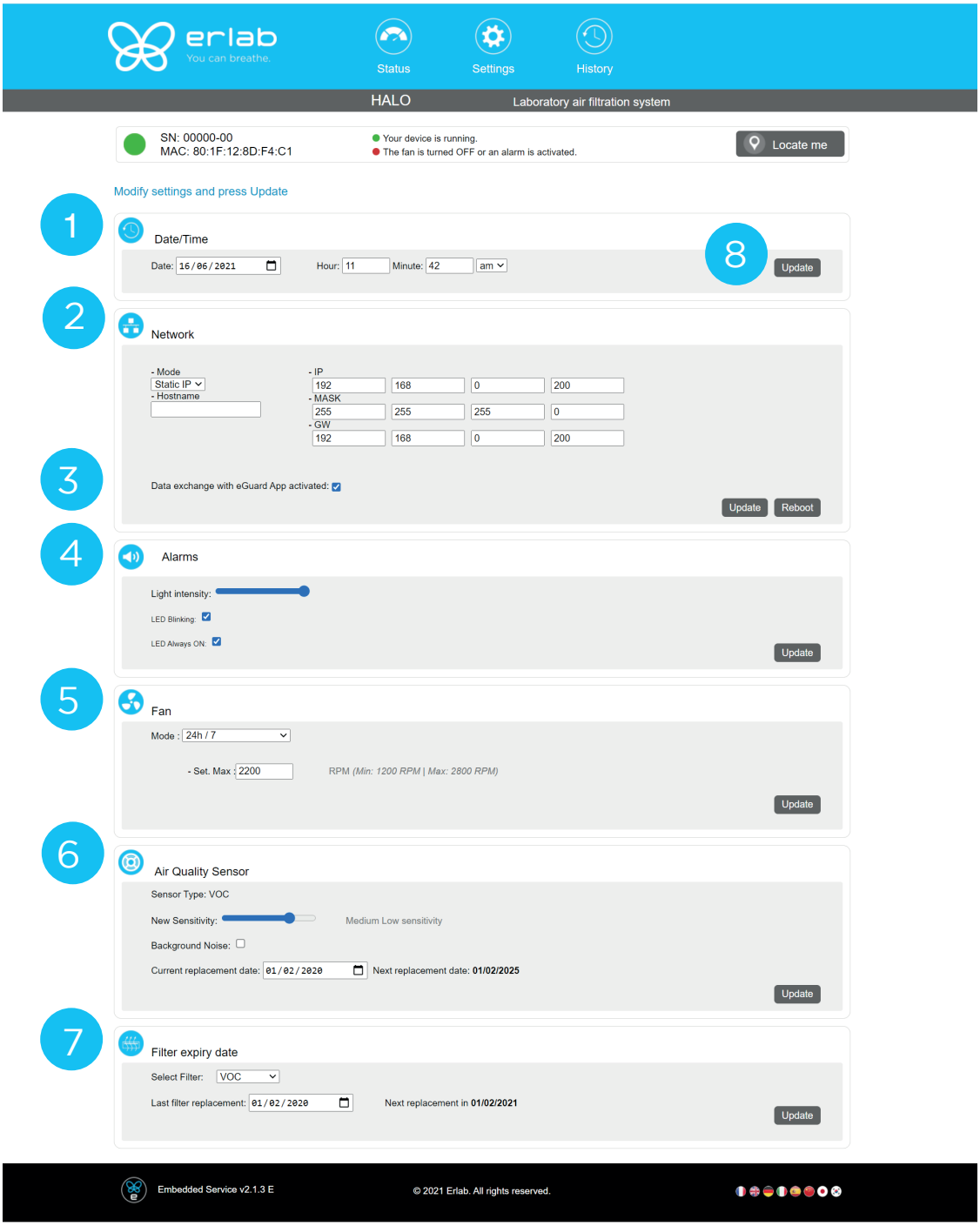
Administrator interface **HALO P**



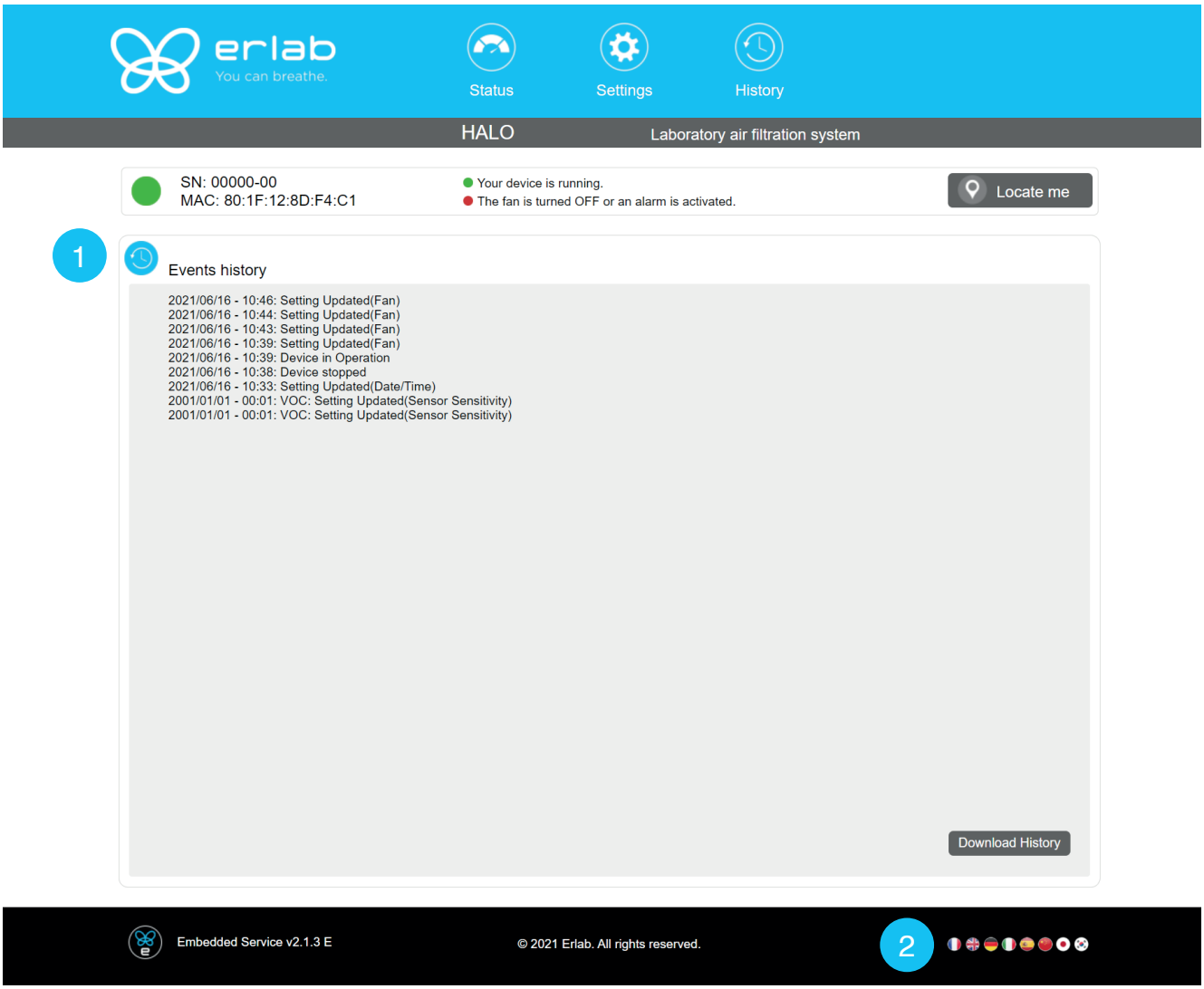
Status page details	
1	Choose active interface page
2	Device ID: Model
3	Device ID: serial number, MAC address, device status
4	Activates smart light to identify the unit location
5	Indicates fan status
6	ON/OFF: Turn ON/OFF fan
7	Unit usage time since since its first usage
8	Alarms
9	Volume setting
10	Embedded service version
11	Choose language

Access to the settings with the following login credentials:

User name: erlab
Password: smart



Settings details	
1	Device time and date settings
2	Device network settings Mode: Selected IP protocol Hostname: Device name on network IP: IP address of the device MASK: network mask GW: Network gateway
3	Activate/Deactivate the exchange of information This allows the transmission of information from the device to the eGuard server for: - remote monitoring via eGuard App (mobile &PC) - receiving usage reports
4	Adjustment of the light intensity of the LED strip Alarm light (A): enables flashing in the event of an alarm Constant LED illumination (B): strip is permanently lit ⚠ Caution: Sound required to perceive the alarm if : -(A) deactivated and (B) activated -(A) on and (B) off and light intensity at minimum
5	**Halo operation modes HALO 35 C and P** **Mode : 24/7** Halo is running 24/24 - 7/7 Recommended speed (RPM): HALO 35 C: 2200 / HALO 35 P: 2000 (220m3/h / 300m3/h) **Mode : Min Max detection** *(HALO 35 C only)* This mode defines a min. and max. fan power During normal operation, the fan speed is defined by the value entered into the Min. setting. The Halo reaches its maximum fan speed if the sensor detects a pollution in the ambient air (the treshold value of the sensor has been reached). Recommended speed (RPM): Min: 1300 / Max: 2200 (90m3/h / 220m3/h) **Mode : Detection value only** *(HALO 35 C only)* The ventilation is unactive.The fan automatically turns on its maximum if the sensor reaches its treshold value defined in the settings. Recommended speed (RPM): 2200 (220m3/h) **Mode : Day / Night** This operating mode sets the fan to run during: Day (8am - 8pm) or night (8pm - 8am) Minimum Setpoint: Min. fan speed of the Min Max Detection operating mode Maximum Setpoint: Max. fan speed for the Min. Max Detection and the Unique Detection operating modes Unique Setpoint: fan speed of the 24/7 operating mode Day Setpoint: fan speed of the Day for the Day/Night operating mode Night Setpoint: fan speed of the Night for the Day/Night operating mode Recommended speed (RPM) : HALO 35 C: Night: 1300 / Day: 2200 (90m3/h / 220m3/h) HALO 35 P : Night : 1300 / Day : 2000 (180m3/h / 300m3/h)
6	Air Quality Sensor ***(HALO 35 C only)*** Sensor type indication (VOCs / Chemplus / Formaldehyde) Sensor sensitivity settings: Semiconductor sensor (5 settings): High sensitivity, Medium/High Sensitivity, Medium Sensitivity, Medium/Low Sensitivity,Low Sensitivity Electro-chemical sensors (3 settings): High sensitivity, Medium Sensitivity, Low Sensitivity Sensor replacement Enter replacement sensor date, display the next sensor replacement date
7	Current replacement date: last filter replacement date Next replacement date: indicates the nest replacement date
8	Confirm settings key (please validate each setting)



Log page details	
1	Displays the device's event log
2	Used for downloading the log in .csv format

Sensors sensitivity settings

Settings recommended by Erlab

HALO C – For organic vapors

Chemical products	PEL/TWA 8H (ppm)	PEL/STEL (ppm)	High sensitivity (ppm)	Medium high sensitivity (ppm)	Medium sensitivity (ppm)	Low Medium sensitivity (ppm)	Low sensitivity (ppm)
Ammonia	10	20	10	15	25		
Hexane	20		1	2	5	15	20
Xylene	50	100	0	0.3	0.5	1.5	2
Acetonitrile	40		30	40			
Toluene	20	100	0	0.5	0.7	2	3
Isopropanol		400	1	1.5	2	3	5
Acetone	500	1000	1	3	5	6.5	8
Methanol	200	1000	1	2	5	10	15
Ethanol	1000	5000	1	2	5	10	15
Diethyl ether	100	200	1	2	5	8	10

HALO C – For acid vapors

Chemical products	PEL/TWA 8H (ppm)	PEL/STEL (ppm)	High sensitivity (ppm)	Medium sensitivity (ppm)	Low sensitivity (ppm)
Hydrochloric acid		5 ppm	0.5 ppm	1 ppm	2 ppm
Nitric acid		1 ppm	1 ppm		
Hydrobromic acid		2 ppm	0.5 ppm	1 ppm	

N.B: Halo Smart is not adapted to sense hydrofluoric acid

Halo C Smart – For formaldehyde vapors

Chemical products	PEL/TWA 8H (ppm)	PEL/STEL (ppm)	High sensitivity (ppm)	Medium sensitivity (ppm)	Low sensitivity (ppm)
Formaldehyde	0.5 ppm	1 ppm	0.1 ppm	0.5 ppm	1 ppm

Recommendation for the replacement of particulate filters

Particulate filters should be replaced every 36 months or if clogging is detected.
In order to check the filter for clogging, there is a hole on the outer wall of the Halo:

This orifice allows the vacuum downstream of the particulate filter to be monitored. Remove the black plug and measure the relative pressure at the orifice with a suitable pressure gauge.

For a new filter, the measured value must be within the tolerances of the table below. If the value is higher, the filter may be incorrectly installed or have a defect.
For a clogged filter, if the measured value is lower than the indicated value the filter is considered clogged and must be replaced.

Halo P filter clogging check (2000 RPM)	
	Relative pressure (Pa) at the pressure tap
New filter	-50 +/-5
Clogged filter	<-70

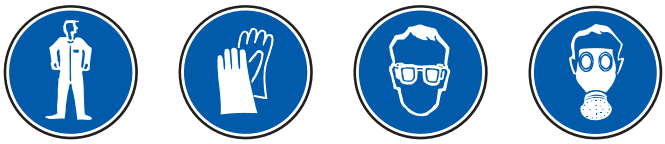
Replacing the HEPA H14 / ULPA filters

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.

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

1- With the fan on, spray a decontaminating solution on the accessible surface of the prefilter (quaternary ammonium solution not supplied)

2- Leave in contact for the time indicated by the manufacturer

3- Carefully unpack the new HEPA filter, keep the plastic film and the cardboard box for re-packaging the used filter and prefilter

4- Remove the pre-filter

5- Check the integrity of the plastic packaging, pack the used prefilter

6- Spray a decontaminating solution on the accessible surface of the HEPA / ULPA filter

7- Leave in contact for the time indicated by the manufacturer

8- Switch off the appliance

9- Carefully remove the used HEPA filter

10- Re-pack the used filter in its bag with the prefilter. Seal the plastic film tightly over all openings

11- Re-pack the used filter and prefilter in the new filter box. Seal with adhesive and clearly mark «used filter» on the packaging

12- Dispose of the filter via a suitable channel in accordance with the regulations in force. Contact us for more information

13- Decontaminate the filter location in the unit

14- Replace the new HEPA filter

15- Replace the new pre-filter

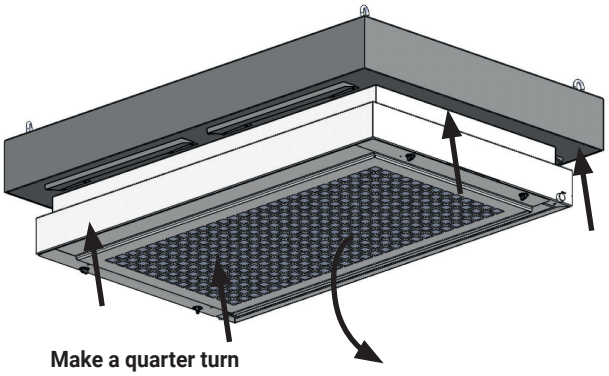
16- Restart the unit

Replacing the filter and the Prefilter

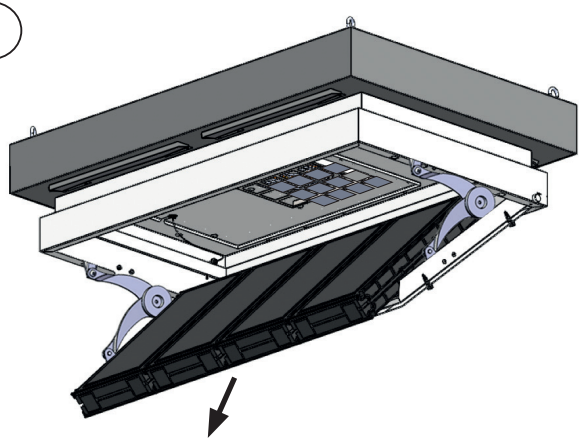
Replacing the carbon or HEPA / ULPA filter

⚠ If the dust load on the pre-filter is too heavy, we recommend vacuuming locally when changing the pre-filter.

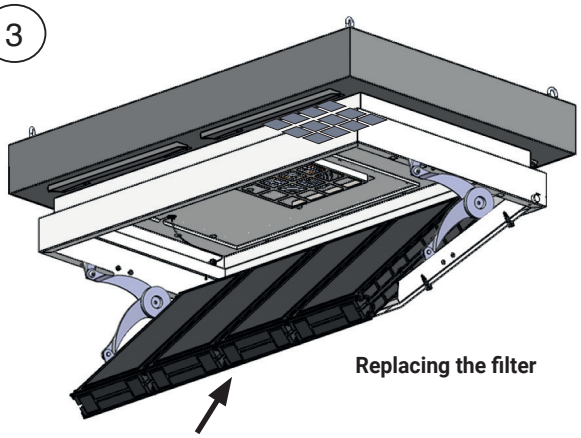
1



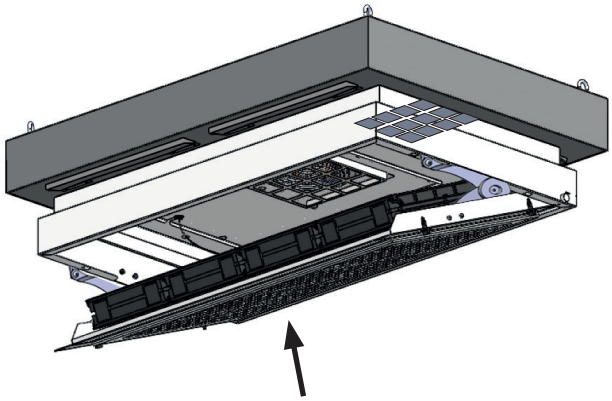
2



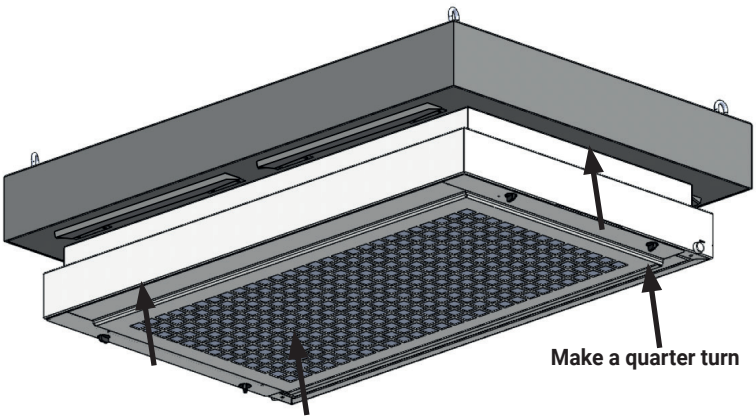
3



4

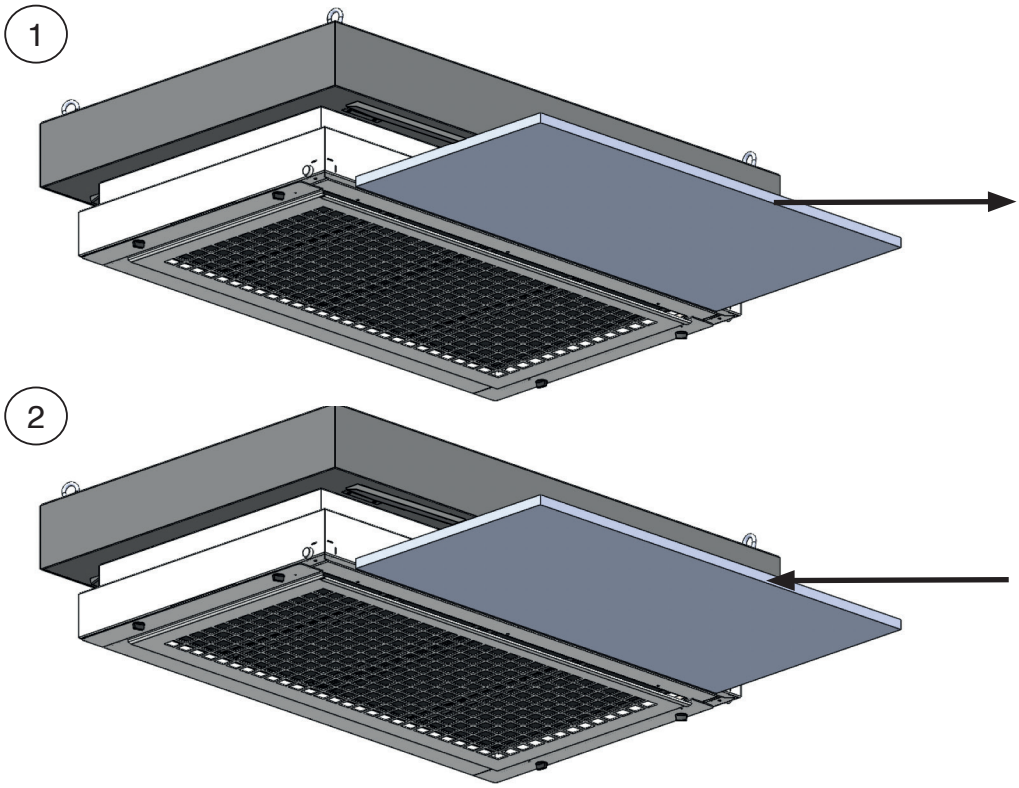


5



- **Replacing the prefilter**

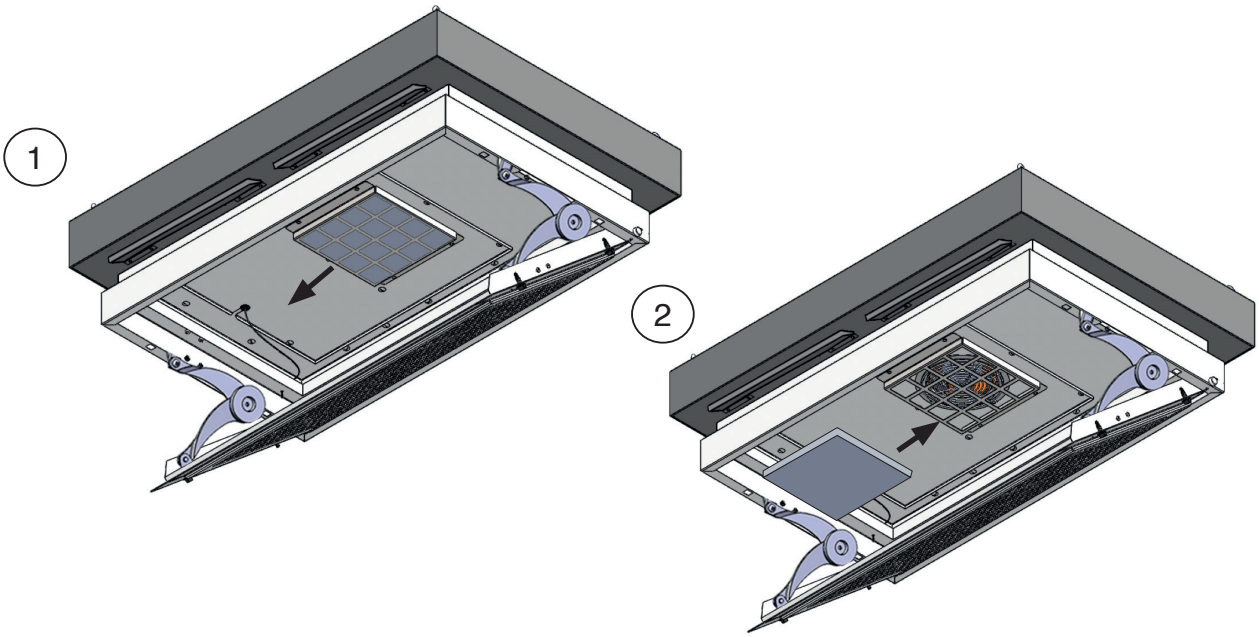
Prefilter ref : I 1000000001



Replacing the postfilter *(HALO C only)*

To access to the postfilter remove the filter

Postfilter ref : I 1040000001



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 Valiquest questionnaire:

- Feasibility of handling operations under a recirculating
- 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 Valiquest 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 valiquest 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.

To ensure their safety, we invite users who have not had their application validated via the **VALIQUEST** 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**

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 establishes 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.

France
+33 (0) 2 32 09 55 80 | ventes@erlab.net

United States
+1 800-964-4434 | info@erlab.com

China
+86 (0) 512 5781 4085 | sales.china@erlab.com.cn

Spain
+34 936 732 474 | export.south@erlab.net

Germany
0800 330 47 31 | export.north@erlab.net

United Kingdom
+44 (0) 1722 341 940 | export.north@erlab.net

Italy
+39 (0) 2 89 00 771 | export.south@erlab.net

erlab You can breathe. usa.erlab.com