



 **WALL FARM**
intelligent agriculture

The most **advanced automation technology** for your plants.



Index:

1.0 - Components

2.0 - Set-up

2.6 - Switching on the general panel

3.0 - Disassembly of the tank

4.0 - Maintenance and water replacement

5.0 - Extraordinary maintenance

Product Description:

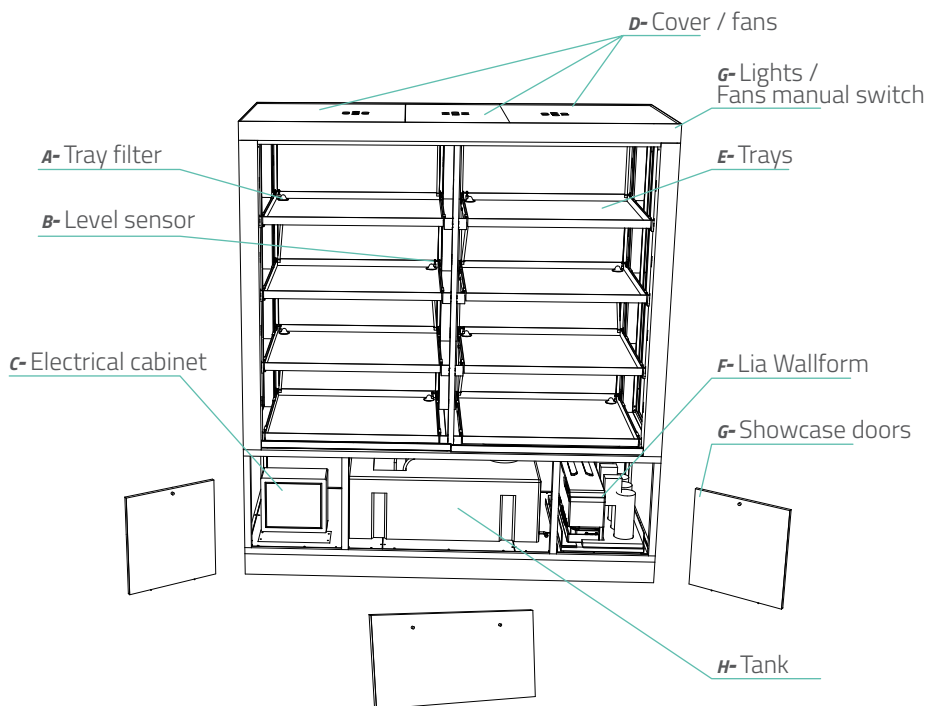
COMPLETE HYDROPONIC CULTIVATION SYSTEM allows you to grow any type of plant inside, optimizing yields thanks to LIA. The growth unit was created in full awareness of the spaces in which it is to be placed, it is suitable for commercial activities as well as for use at home. The showcase was built respecting high quality and sustainability protocols. Its design is captivating and it is the largest in the family of our hydroponic growing products.

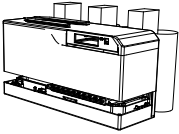
LIA is the control unit that runs all the hydroponic operations automatically. Thanks to LIA there is no need to have a specialized grower to run any kind of hydroponic system, no matter the size.

LIA needs just to be connected to the WiFi and it's ready to go.

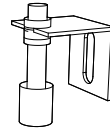
Have your plants correctly nourished, water pH regulated and pH and nutrient level sensors automatically maintained, cleaned and calibrated.

Replace LIA nutrient bottles monthly and the buffer vials every six months and you will get the best performance.

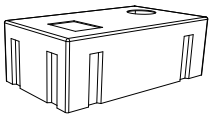




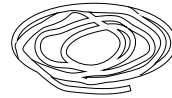
F- Lia Wallform



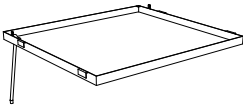
B- Level Sensor
x8 pcs



H- Tank:
lt 140



Water pipe



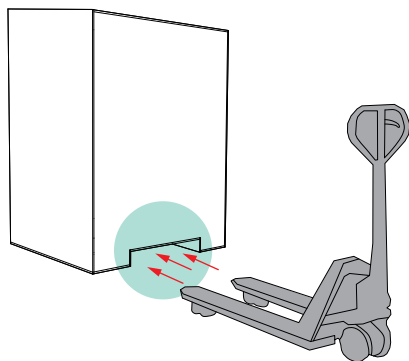
E- Trays:
x8 pcs



A- Tray filter:
x8 pcs

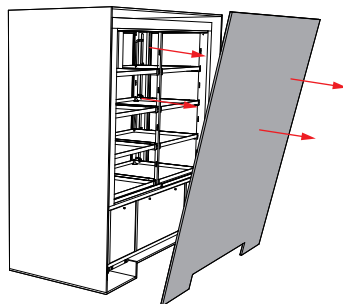
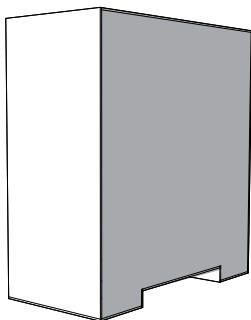
1

Move the box using a trans-pallet.



2

Open the box by the front side.



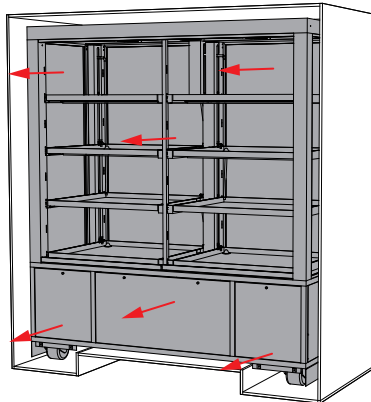
3

Unlock wheels.

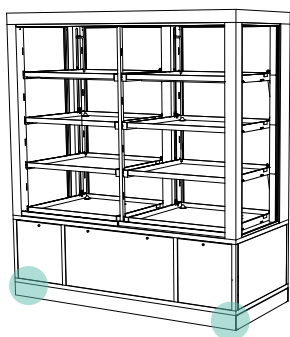


4

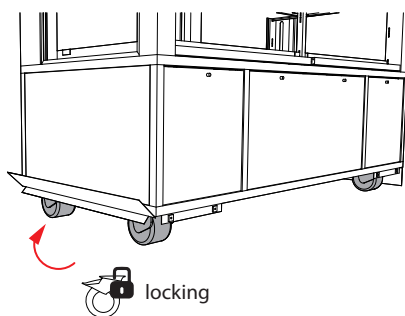
Extract the grow unit and remove the box.



5

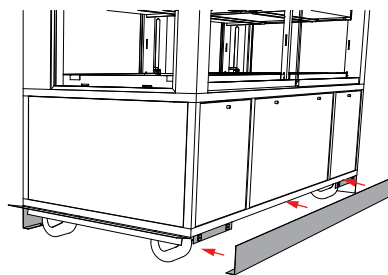
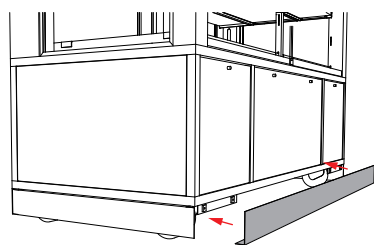


Lock wheels .

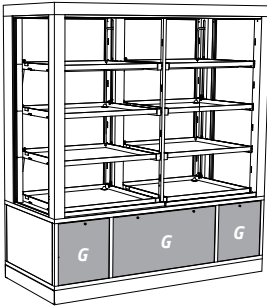


6

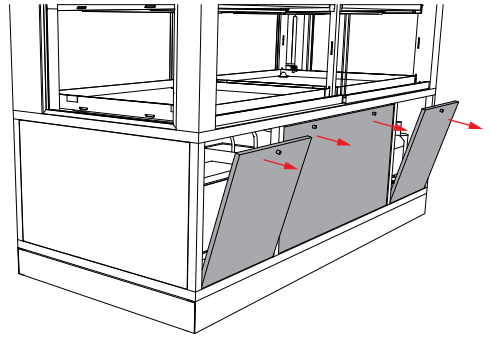
Place the bottom carter.



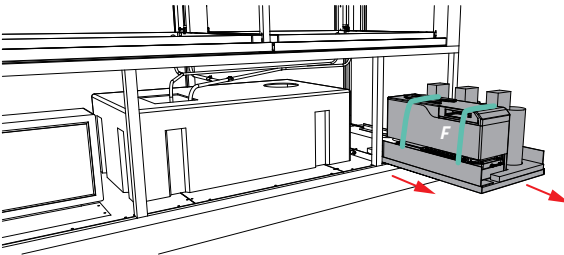
7



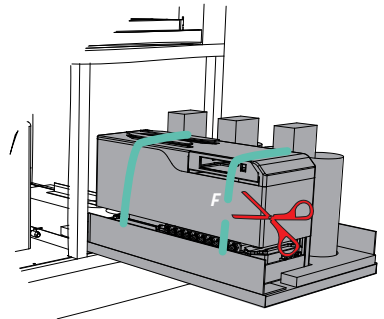
Open the technical compartment.



8



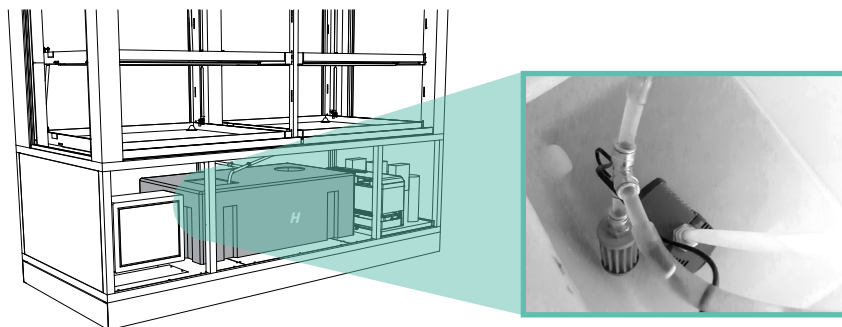
Remove LIA's security seals.



*IMPORTANT NOTE:
LIA set-up to be found on User Manual 2.*

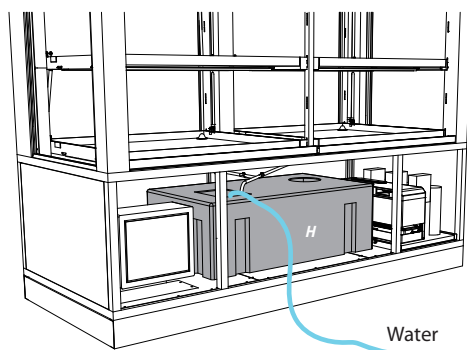
9

Check correct positioning of submersible pump.



10

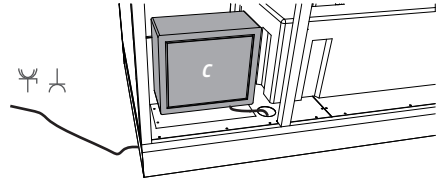
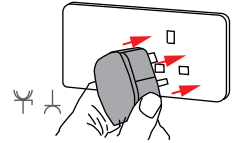
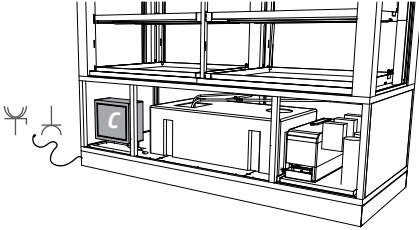
Fill the main tank with water.



IMPORTANT NOTE:
Only use tap water and fill the tank with 140lt.

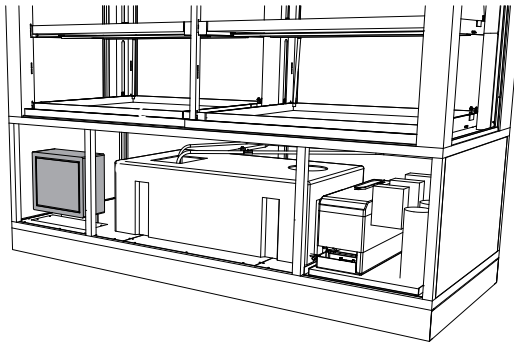
11

Plug in the panel.

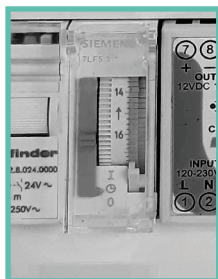
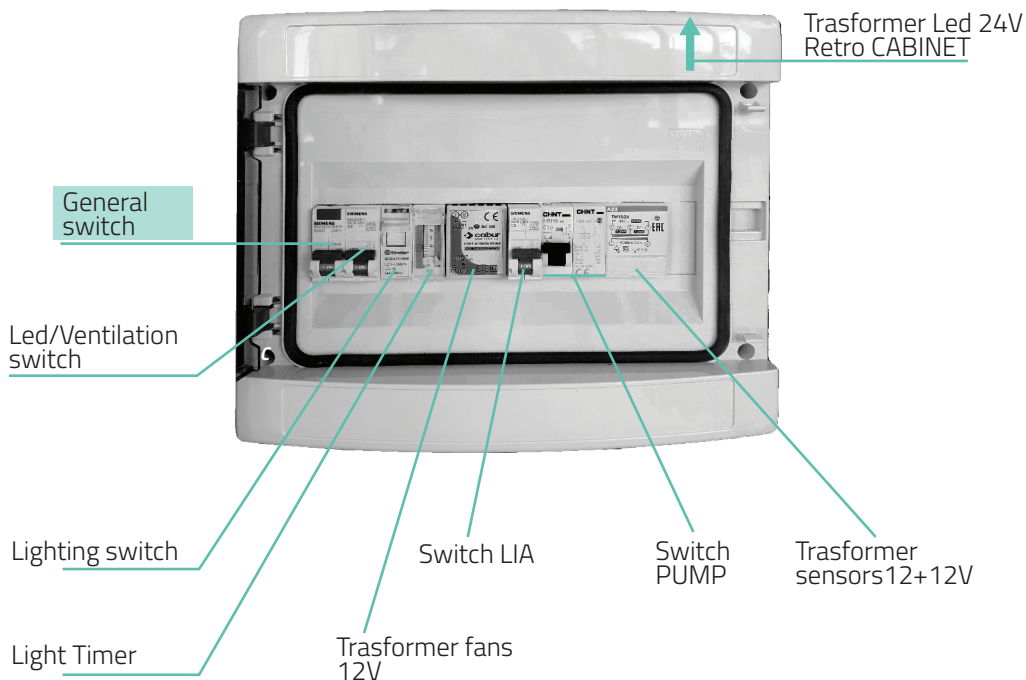


12

Lift the general switch.



C. General electrical panel.



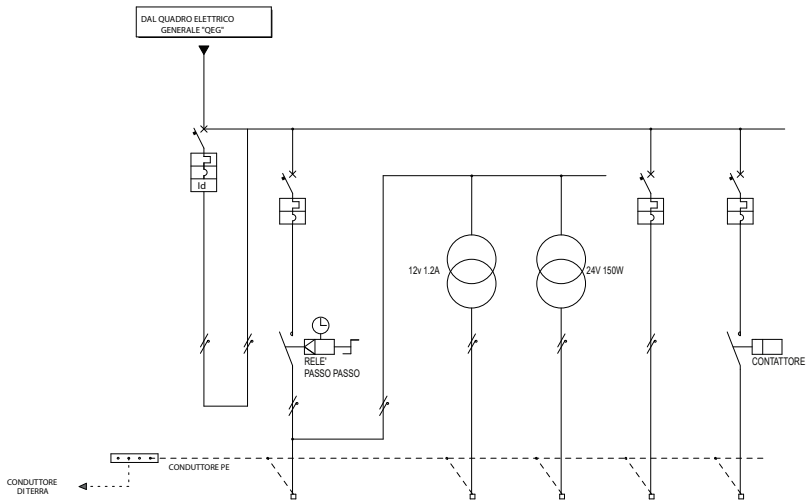
Light Timer settings

Possibility of programming, switching on and off lighting and air ventilation system.

HOW TO SET AUTOMATIC PROGRAM:

Set the current time on the timer for correct switching on and off of the LEDs and the ventilation system.

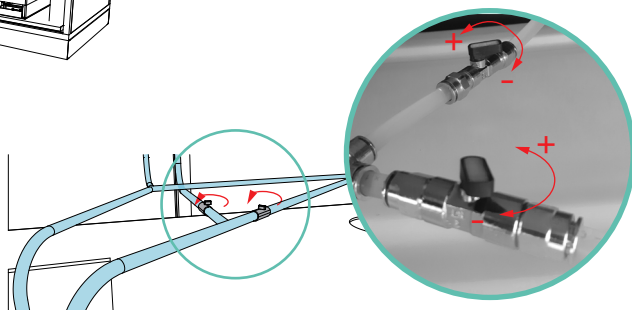
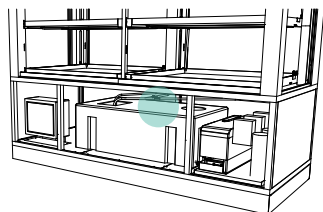
Single-line power diagram.



IDENTE.	(CEI 3-34) SIGLA >>		1	2	3	4	5	6	7
	DEFINIZIONE >>		INTERRUTTORE GENERALE	ALIMENTAZIONE LUCI LED		ALIMENTAZIONE VENTILAZIONE	ALIMENTAZIONE STIP LED	ALIMENTAZIONE FM	ALIMENTAZIONE POMPA ACQUA
	UNITA' DI MISURA								
CARICO	POTENZA NOMINALE	kW	-	-	-	-	-	-	-
	CORRENTE DI IMPIEGO	A	-	-	-	-	-	-	-
	FATTI DI CONTEMPORANEITA'	-	-	-	-	-	-	-	-
INTERRUTTORE	MODELLO/TIPO	-	MT-ID	MT	-	-	-	MT	MT
	POLARITA'	-	2P	1P	-	-	-	1P+N	1P+N
	CORRENTE NOMINALE	A	10	6	-	-	-	6	10
	TARATURA Ith/m	A	10 CURVA -AC-	6 CURVA -AC-	-	-	-	6 CURVA -C-	10 CURVA -C-
	TARATURA DIFFERENZIALE	A	0.03	-	-	-	-	-	-
FUSIBILI	POT.INT. (23-3 Ics)	kA	4.5	4.5	-	-	-	4.5	4.5
	POLARITA'	-	-	-	-	-	-	-	-
	PORTATA PORTAFUSIBILI	A	-	-	-	-	-	-	-
	TIPO FUSIBILI	-	-	-	-	-	-	-	-
	CORRENTE CONVEN.INTERV.	A	-	-	-	-	-	-	-
CONT.	MARCA/(TIPO)	-	-	-	-	-	-	-	-
	POLARITA'	-	-	-	-	-	-	-	-
	PRESTAZIONI	kW	-	-	-	-	-	-	-
TRAFO	POTENZA	VA	-	-	-	-	-	-	-
	TENSIONE PRIMARIA	V	-	-	-	-	-	-	-
	TENSIONE SECONDARIA	V	-	-	-	-	-	-	-
CAVI	TIPO	-	-	FG160M16	-	FG160M16	FG160M16	FG160M16	FG160M16
	SEZIONE FASE / NEUTRO	mm ²	162.5	4x(1x4)	-	1x(2x4)	1x(2x2.5)	1x(2x2.5)	1x(2x2.5)
	SEZIONE TERRA	mm ²	1x2.5	1x4	-	1x4	1x4	1x2.5	1x2.5
	PORTATA DEL CAVO Iz	A	-	-	-	-	-	-	-
MORS.	CONDUITTORE	-	L1	N	L1	N	L1	N	L1
	NUMERAZIONE	-							
LUNGHEZZA LINEA ELETTRICA		m	-	-	-	-	-	-	-
CADUTA DI TENSIONE %		%	-	-	-	-	-	-	-

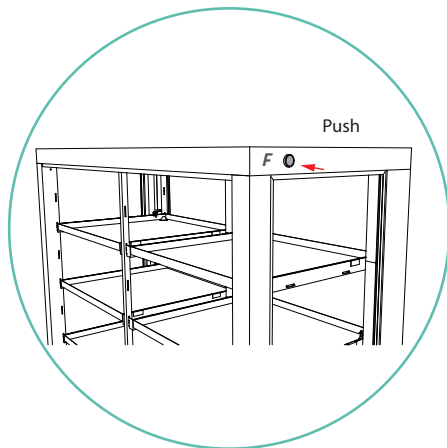
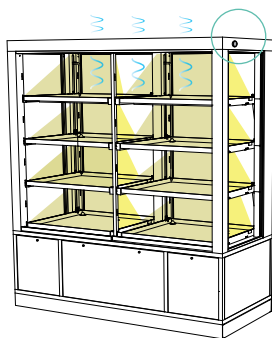
13

Water flow regulation and tanks.



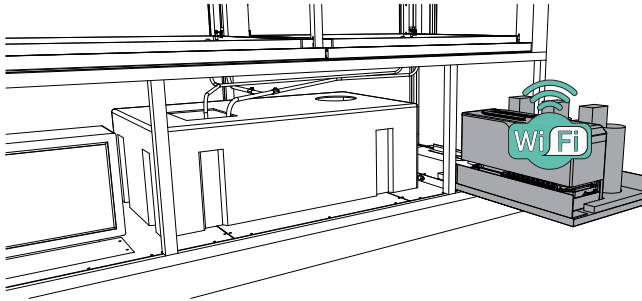
14

Switching on lighting and air ventilation in MANUAL programming.



15

Check Wi-Fi connection.

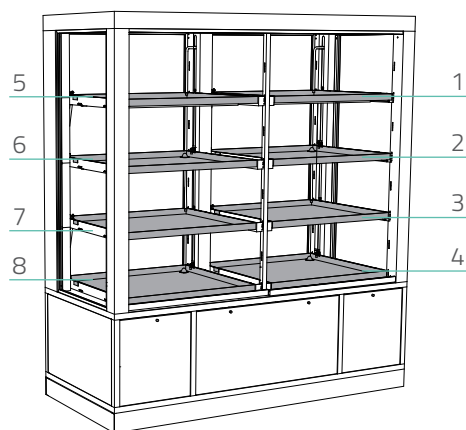


*IMPORTANT NOTE:
Please refer to User Manual 2 to connect LIA to Wi-Fi.*

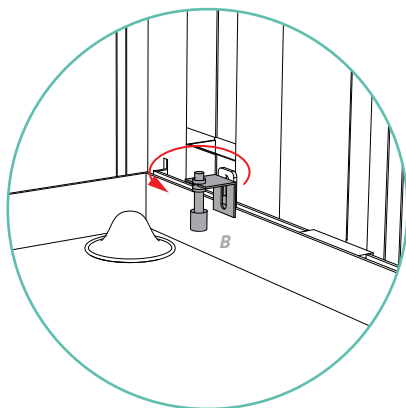
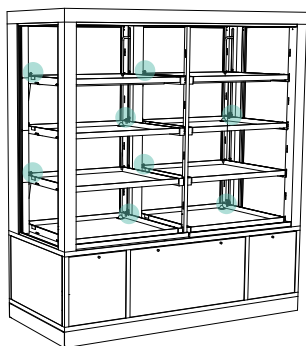
LIA is connected to Wi-Fi correctly when LIA's LED is green and briefly turns blue every 60 seconds.

If LIA's LED is blue and briefly turns green, either the network is not working or the password is not correct.

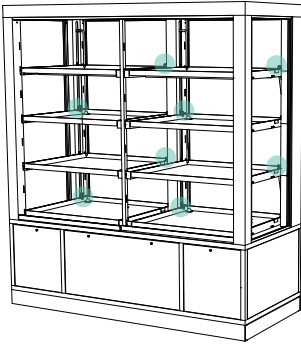
Disassembly of the tank.



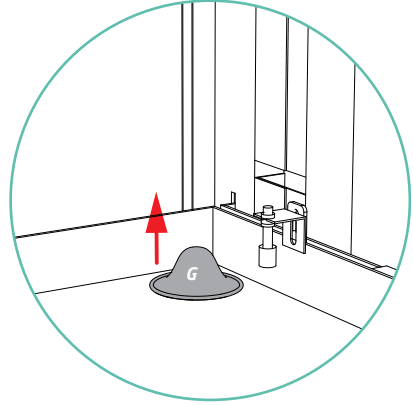
1 Disassembly of the safety sensor.



2

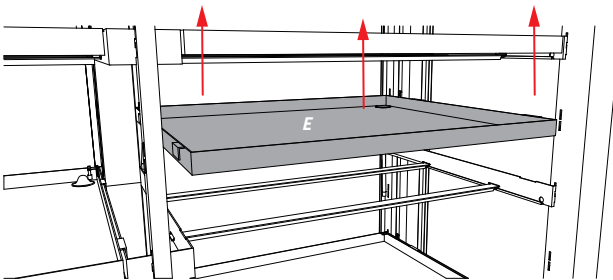


Tank filter removal.

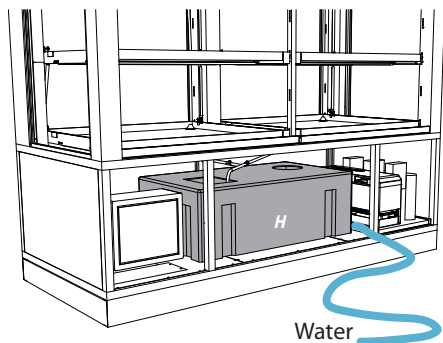


3

Disassembly of the tank.

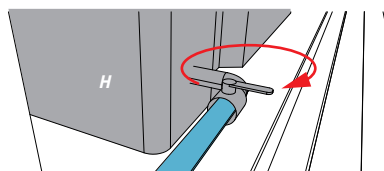


1



Water

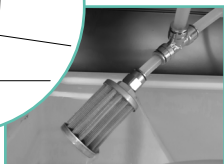
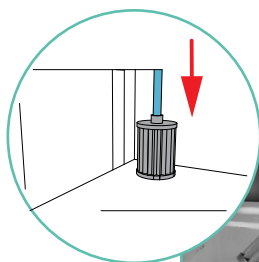
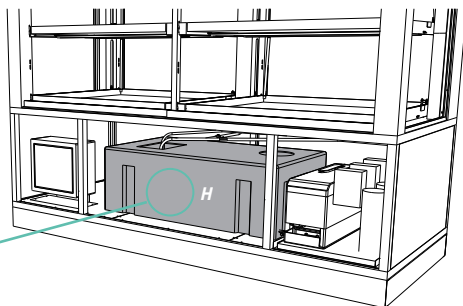
Tank water drain.



CAUTION:
Only use the offload pipe to offload water from
the tank.

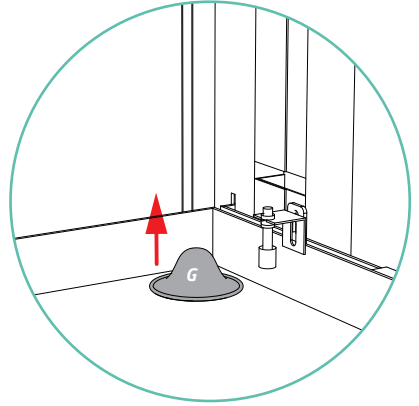
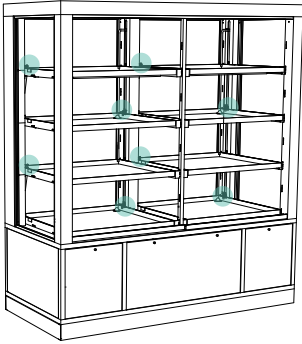
2

Tank filter cleaning.



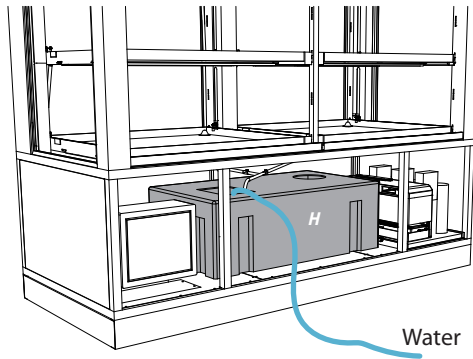
3

Tank filter cleaning.

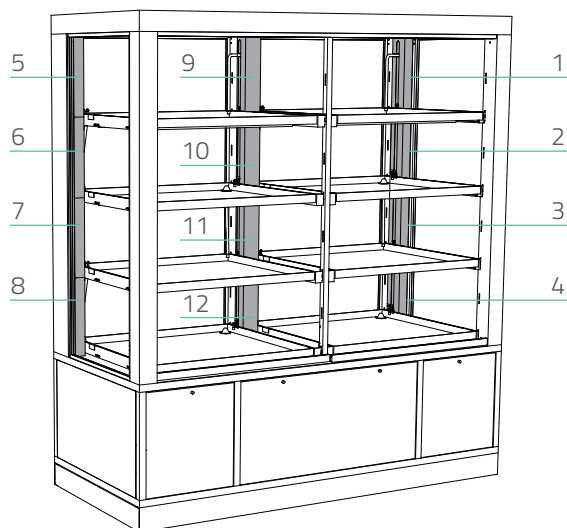


4

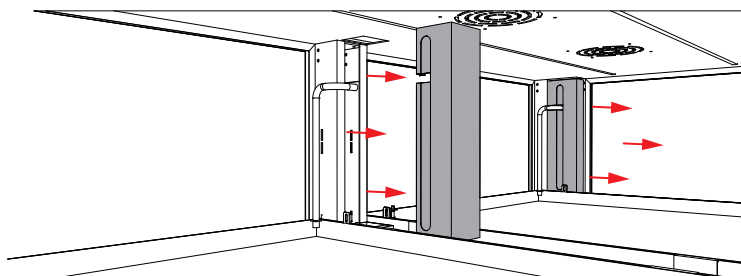
Adding water to the tank.



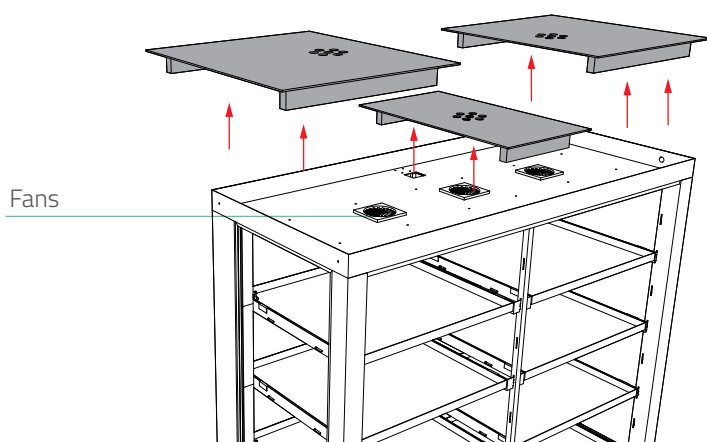
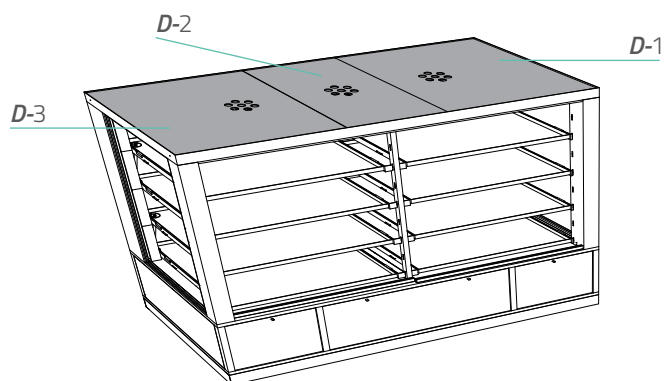
Hydraulic system inspection.



Removable carter system



Maintenance system of ventilation.





SA GA Lab:

As part of the design of a sales point, it is necessary to respond to the specific needs that arise from the customer's requests and experiences, with functional and innovative ideas and solutions.

SA GA Lab was born with the aim of developing and enhancing these ideas and experiences with the study, prototyping and production of customized display equipment.

It is an activity that, in many cases, plays a fundamental role in giving shape and personality to a shop, going beyond the level of aesthetic and architectural choices, to act in depth on commercial dynamics, through the use of original sales techniques, innovative and customized display systems that strongly characterize the point of sale.

SA GA lab participates in this new life experiment, we test with partners and customers a "new normal" that can meet the requirements that the world requires of us such as:

- Sustainability
- Sensitivity
- Automation

Letting the shopping experience live both in physical and digital space, Phigital!

SA GA design:

We design custom-made environments, from the concept to the systems, taking care of every detail through the indispensable tools of creativity and comparison, the search for taste and an eye to the most representative trends of contemporaneity. We use advanced 3D graphic representation software to offer our customers a realistic visualization of the ideas and materials used in the project.

SA GA coordination:

We take care of the coordination of all project phases with professional and expert technical figures who guide the operational phase, constantly checking the quality of the work performed and compliance with the established times and budget. A pool of qualified professionals takes care of the completion of administrative procedures, structural calculations, tests and "as built" documentation at the end of the works.

SA GA installation:

We carry out the adaptation building works, the installation of technological systems, the assembly of display equipment and furnishings, taking care of the preparation in every detail, with the use of qualified and reliable personnel. Our solid experience allows us to operate even in those situations, such as shopping centers and city centers, where flexibility and absolute punctuality are required.



Contact us



+39 (0) 861 76981



info@sagacontract.it



www.sagacontract.it/en/





The most **advanced automation technology** for your plants.

Product Description:

LIA is a control unit for the automation of soil-less systems. LIA is divided in four modules, each of them performing a specific task in the process of plant growth. Thanks to LIA it's now possible to automate any hydroponic or aeroponic system just by inserting its suction pipe in the main water tank of the structure and without cleaning and calibrating the sensors.

LIA is flexible and intuitive, and can guarantee precise and professional results, and an unlimited and customizable database of growing recipes.

Specs:

LIA_analysis:

John Guest 1/4" Connector:
- 1 Main line

John Guest 4mm Connectors:
- 12 Dosage Module

Jack 3.5mm Female:
- power source 12v

Wi-Fi:
- IEEE 802.11 b/g/n wireless networking

DIN Connectors:
- 2 Female connectors (5pin)

Water pumps:
- 2 high quality diaphragm pumps

Self cleaning and self calibrating
pH and Conductivity sensors.

Electrical and Operating requirements

Line voltage: 12v DC
Frequency: 50Hz to 60Hz, single phase.
Operating temperature: 3° to 40° C

Size: 450x250x150mm

Weight: 1,5kg

Dosing module:

Pipes:
- 4 Dosage connections to Lia

Peristaltic pumps:
- 4

DIN Connector:
- 2 female connector (5pin)

Size: 370x110x80mm

Weight: 0,6 Kg

Powered by analysis module:

Line voltage: 12v DC
Frequency: 50Hz to 60Hz, single phase.
Operating temperature: 3° to 40° C



Auto
Calibration
PH - EC

Auto
Measure
PH - EC

Nutrient
Auto
Dosing

PH +/-
Auto
Dosing

From 1
to 10.000
plants

Share
your
results



INTUITIVE & SMART

A simple menu to access the functions and set up your complementary devices.



PRECISE MONITORING

Check plants conditions with your smartphone or web app.



PLANTS CATALOGUE

Choose the recipes from our catalogue or create and implement your own recipes.



UNIVERSAL SOLUTION

Our product works with both tiny grow-boxes and large plantation farms.



EASY INSTALLATION

Plug the cables, push the ON button and enjoy your cultivation.



FORGET MAINTENANCE

No maintenance required. We guarantee 100% automation.



Index:

1.0 - Let's get started!

1.1 - What's inside

1.2 - Features of the components

1.3 - Guidelines for the set-up

2.1 - Connecting Wi-Fi LIA

2.2 - Connecting Wi-Fi Raspberry

2.3 - Turning LIA on

2.4 - Notification and Functionalities (Button and Led signals)

- Maintenance

2.5 - Connecting and how to change the Dosers

2.6 - Open Lia to change the Buffers

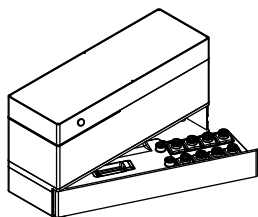
2.6 - Inserting the bottle buffers

- Contacts

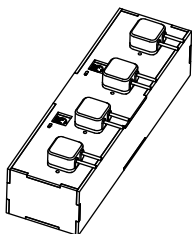


Let's get started!

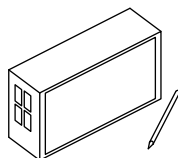
What's inside



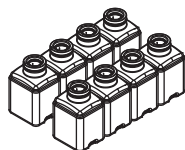
LIA_analysis (x1) ●



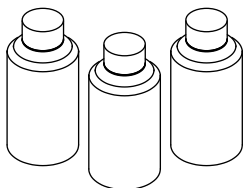
Dosing Module (x3) ●



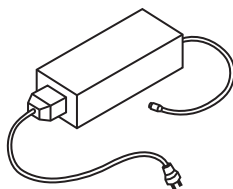
Raspberry (x1) ●



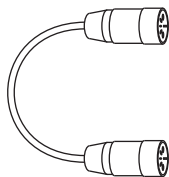
Calibration bottles (x1) ●



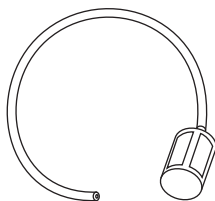
Nutrient, PK and PH-refills (x3) ●



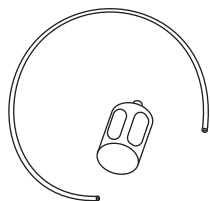
Power supply (x1) ●



DIN cable (x1 / 1 mt) ●

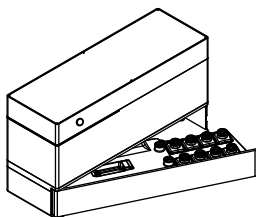


6mm water pipe with filter (x1 / 1,5 mt) ●



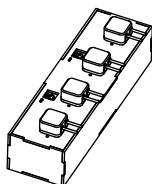
Dosing pipe 4mm (x3 / 0,5 mt) ●

Features of the components



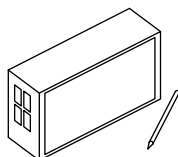
● LIA_analysis:

The analysis module will analyze the pH, conductivity and temperature of the nutrient solution. Furthermore, it will manage the other modules, like Dosing Module, Smart Plug or 10x Manifold.



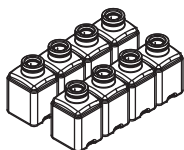
● Dosing Module:

The Dosing Module will receive inputs from the Analysis module and calculate and dispense the appropriate amount of nutrients and pH correction liquids. The Dosing module implements peristaltic pumps and NFC readers.



● Raspberry

It will be used only for this first installation, to allow us to update and check the serial and programming of the product. We will ask you to connect it to your Wi-Fi and keep it attached to our Lia Analysis.

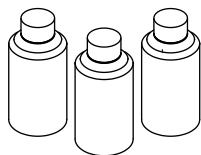


● Calibration bottles:

The calibration bottles are used for the correct maintenance of the probes. They are inserted in the drawer next to the mixing reservoir and they allow LIA to perform the AutoCalibration, AutoCleaning and AutoStorage of the probes so to guarantee always precise results and high durability.

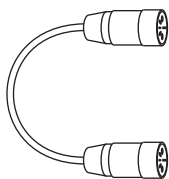


Features of the components



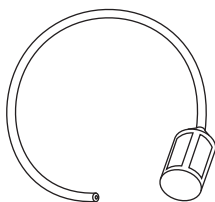
● Refills:

They contain the nutrients and the pH correction liquids.



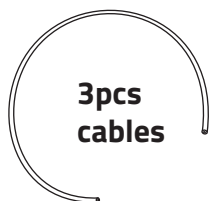
● DIN cable:

5 pins DIN cable. Use it to connect LIA_analysis with the Dosing Module. It will supply the modules and transfer logical inputs to control the peristaltic pumps, the NFC and the water flows.



● 6mm water pipe with filter:

Use it to connect LIA_analysis with the main tank of your system. This pipe implements a water filter to protect LIA from residues. The pipe can be 1,5 to 7 meters long.



**3pcs
cables**

● Dosing pipe 4mm:

These dosing pipes are used to connect the Dosing Module with the Mixing reservoir in the LIA_analysis. The nutrients and pH corrector will pass through these pipes to reach the sample liquid.



1additional filter

Guidelines for the setup



Our product is located in the lower part, looking at it from the front, to the right of the vertical farm.

The dispensers are located on the top of the Analysis module.

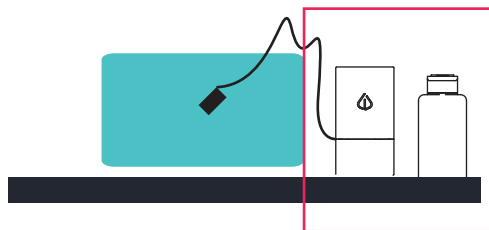
A 6mm tube that takes the water sample is inserted into the tank cap.

A 4mm hose used to take rinse water is always connected inside the tank, both have a filter at the end.

The three nutrient containers contain pH-, PK 13-14, HydroSuperMix from BioNova



WiFi connection required

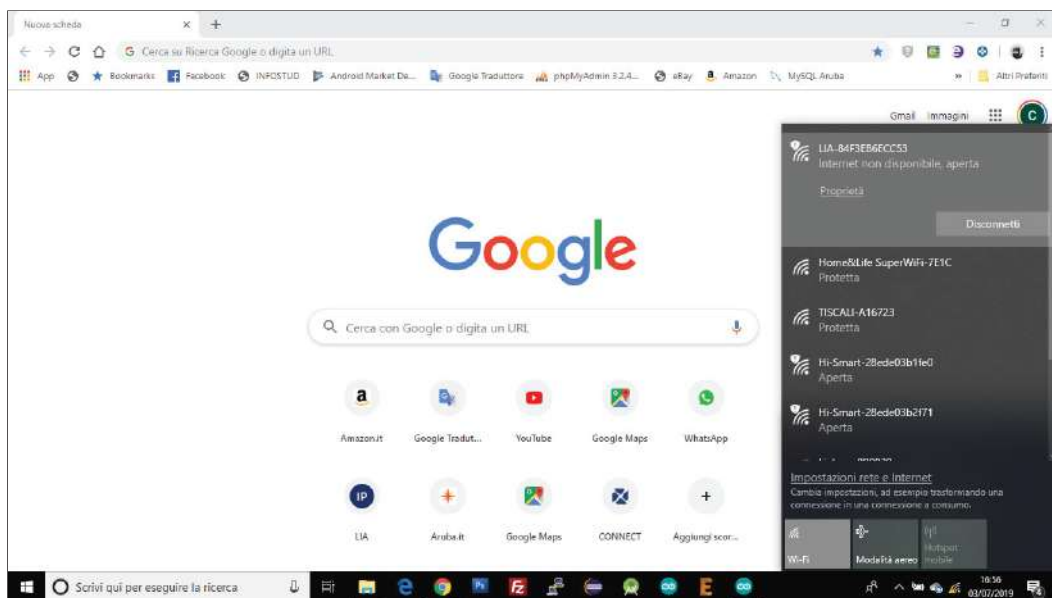


Step 1: Connect the power supply

Step 2: WiFi connection

When the LED is purple, you can connect LIA to set-up its connection with your WiFi router.

Open the WiFi connections panel in the settings of your PC/smartphone and connect it to LIA-xxxxxxx

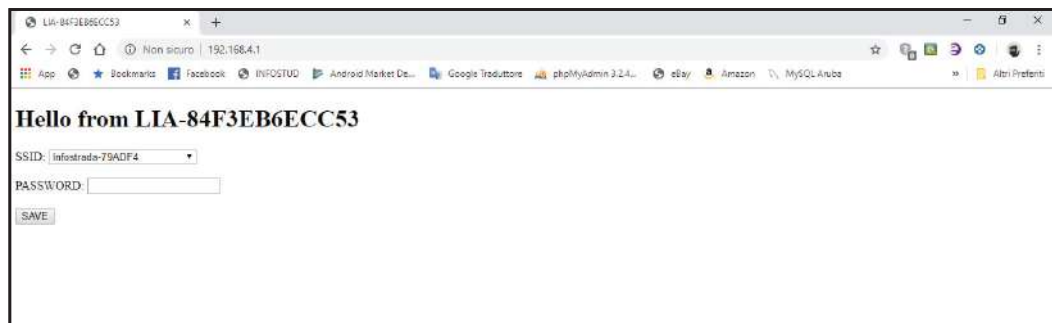


Connecting WiFi



Scan the QR code on LIA and open the browser at the address **192.168.4.1**

Select your SSID and enter password of your WiFi network



LIA is configured correctly.



RASBERRY - WiFi Connection

select the WiFi icon by clicking
on the screen
(it would be recommended to connect
keyboard with USB cable to type
and enter password)





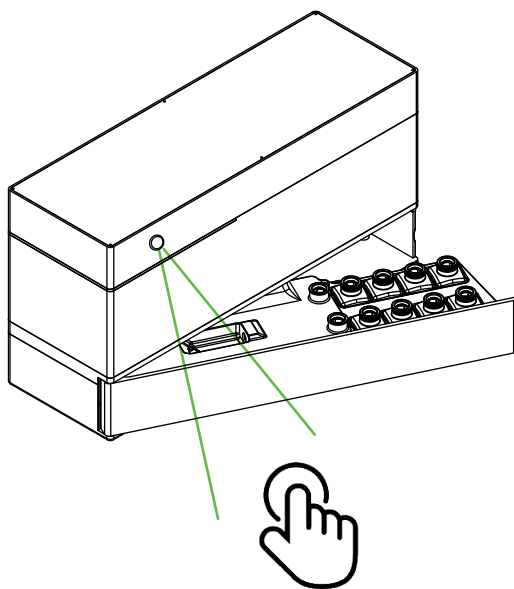
Turning LIA on

Step 3

Once you have completed and connected everything to the WiFi, contact us to activate and set the cycles from the database, we will send you the credentials to be able to view the progress on our management system.

<https://administration.wallfarm.bio/login.php>

For every interaction and activity on Lia
press the button, on the next page there is information on the various modes.





Notifications and functionalities

Button:

LIA implements a button that, if pushed for specific time frames, will perform the following functions:

- **>1 second:** Updates LIA from the server.
- **1 to 3 seconds:** Lifts the probes to allow the extraction of the drawer, and after 10 seconds moves them back down.
- **4 to 10 seconds:** Dosing module pre-load.
- **11 to 15 seconds:** will reset the credentials for the WiFi.
- **16 to 20 seconds:** will empty the mixing reservoir.
- **< 20 seconds:** will start a calibration, analysis and correction cycle.

Acoustic signals and LED colors:

If, for any reason, you need to open the drawer, please follow this procedure:

- 1- Push the central button for **1 to 3 seconds** and wait until the LED becomes white.
- 2- Extract the drawer as long as the LED is white (you have 10 seconds)
- 3- To put the drawer back in, push the central button for **1 to 3 seconds** again.
- 4- When the LED is white, insert the drawer making sure that the pipes won't throttle.
- 5- Wait until the LED turns green again.



Acoustic signals and LED colors:

When you connect the power supply to the analysis module, you will hear an acoustic signal indicating that the system is ON. You will then hear some mechanical noises due to the reset process of the probes.

When the LED is **red**, LIA is working and performing operations.

When the LED is **green**, LIA is in standby and it's ready to start at the established times, or at the push of the central button for >20 seconds.

When the LED is **blue**, the WiFi is turned on and LIA is trying to establish a connection with the server. If the LED is blue for too long (i.e. more than 20 seconds) it means that there is an error with the WiFi connection: check if you typed your WiFi password correctly. If the problem persists, try to reboot LIA (disconnect and reconnect the power supply).

When the LED is **purple**, LIA is in "Access Point" mode, and you can connect to it through your computer's or smartphone's browser to set up your WiFi network. Access Point mode happens mostly when LIA is set up for the first time. Once the connection to your WiFi is set up, you can reset the access credentials at any time (for example if you change your WiFi password) and you can repeat this operation.

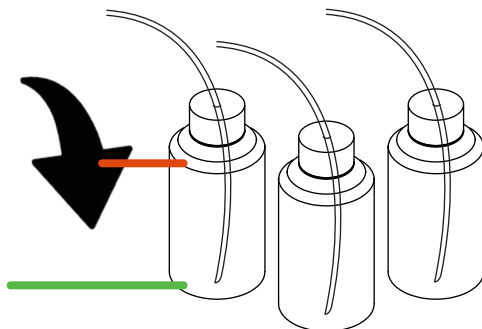
When the LED is **white**, LIA is in "drawer extraction mode": you can now extract the drawer safely (within 10 seconds).

When the LED is **red and blinking**, it means that the mechanics of LIA are jammed. Please follow our unjamming procedure or contact our Customer Service.

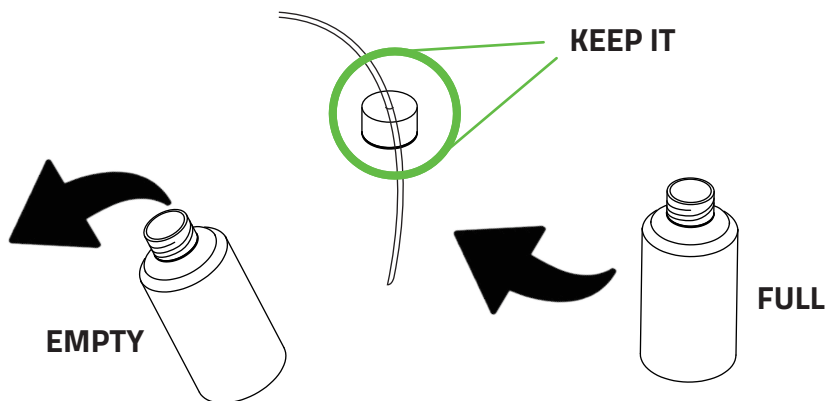


Connecting and how to change Dosers

Push the dosing tube until the bottom.

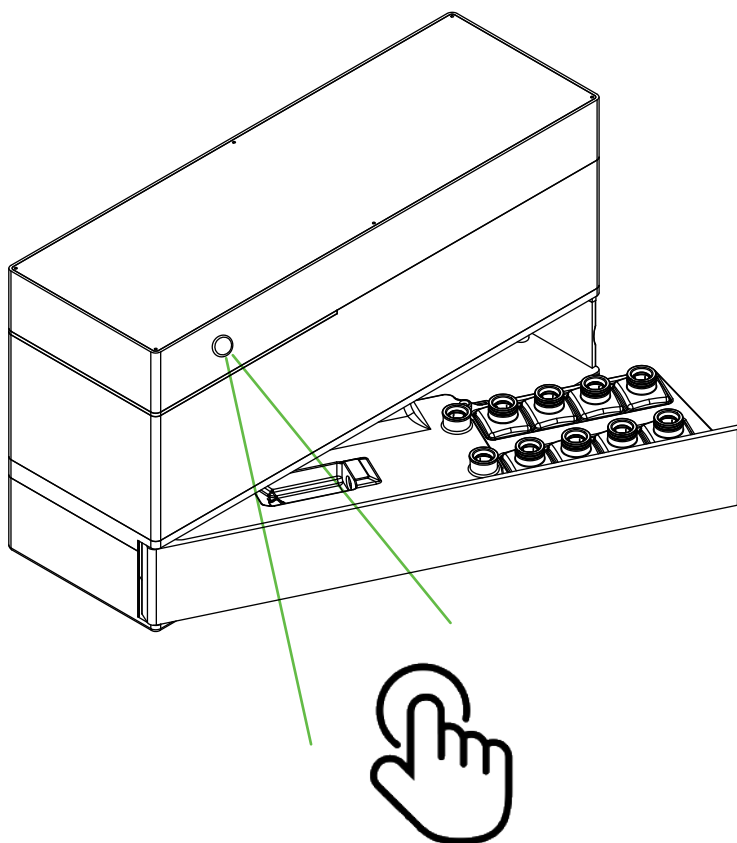


When replacing the dispensers, keep the cap with the tube already inserted



Open LIA to change the buffers

Push the button for 3 seconds, wait for the click, then pull.

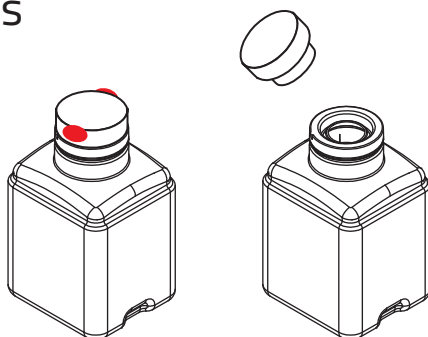




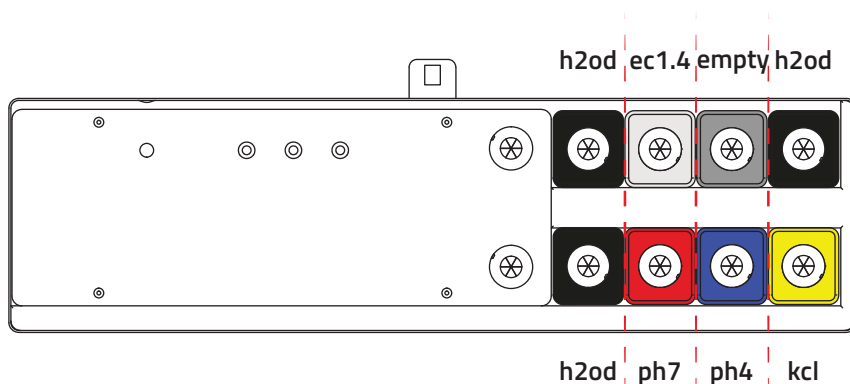
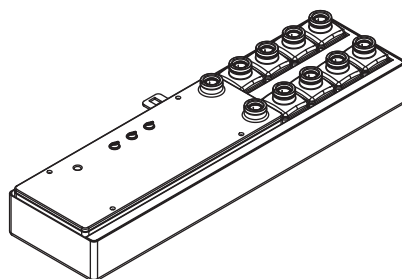
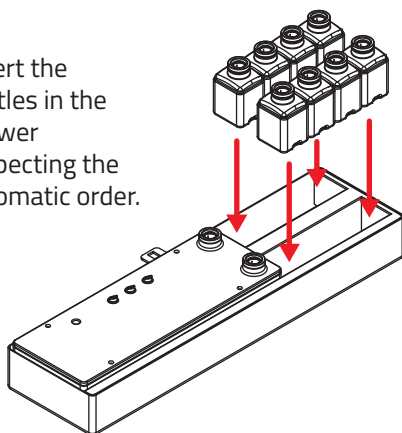
Maintenance

Inserting the buffer bottles

Remove the overcaps over the eight calibration, cleaning and maintenance bottles.
Don't remove the green valves!




Insert the bottles in the drawer respecting the chromatic order.





Contact us

Start automating your growing systems
with LIA now.

 +39 (0) 334 7891839

 info@wallfarm.bio

 www.wallfarm.bio

