StaRplast

GRAY WATER REUSE

biogrigio Home

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Gray water treatment (soapy waters) **to reutilize it for non potabile purposes such as: flush toilet, garden and more.**

Reuse gray waters in your home in total autonomy, ***TODAY YOU CAN DO IT****.*

WATER EMERGENCY

Consuming less drinking water is a goal that we should all set for ourselves in daily life: avoiding waste of common water resources is of fundamental importance for protecting health and the environment in which we live.

STARPLAST'S SOLUTION

Biogrigio Home is a real response to the water shortage that afflicts all countries in the world. This system offers the possibility of completely reusing gray water (soapy water) for non-potable use: toilet flushing, gardening, car washing and more, offering a concrete saving in drinking water consumption of 50%

INSTALLATION

Biogrigio Home can be installed in all newly built homes and in existing ones. Talk to your trusted designer to find out the advantages you can obtain.

WATER EMERGENCY

WATER IS OUR FUTURE

Let's avoid wasting drinking water. How?

The small daily water saving actions are well known to everyone: turning off unused taps, checking for leaks, making conscious use of fully loaded washing machines and dishwashers, choosing high energy class appliances, always preferring the shower to the bath and more.

Today it is also possible to adopt other beneficial techniques such as gray water recovery.

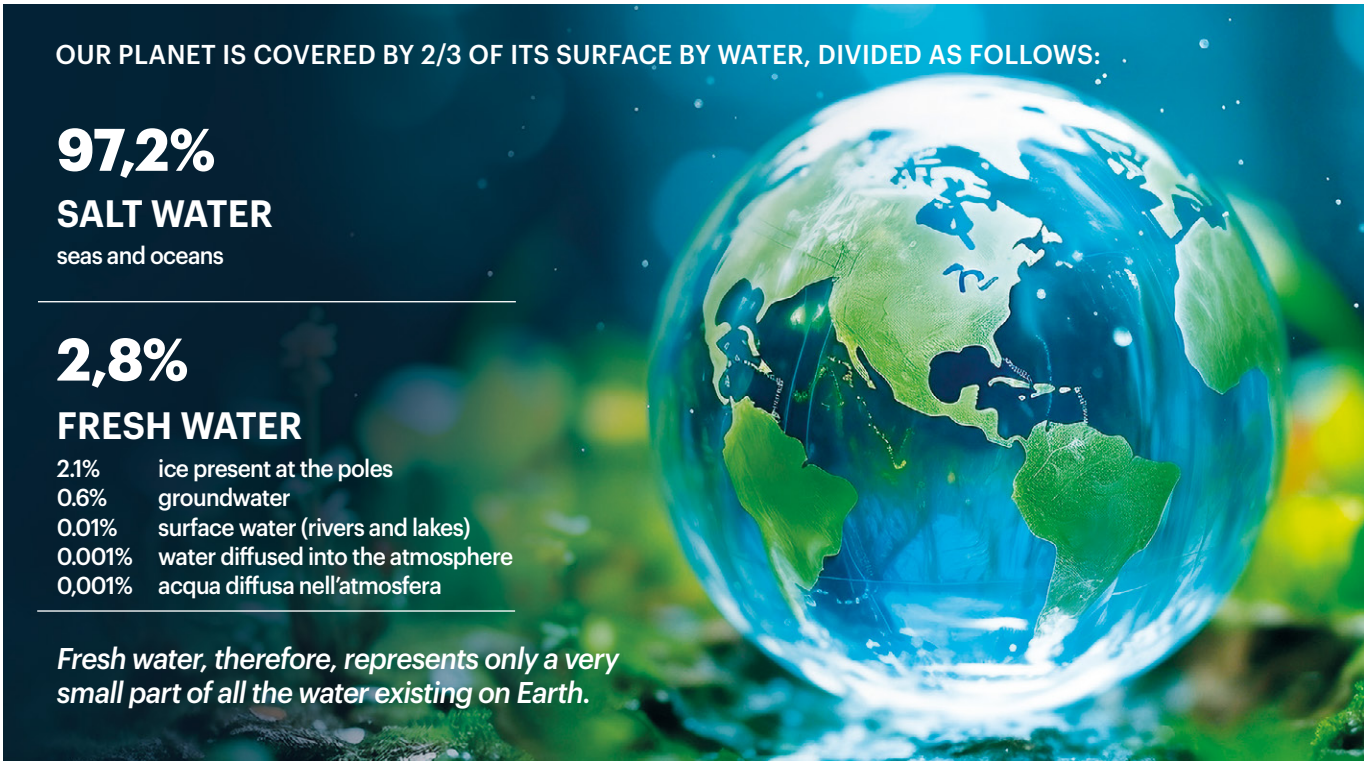
The quantities of fresh water available on our planet, the continuous water stress to which it is subjected and climate changes require us to provide immediate responses to everyone's needs.

Numbers that make us reflect

1,5°C maximum limit on global warming to contain the most devastating damage caused by a rise in temperatures

55% minimum EU target of net reduction of greenhouse gases by 2030, not to exceed the threshold of 1.5°C

12,85% rate of arctic ice decline per decade



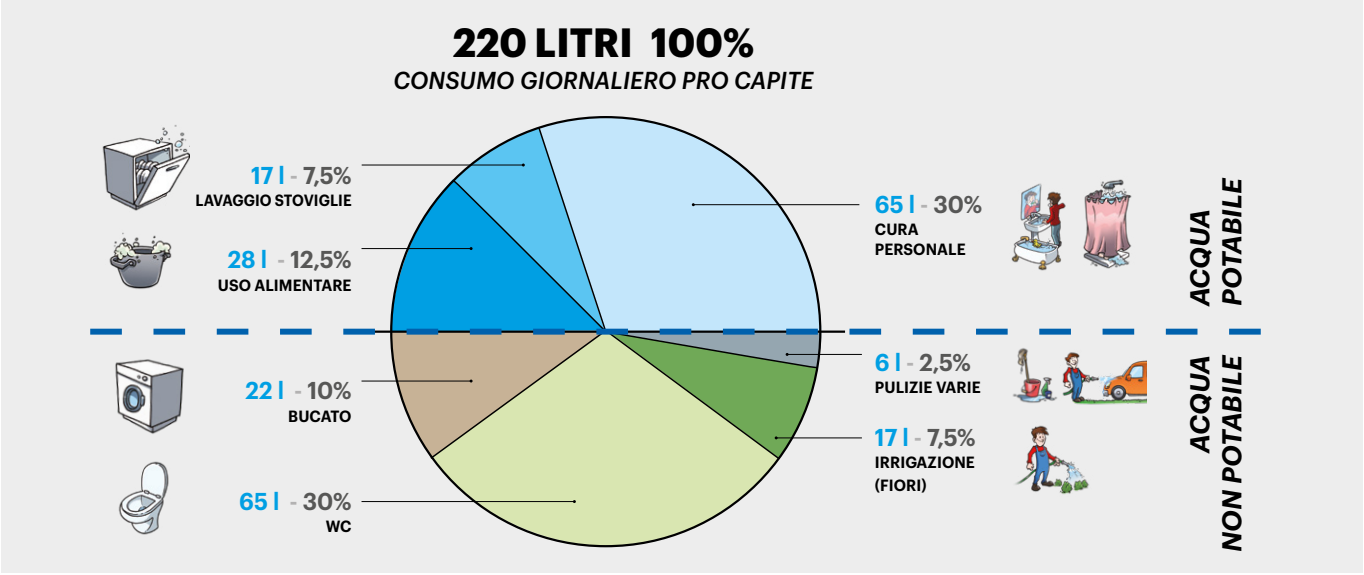
STARPLAST AND **SUSTAINABILITY**

On 25 September 2015, 193 member countries of the United Nations drafted a Sustainable Development program divided into 17 objectives.

It is a **program of action for people, planet and prosperity.**

Water is the protagonist in some of these objectives.
OBJECTIVE 6 is entitled "Ensure the availability and sustainable management of water and sanitation facilities for all"

The statistical data of daily water consumption per capita within a home stands at 220 litres/person x day divided as follows:



From the data reported in the table it appears that at least 50% of daily consumption per capita can be saved by using non-potable water.

This saving contributes to collective benefits such as:

POTABILIZATION	- Less water to purify - Less water to distribute - Distribution energy savings
OVERLOAD OF THE NETWORKS	- Reduction of flow rates in distribution networks - Avoid strengthening public networks
DECREASE IN DISCHARGE FLOW RATE	- Savings in terms of sewage purification
QUALITY OF DRINKING WATER	- Consequence of savings on drinking water e on distribution means greater water quality

STARPLAST'S SOLUTION

LET'S GIVE WATER A SECOND LIFE

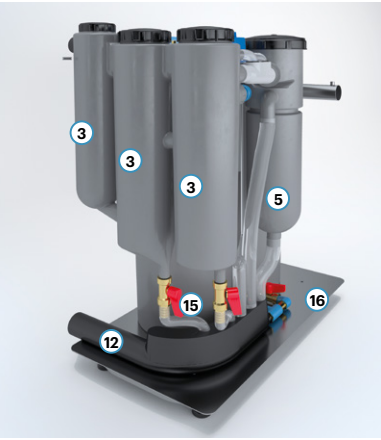
thanks to the idea of the new gray water recovery system, directly installed in your home, this system allows you to recover water from sinks and showers by reusing it for non-potable purposes such as: irrigation, cleaning, toilets, etc

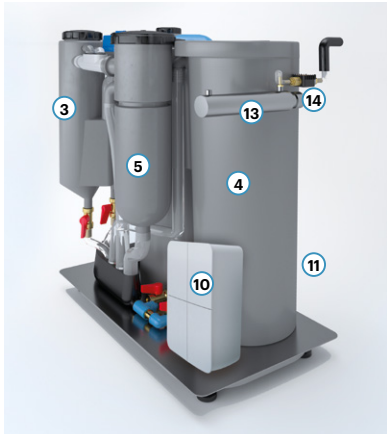
biogrigio Home

ADVANTAGES

- WATER AND ENERGY SAVING (TO PROTECT THE ENVIRONMENT)
- COMPACT UNIT READY TO USE (PLUG&PLAY)
- FULLY AUTOMATIC
- NO CHEMICALS USED
- SELF-CLEANING
- LOW ENERGY CONSUMPTION
- 24/7 PERFORMANCE MONITORING

WHAT DOES IT CONSIST OF?





LEGEND

1 Purified water accumulation tank for reuse
2 Lid
3 Primary treatment consisting of three tanks, with PVC inlet diameter 60 mm
4 Secondary treatment: (a) oxidation (b) ultrafiltrat
5 Tank with bag filter,
6 Valve with normally open actuator, for secondary treatment supply
7 Diaphragm compressor
8 Air solenoid valves
9 60 mm diameter supply manifold bag filter
10 Electrical panel with PLC
11 Submersible pump for supplying utilities
12 Total exhaust manifold diameter 80 mm
13 UV disinfection lamp
14 Digital litre-counter
15 Total exhaust valve group
16 Sheet metal base
17 Aluminum panel with display
18 Inspectable door

HOW DOES IT WORK?

The Biogrigo Home system operates in a very simple manner, divided into three macro-phases:

Ist PHASE

It allows the separation the water coming from the sink drains inside the bathrooms by separating solid and light bodies (hair in particular), as described below:

- **Entrance (A) of gray waters**
- the solid bodies sediment at the bottom of the 3 separation tanks while the light ones (hair or other) remain on the surface;
- periodically, autonomously, the program cleans the tanks from sediment and hair by pouring them into the drain tank B, the latter contains a specific bag filter, which retains all the impurities and allows the water to pass through it and reach **the drain collector (C)** placed on the bottom of the system;
- an internal device from the drain tank will indicate the need to clean or replace the filter at a very low cost.

IInd PHASE

It allows the execution of the biological treatment of waste water through insufflation of **air (D)** and then move on to **membrane ultrafiltration (E)**, in the following system:

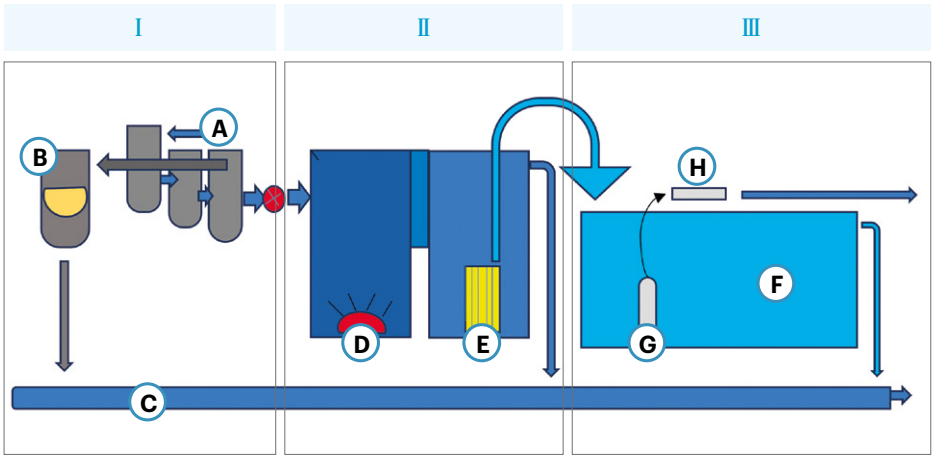
- Wastewater oxygenation starts a biological process to transform substances into pollutants simple substances;
- in the communicating tank, the wastewater passes through the ultrafiltration membrane and is sent to the containment tank by suction water (F).

IIIrd PHASE

Inside the tank that constitutes the body of the Biogrigo Home plant, the **purified water (F)** ready for use for non-drinking purposes via the pressurization pump (G); the same positioned inside the tank starts independently at the opening of each use.
The water, before entering into the mains pipes, passes through a **UV lamp (H)** that guarantees sanitation. The excess water, compared to the volume of use, is sent to the exhaust manifold (C).

SYSTEM CONTROL

The **Biogrigio Home** plant is equipped with a monitor control system, installed on board the machine, in which the data of water recovery, management and general operation of the plant can be displayed.
A dedicated smartphone application returns the same data as the viewer.



ORDINARY MAINTENANCE

- the removal of hair and sediment occurs automatically;
- for cleaning and replacing the bag filter, the system returns a maintenance notice.

EXTRAORDINARY MAINTENANCE

- to be performed by a specialist once a year;
- the ultrafiltration membrane must be extracted at least once a year to carry out a cleaning with a jet of running water.

It is important that during this operation the membrane does not remain out of the water for too long.

OPTIMIZE YOUR SAVINGS

If the recovered water is greater than the one you use, pipe it into a rainwater recovery system “BIOBLU” Starplast.

INSTALLATION

CIVIL HOUSINGS:

- NEW CONSTRUCTION
- ALREADY EXISTING

It is essential that the thermotechnical designer provides a double line of hydraulic pipes, one dedicated to distribution of drinking water and a second dedicated to non-drinking water.

Conventionally, the distinctive colors of the pipes inside homes are:

- cold drinking water — blue
- hot drinking water — red
- gas *(kitchen heating)* — yellow
- waste water — gray
- **non-potable water** — green

The NON-DRINKING water pipe (gereen colour) must therefore reach the following points of use:

toilet cassette

laundry

garage
(car wash)

outdoor garden

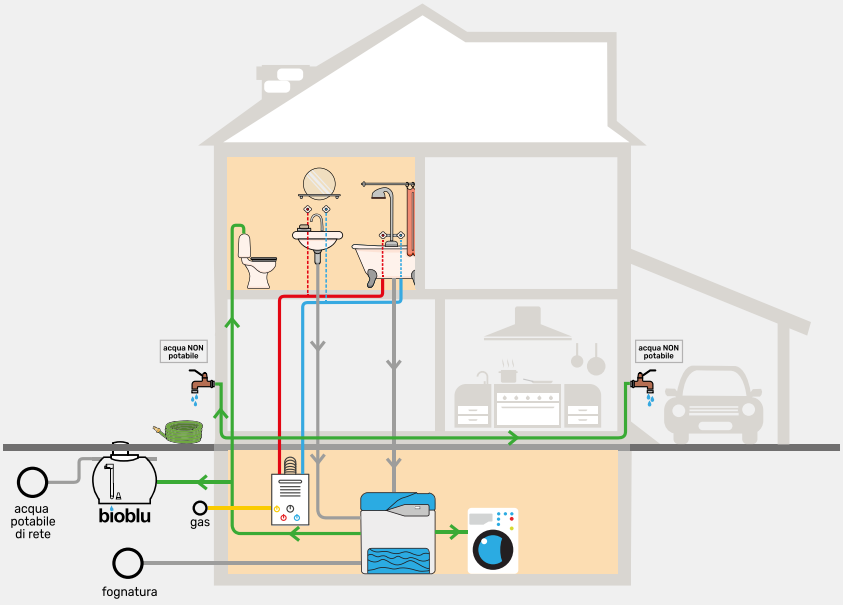
NEW CONSTRUCTION

In the case of new residential construction, the works consist of the installation of an additional pipe of a specific colour (**green**) dedicated to the distribution of non-potable water. Therefore, the additional cost compared to normal plumbing turns out to be quite low. For waste pipes, all designers now adopt separate ducting according to the type of origin of use, such as:

- draining **blond water** from the kitchens *(intended for a grease separator)*
- discharge of soapy water from bathrooms **gray water** *(destined for a second grease separator)*
- WC **waste water** drainage *(destinate a vasca Imhoff)*

It will therefore be necessary to converge the gray water waste pipe in a defined point of our new home, corresponding to the positioning point of the ***Biogrigio Home*** plant.

The exhaust pipe must, however, continue the path outside to connect directly to the biological plant if provided or sewerage, making the treatment not neccassary (grease separator).



The faucet to be used as a point of intake of the line “non drinking water”, must necessarily be equipped with a safety system to prevent children from unintentionally accessing the improper use of water.
In addition, it is mandatory to affix a sign with the words **NON DRINKABLE WATER** at the pick-up point.

ALREADY EXISTING

Is it possible to install and equip our old hydraulic system the ***Biogrigio Home***?

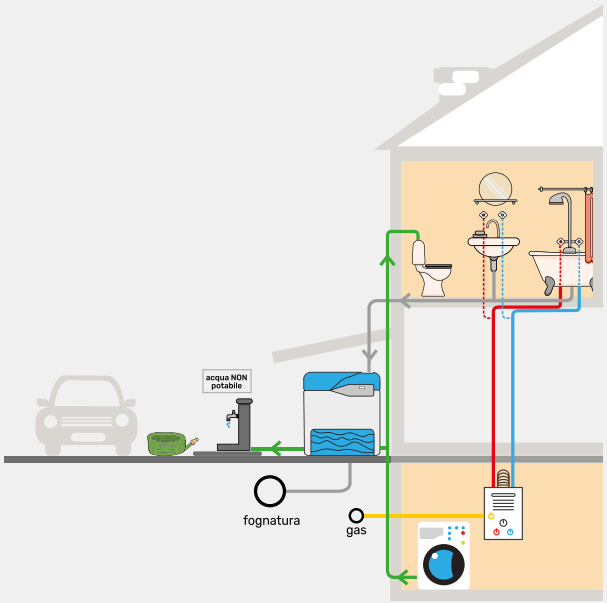
The bathroom is the place inside the house most subject to maintenance:

- **ordinary maintenance**
  consists in periodic general inspection
- **extraordinary maintenance**
  from recent statistical data, is necessary at least after 30 years

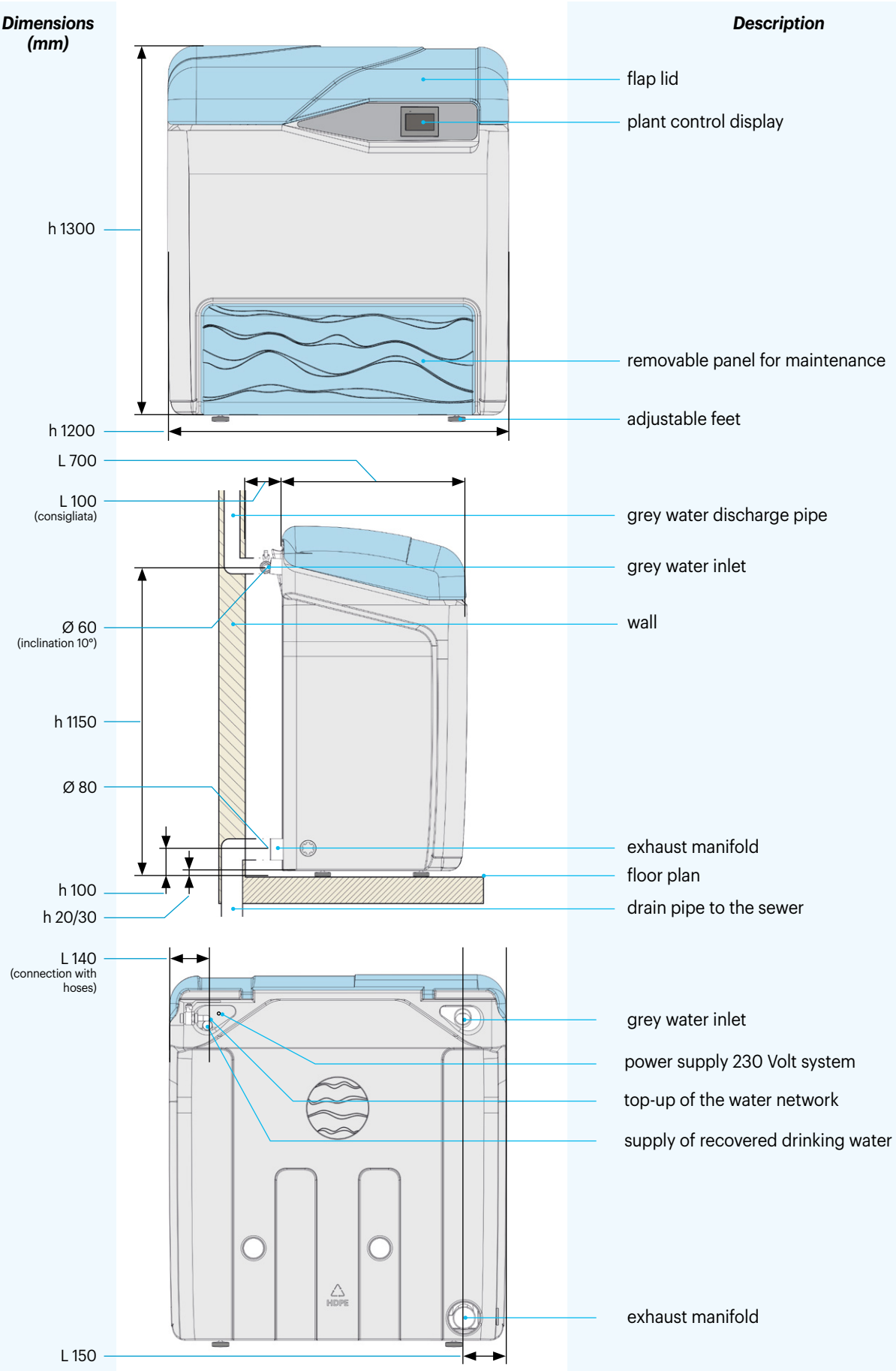
Therefore, if an extraordinary maintenance intervention is necessary, it is desirable to also provide a dual pipe (**non-drinking water** supply pipe) to be connected to the WC box and make the discharge of **grey water** from existing pipes independent.

The new discharge and discharge pipes can be placed outside the building, as the bathrooms are generally located on the outer perimeter of the house, thus avoiding major construction work.

The ***Biogrigio Home*** plant has been designed to be positioned outside our house, provided that it is protected by adequate coverage.



DIMENSIONS AND CONNECTIONS



SPECIFICATION CLAUSE

Supply of grey water treatment plant type BIOGRIGIO HOME Starplast for the recovery of grey water from sinks, bathtubs and showers (excluding kitchen sinks), of polyethylene outdoor version built in the rotational moulding technique with constant wall thickness
The system consists of three distinct treatments:
• Primary sedimentation system automatic cleaning of solid residues through bag filter
• biological oxidation compartment with air blowing through fine bubble diffusers driven by membrane compressor
• MBR ultrafiltration compartment with membrane pack of the surface of m²... , fine bubble diffuser for membrane surface cleaning installed on board the system, permeate suction pump.

The treatments are encapsulated by a 330-litre purified water storage area where the pump is housed and the UV lamp for sterilization.
The whole system is controlled by a PLC programmable through a 4" touch-screen front monitor and a smatphone app.
The tanks of the system are equipped with a top opening with a lid for control and maintenance operations and with nozzles for bottom and overflow discharge. A flap lid covers the entire purification system.

BIOGRIGIO HOME will have the following dimensions:
L 1200 x W 700 x H 1300 - total volume liters 500 - max output capacity 25 l/min

PACKAGING

LISTINO

model	dimensions			recovery water			supply			connections			€
	vol. tot.	La x Lu x h	peso	volume	delivery	pressure				in	out	tp	
	litres	mm	kg	litres	litres/min	bar	Volt	Hz	kW	Ø			
BGR HE 500	500	700 x 1200 x 1300	150	250	25	3,0	230	50	1,0	60	1"	80	**13.100,00**

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