E-CUBE

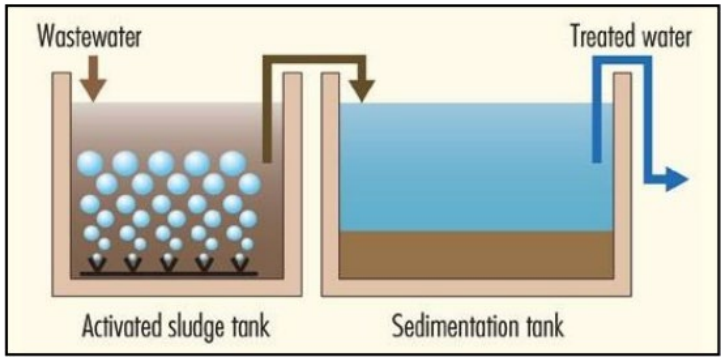
MBR modules

Model: E-CUBE MBR

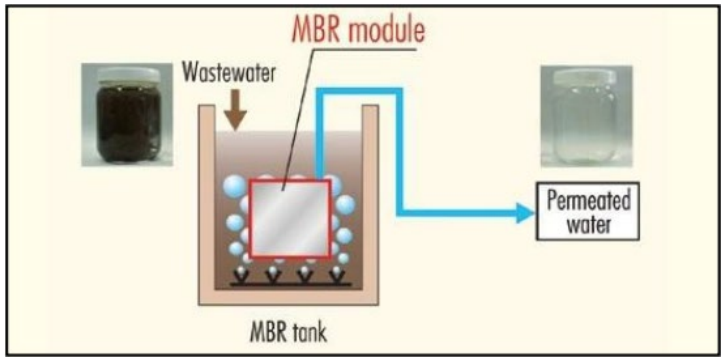
MBR modules

The MBR membrane modules in the waste water biological systems, allow us to obtain water without suspended solids and with low concentration of BOD and nitrogen. The water produced from MBR systems can be used for industrial use or irrigation.

Conventional wastewater treatment system



MBR System



The excellent quality water produced by **E-CUBE MBR** modules is obtained by using special PVDF (polyvinylidene fluoride) membrane with a pore size of 0,08 micron. The PVDF flat sheet membrane ensures:

High permeability and high permeate quality

The PVDF membranes with 0,08 micron pores can effectively eliminate all the particles bigger than 0,1 micron providing high quality water.
Uniform pore size results in consistently high permeability with a minimal pore clogging.

High chemical and mechanical resistance

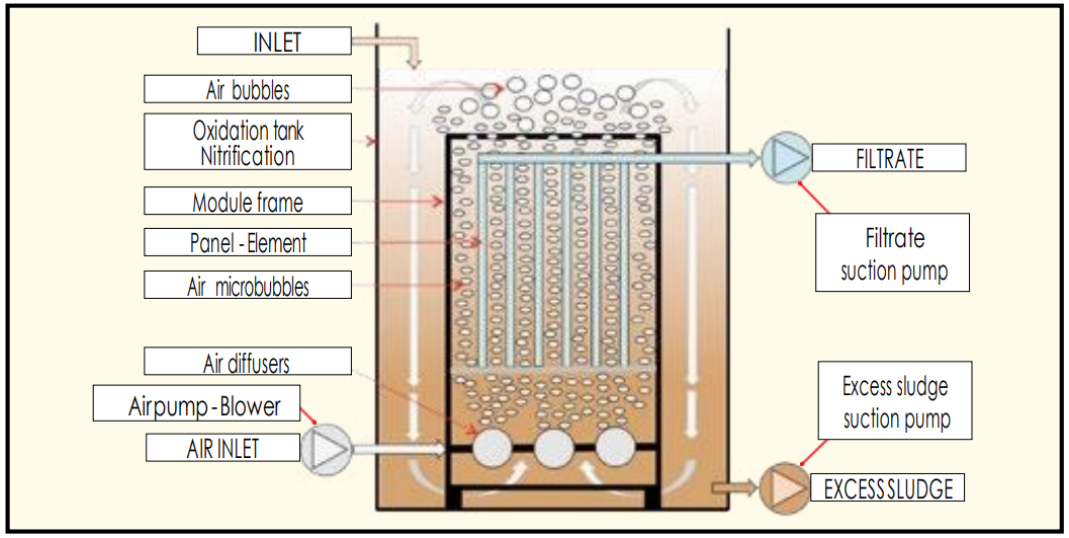
The use of PVDF (polyvinylidene fluoride) for the functional layer of the membrane and PET (polyester) non-woven fabric as the base layer allows the membrane to exhibit superior physical strength and chemical stability.

High fouling resistance

The flat sheet configuration and the structure with pores of regular size and even distribution of the membranes in PVDF supported by a base layer of PET allows the membranes to remain adequately clean thanks to the constant flow of water generated by the scouring air. This mechanism stopes activated sludge from adhering to the membrane surface thus ensuring a constant flow of filtered water (permeate).

E-CUBE MBR modules

The submerged MBR membrane modules model **E-CUBE MBR** are the result of 20 years of experience in the municipal and industrial waste water treatment market. The MBR module **E-CUBE MBR** is composed of a stainless steel frame that contains the special **E-CUBE 35** cassettes and supports the air diffuser and the (filtrate) permeate manifold.
Every cassette contains 50 membrane element of 0,7 m2. Each membrane element conveys the water to the permeate collector of the module which is connected, through dedicated polyurethane pipes, to the suction pump. The air diffusers, located in bottom part of the stainless steel frame, introduce the right amount of air to create the flux of water through the membrane elements and to maintain the membrane surfaces clean.



The **E-CUBE MBR** modules provides three main advantages:

Modular design

As the **E-CUBE MBR** modules are modular, they can comply with all the capacity requirements. This feature allows you to combine the modules together in order to create bigger types of modules and to place the modules in the MBR tank in a very compact way.

Better energy efficient

The **E-CUBE MBR** modules consume less energy compared to hollow fibre membrane modules due to more effective scouring aeration and a lower trans-membrane pressure.

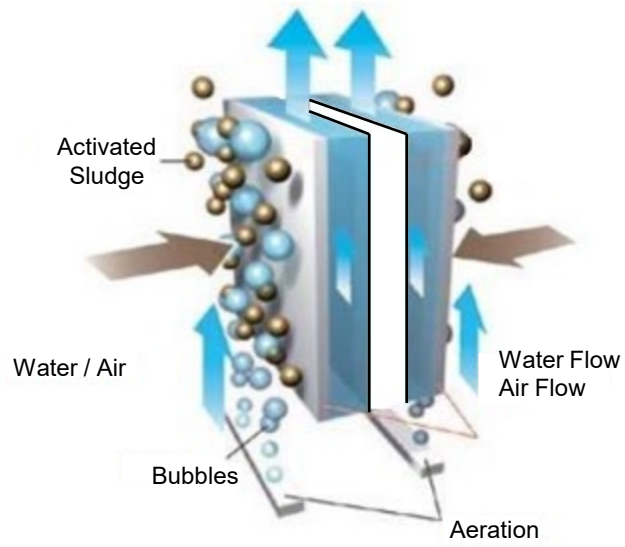
Better performance and less operating cost of the MBR plant

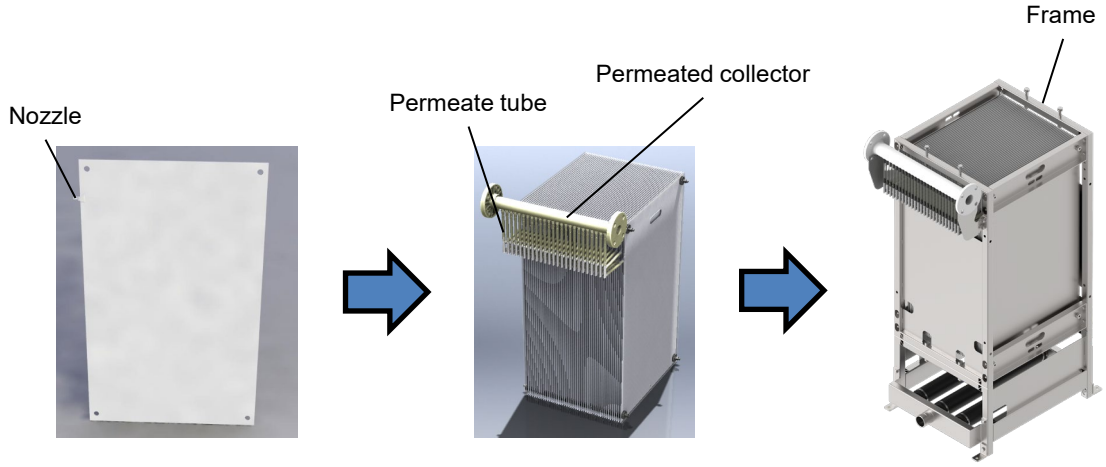
The PVDF and PET flat sheet membrane ensures a greater mechanical resistance compared to the hollow fibre membranes resulting in a longer duration and in a considerable reduction of maintenance costs. Furthermore the high mechanical resistance of the flat sheet membranes together with the more effective scouring aeration system ensure a better resistance against fouling thus allowing the realization of a more coarse screening and less expensive pre-treatment process.
This increased fouling resistance involves fewer chemical cleaning requirements for increased results of plant performance and operating plant cost reduction.

E-CUBE MBR modules: operation

E-CUBE MBR modules contain robust flat membranes that retain the mud by separating solids and bacteria from the wastewater. The module's ventilation system generates an upward airflow that prevents membrane clogging, which allows for extreme efficiency of up to 99% in removing suspended solids, providing highly purified water suitable for reuse.

MBR technology determines a better quality of treated water than conventional activated sludge treatment systems, which gives the customer the possibility to reuse water, which cannot be done with conventional systems.
MBR systems are available in a wide range of configurations designed to meet specific needs such as containerized solutions for remote sites or upgrading systems to improve the performance of existing treatment plants.





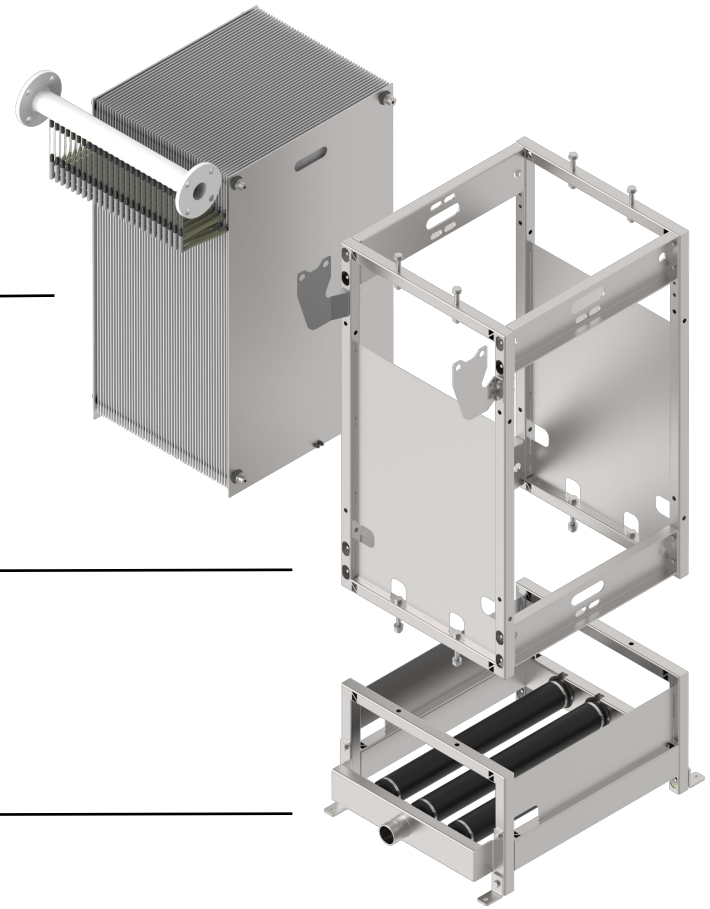
Membrane element | Cassette 35 m² | Module

MBR technology offers a number of key advantages over conventional wastewater treatment plants, and eliminating the need for secondary clarifiers and tertiary treatments, the plant has a significantly reduced footprint.

modular, sturdy, economic

E-CUBE MBR structure: easy assembly and modularity

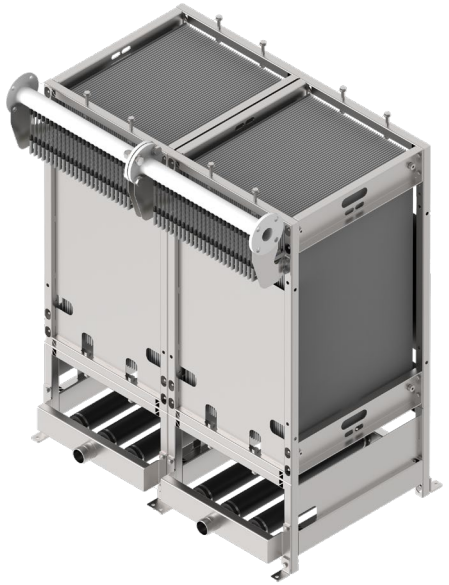
Type	E-CUBE 01-35
Membrane material	PVDF
Nominal pore size	0.08 µm
Membrane surface of the cassette (m^2)	35
Width (mm)	413
Height (mm)	800
Length (mm)	484



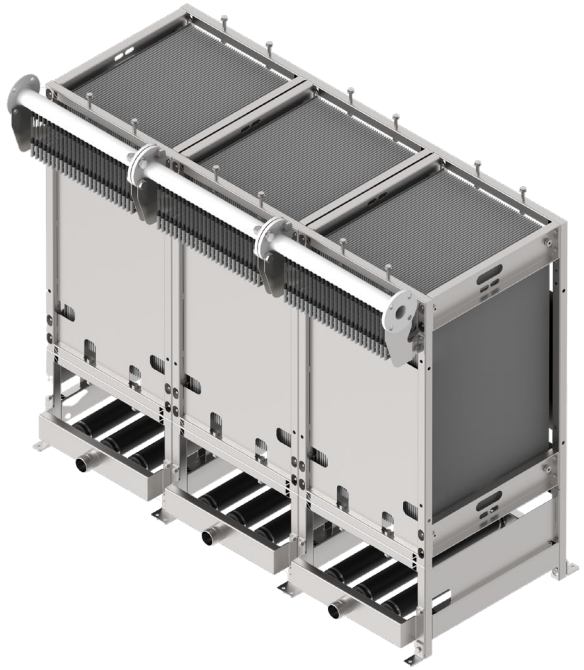
Why choose E-CUBE MBR: modularity

E-CUBE MBR modules, being modular, they can meet flow requirements at reduced costs.

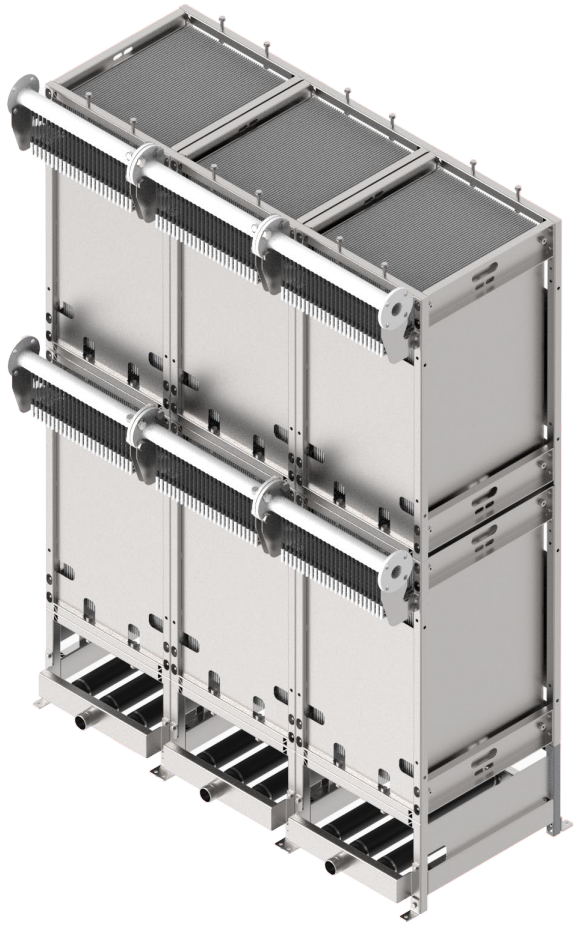
E-CUBE 01-35
Indicative capacity 17 m^3/d



E-CUBE 02-70
Indicative capacity 34 m^3/d



E-CUBE 03-105
Indicative capacity 50 m^3/d



E-CUBE 06-210
Indicative capacity 100 m^3/h

E-CUBE MBR: product range

Model	E-CUBE 01-35
Total membrane surface	35 m^2
Membrane material	PVDF
Frame material	Stainless Steel 304
Total number of cassettes	1
Nominal pore size	0,08 µm
Max backwash pressure	0,1 bar
Indicative capacity	17 m^3/g
Air diffuser material	EPDM
Air scouring flow	26 Nm^3/h
Dry weight	80 Kg

x 1

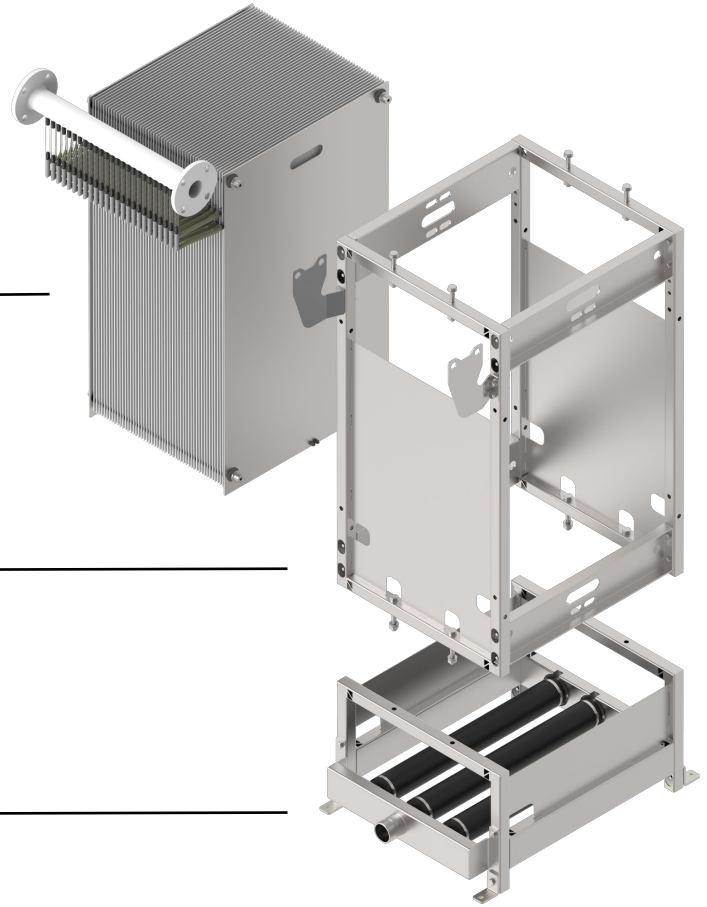
E-CUBE-M
Cassette 35 m^2

x 1

E-CUBE-B
Block support

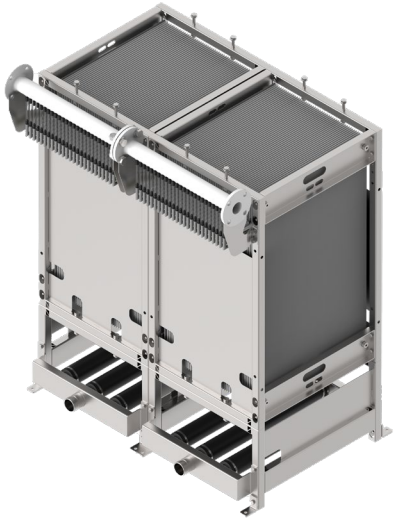
x 1

E-CUBE-A
Aeration block



E-CUBE MBR: product range

Model	E-CUBE 02-70
Total membrane surface	70 m^2
Membrane material	PVDF
Frame material	Stainless Steel 304
Total number of cassettes	2
Nominal pore size	0,08 µm
Max backwash pressure	0,1 bar
Indicative capacity	34 m^3/g
Air diffuser material	EPDM
Air scouring flow	52 Nm^3/h
Dry weight	160 Kg



x 2

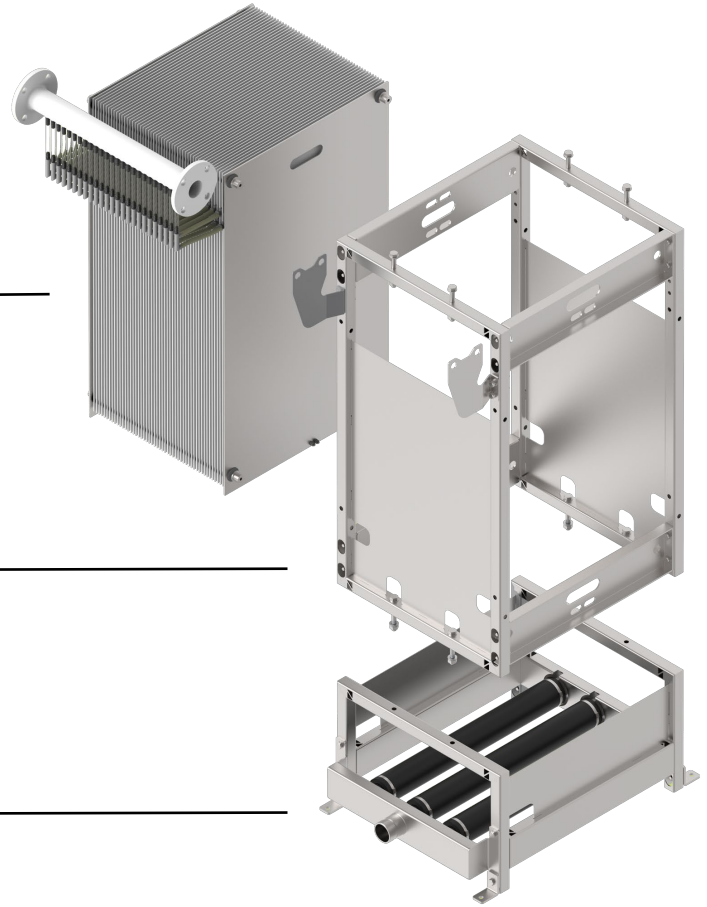
E-CUBE-M
Cassette 35 m^2

x 2

E-CUBE-B
Block support

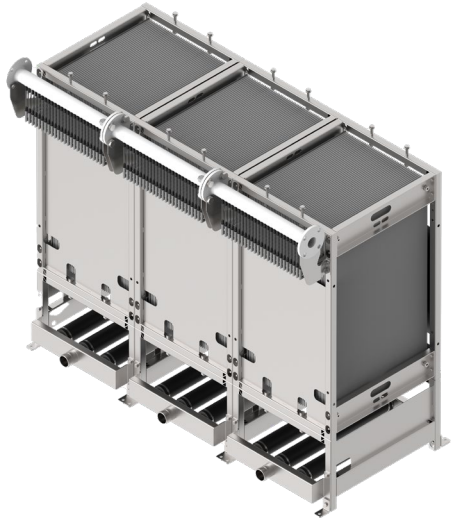
x 2

E-CUBE-A
Aeration block



E-CUBE MBR: product range

Model	E-CUBE 03-105
Total membrane surface	105 m^2
Membrane material	PVDF
Frame material	Stainless Steel 304
Total number of cassettes	3
Nominal pore size	0,08 µm
Max backwash pressure	0,1 bar
Indicative capacity	50 m^3/g
Air diffuser material	EPDM
Air scouring flow	78 Nm^3/h
Dry weight	240 Kg



x 3

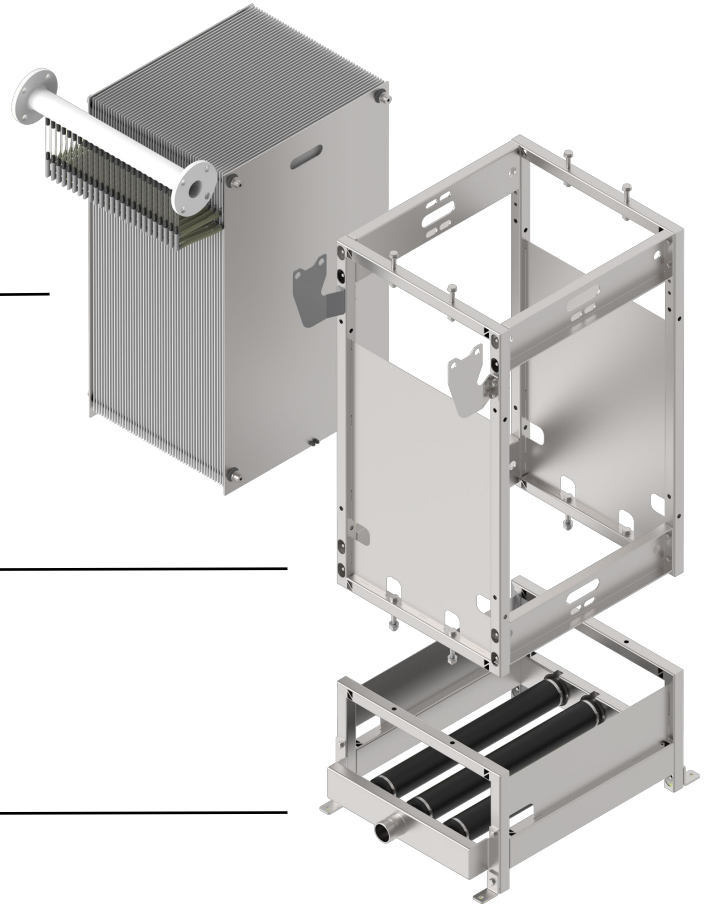
E-CUBE-M
Cassette 35 m^2

x 3

E-CUBE-B
Block support

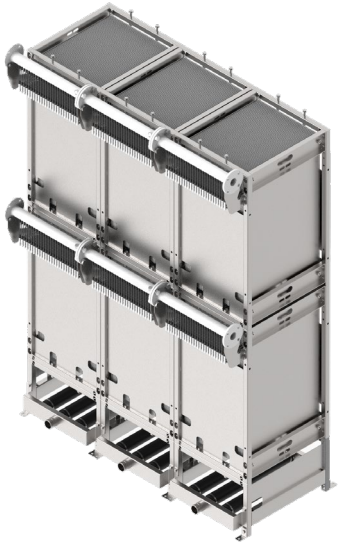
x 3

E-CUBE-A
Aeration block



E-CUBE MBR: product range

Model	E-CUBE 06-210
Total membrane surface	210 m^2
Membrane material	PVDF
Frame material	Stainless Steel 304
Total number of cassettes	6
Nominal pore size	0,08 µm
Max backwash pressure	0,1 bar
Indicative capacity	100 m^3/g
Air diffuser material	EPDM
Air scouring flow	78 Nm^3/h
Dry weight	420 Kg



x 6

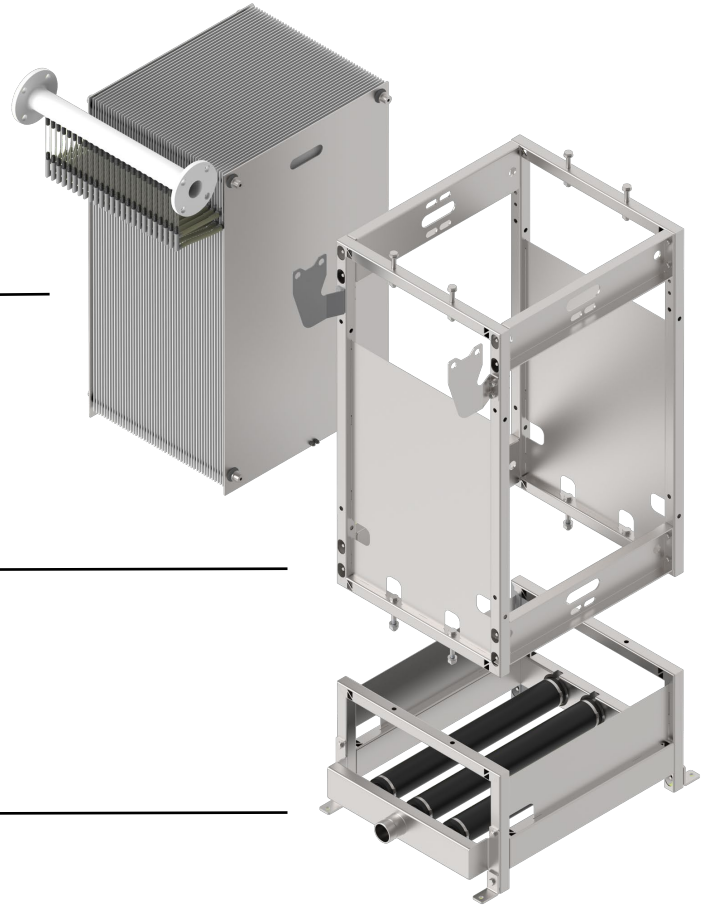
E-CUBE-M
Cassette 35 m^2

x 6

E-CUBE-B
Block support

x 3

E-CUBE-A
Aeration block



More information

Scheda Tecnica
E-CUBE

Video
E-CUBE

Corsi Tecnici

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