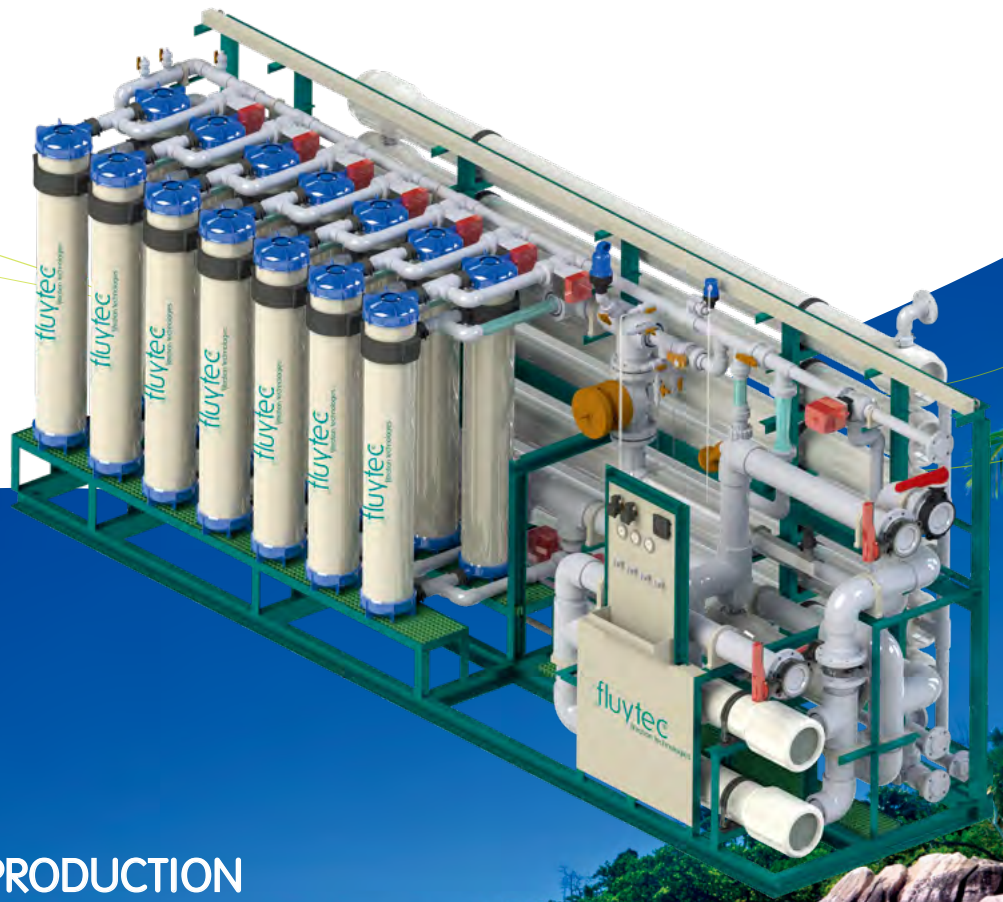




Continuous UF [c-UF]

Fluytec Ultrafiltration
Proprietary Systems



CONTINUOUS PRODUCTION
Even During Cleanings



LOWER FOOTPRINT (75%)



**LOWER CAPITAL and
OPERATIONAL EXPENDITURES**

UF QUALITY



+45 YEARS

fluytec



Continuous UF [c-UF]

Fluytec c-UF

Fluytec has revolved around conventional Ultrafiltration technology in order to develop a new generation of UF, which is capable of granting a constant product flow even during cleanings (Backwash, Flushing, Rinsing and Chemically Enhanced Flushing).

This innovation eliminates the need for backwash pumps and blowers, buffer/backwash tanks and transfer pumps to the process located downstream (i.e. Reverse Osmosis).

This enables the user to take advantage of the following **main benefits**:



CONTINUOUS PRODUCTION



Even during cleanings (Backwash, Flushing, Rinsing and Chemically Enhanced Flushing)

LOWER FOOTPRINT



Up to 75%, due to the elimination of tanks, pumps, etc.

CAPEX and OPEX REDUCTION



Thanks to the elimination of equipment, controls, terrain, etc.

Technology Description

The c-UF technology achieves a **Continuous Permeate Production** by cleaning each UF module at a time. The **Upgraded Cleaning Sequence** devised by Fluytec consists of a combination of flushing, backwashing and rinsing phases, during which UF permeate flow is maintained constant.

Permeate flow remains constant even during the Chemically Enhanced Cleanings, which is developed with no chemical leak to the permeate stream.

Typical Applications

The typical field of applications of the c-UF technology is focused in medium size flows and superficial waters:

- Desalination of sea or brackish waters, as a pre-treatment for RO technology.
- Reuse or conditioning of industrial water.
- Containerized plants.



NON-STOP systems.
Higher PRODUCTION.
UF QUALITY Standards.

Product Quality

High quality permeate	SDI15 < 2.5
Turbidity	< 0.2 NTU

Operating Parameters

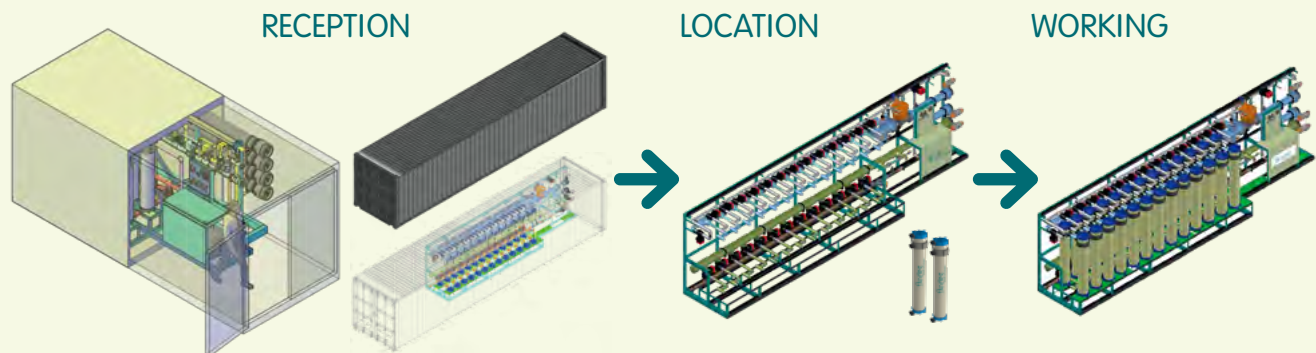
Water recovery	85 – 95%
Transmembrane pressure	0.2 – 2 bar
Operating pressure	2 – 6 bar
Backpressure	> 1.5 bar

c-UF Models

CONTAINERIZED UNITS*

MODEL		c-UF4S	c-UF5	c-UF8	c-UF14	c-UF20	c-UF26	c-UF40
Production (m ³ /h) ¹	Min.	6	12	19	33	48	62	96
	Max.	16	30	48	84	120	156	240
No. of UF modules		4	5	8	14	20	26	40
Membrane Area per module (m ²)		40	60	60	60	60	60	60
Total Membrane Area (m ²)		160	300	480	840	1,200	1,560	2,400

100% Plug & Play

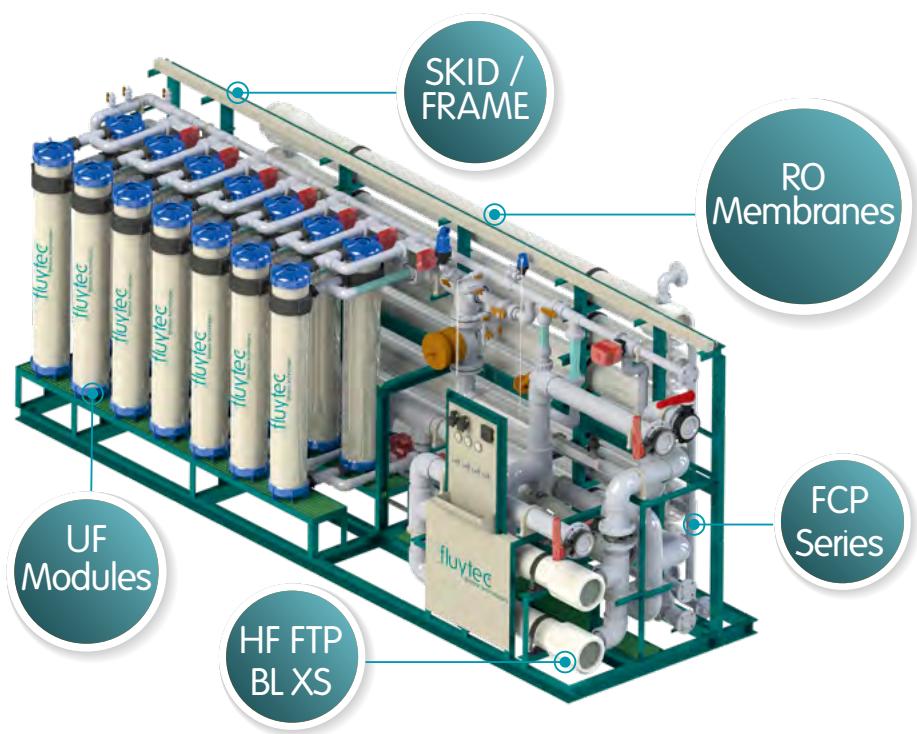


Fluytec manufactures c-UF units that are factory programmed and tested, ready to be interconnected and started up on site. c-UF units can also be supplied in **Integrated in RO Systems**, mounted in a common skid or container.

EXTRA LARGE CAPACITY UNITS*

MODEL		c-UF5XL	c-UF8XL	c-UF14XL	c-UF20XL	c-UF26XL	c-UF32XL	c-UF40XL
Production (m ³ /h) ¹	Min.	16	25	44	64	83	102	128
	Max.	40	64	112	160	208	256	320
No. of UF modules		5	8	14	20	26	32	40
Membrane Area per module (m ²)		80	80	80	80	80	80	80
Total Membrane Area (m ²)		400	640	1,120	1,600	2,080	2,560	3,200

*The performance, flow per module, recovery and energy consumption depends in the raw water temperature and quality. Dedicated projections shall be developed in order to guarantee the performance of any given system.



FCP Series - Autostrainer
100 µm to 300 µm >>

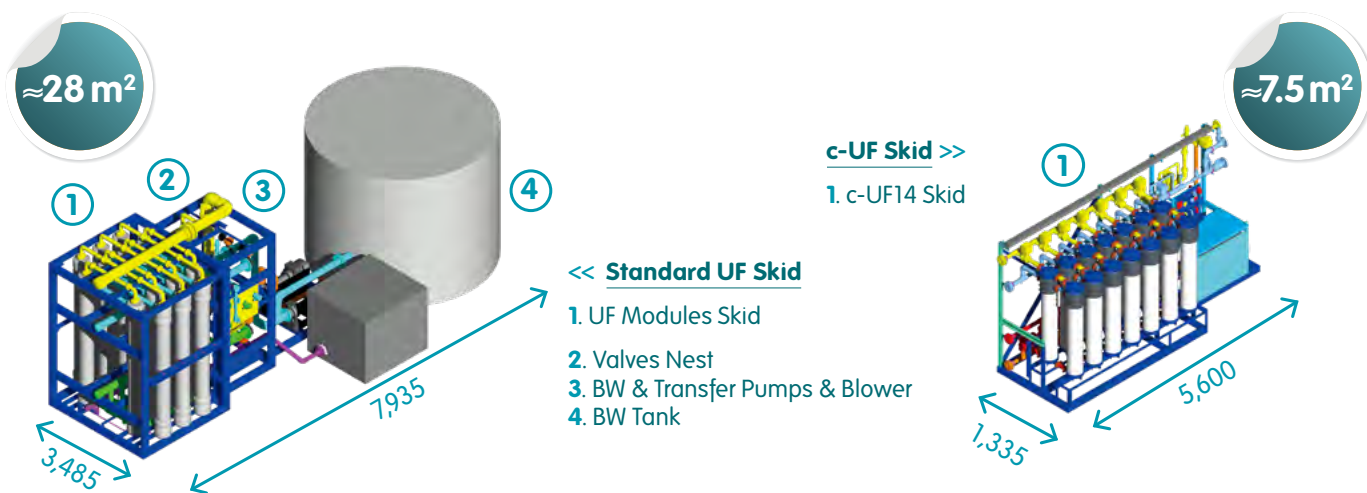


HF FTP BL XS - High Flow Security
Micronic Cartridge Filter Housing
1 µm to 20 µm >>



c-UF, the IDEAL SOLUTION for limited footprints.

50 m³/h Comparison



	CONVENTIONAL	c-UF
Cleanings	UF stops & all modules are cleaned at a time	Module by module or in pairs while the rest continue producing
Backwash Auxiliary equipment	Backwash pump + buffer tank + transfer pump	-
Process Actuated Valves	9 valves (size depends on the flow)	2 small valves per module or in pairs + 3 common valves (size depends on the flow)
Backpressure (Product) / Peak Flow	Residual / Oversized throughout filtration process	>1.5 bar / Oversized just during backwash
Chemical Cleanings	Filtration stops during CEB No chemical leakage to the permeate	CEF's take place in crossflow, module by module or in pairs, without stopping production and without chemical leakage to the permeate

Success Stories



c-UF in a Thermosolar Plant

APPLICATION: Cooling Tower Make-up.

OBJECTIVES: Checking the efficient operation of the Continuous Ultrafiltration (c-UF) concept and evaluating the technology for possible substitutions of process stages such as clarification + sand filters.

CONCLUSIONS:

- c-UF has the same performance as a conventional UF, but decreasing the footprint in a 75% the investment cost (CAPEX) in a 25%.
- Constant flow can be produced without buffer/backwash tank and pump.
- Transmembrane pressure remains constant without any external cleaning system.
- The quality of produced water is within UF specifications.
- There is no leakage of chemicals to the produced water of the c-UF during the continuous chemical cleanings.

c-UF in a Waste Water Treatment Plant

APPLICATION: Traditional Tertiary Treatment.

OBJECTIVES: Finding a more effective treatment to reduce pollutants and reuse the maximum amount of water possible in a WWTP.

CONCLUSIONS:

- Footprint, CAPEX and OPEX of the plant are significantly reduced.
- Most of the contaminants (PPCPs, pharmaceutical and personal care products) were considerably reduced [caffeine (99.8%) or paracetamol (99.7%) among others].
- Total water recovery increase using c-UF technology is 97.92%, reaching a 100% (ZLD) when the rejection is directed to WWTP header.



See the c-UF in action ▶



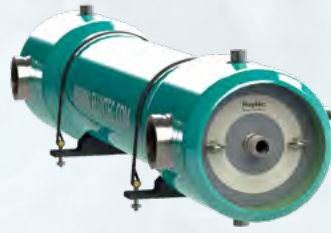
COMPLEMENTARY PRODUCTS

FCP Series AUTOSTRAINER with No Motor

EXTREMELY COMPACT & WITHOUT MOTORS
FULLY NON CORROSIVE MATERIALS
CONTINUOUS PRODUCTION EVEN DURING BACKWASH

DESIGN FLOW: 20-200 m³/h

SELECTIVITY: 50-500 µm

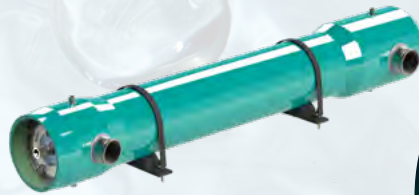


HF FTP BL XS Series High Flow Cartridge Filter Housings

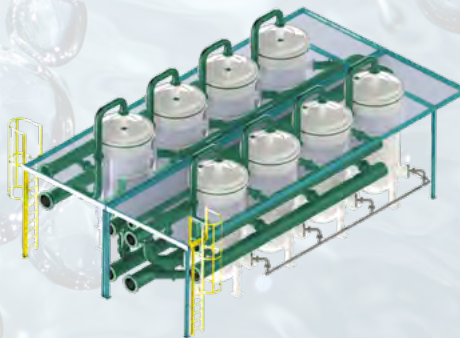
PREMIUM QUALITY STANDARDS IN OUR MOST COMPACT FRP HOUSINGS

FULLY CORROSION RESISTANCE

QUICK & EASY CARTRIDGE REPLACEMENT
1 PP HIGH FLOW PLEATED CARTRIDGE 40" or 60"



OTHER ULTRAFILTRATION SOLUTIONS



i-UF INTEGRATED ULTRAFILTRATION

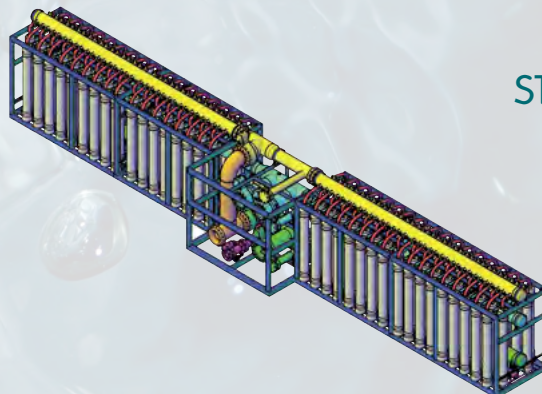
AUTOSCREENING & ULTRAFILTRATION
STAGES INTEGRATED IN THE SAME VESSEL
SCREENING + UF MEMBRANE CARTRIDGES

OUTDOORS INSTALLATION

FRP | STAINLESS STEEL | CSRL

8-310 m³/h

UNLIMITED DESIGN PRESSURE



ULTRAFILTRATION STANDARD SYSTEMS

COMPACT SOLUTIONS FOR
SUPERB WATER QUALITY



Subject to change without notice.

fluytec® **45** YEARS

Other products in this range:

- i-UF (Integrated Ultrafiltration Systems)
- FTAUR series filters (Automatic Backwash Filters)
- Ultrafiltration Standard Systems
- ...



Fluytec Solutions Worldwide
Visit our Website for more information

v.6



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