Sanitary Spiral Membranes for Ultrafiltration

UFX-pHt Series

The elements are based on a unique construction on polypropylene (PP) support material in a sanitary full-fit design that provides optimum cleaning conditions.
They are available in different combinations of length, diameter, spacer size and molecular weight cut-off value. All the materials used for the production of these membranes comply with FDA regulations (CFR) Title 21.

Designation	Characteristics	MWCO
UFX10 pHt	Polysulphone permanently hydrophilic	10,000

Recommended operation limits

Production

pH range	1 – 13
Pressure, bar (psi)	1 – 15
Temperature, °C (°F)	0 – 75
Max. element pressure drop, bar at cP 1	1.1 for standard element size (38")

Cleaning (3 hours per day)*

Pressure, bar	1 – 5
Temperature, °C	0 – 75
Max. element pressure drop, bar at cP 1	1.1 for standard element size (38")
pH range	1 – 13
NaOH, %	0.1 – 0.5
Na-EDTA, %	0.1 – 1.0
Mineral acid, %	0.1 – 0.5
Citric acid, %	0.1 – 1.0

Sanitation (1 hour per day)

Treated hot water, only feed pump at 1 bar, °C	80
Chlorine (ppm) at 50°C and pH 10	<200
Hydrogen peroxide (ppm) at 25°C	<1000

* Please consult the Alfa Laval cleaning description

Note: The use of oxidation agents and similar chemicals might influence the actual membrane performance over time.

Typical cross-flow m^3/h* and max. pressure drop psi at cP 1

Spacer size	m^3/h	bar
Outer diameter 2.5"		
30 mil	-	-
48 mil	1.3	0.6
80 mil	-	-
Outer diameter 3.8"		
30 mil	6	1.1
48 mil	8	1.1
80 mil	11	1.1
Outer diameter 6.3"		
30 mil	17	1.1
48 mil	23	1.1
80 mil	30	1.1
Outer diameter 8.0"		
30 mil	18	0.9
48 mil	25	1.1
80 mil	30	1.1
Outer diameter 8.4"		
30 mil	25	0.8
48 mil	30	1.1
80 mil	35	1.1

* Calculated at tight fit of spiral element and housing and by use of standard ATD system

Spiral membrane designation

Alfa Laval

1	2	3	4
UFX-pHt-	63	38/	48

1 = Membrane type

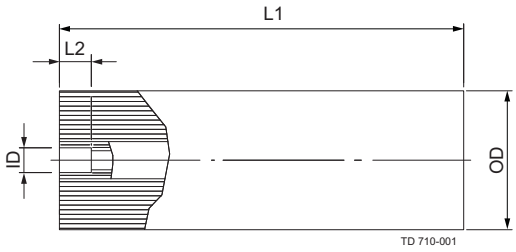
2 = Outer diameter of element (6.3")

3 = Element length (38")

4 = Feed spacer thickness

Element configuration

Outer diameter	2.5"	3.8"	6.3"	8.0"	8.4"
Length	17"	38"	38"	38"	38"
Spacer size (mil)	-	30	30	30	30
	48	48	48	48	48
	-	80	80	80	80



Dimensions

OD = outer diameter of element
HD = nominal inner diameter of housing*
L1 = total length of element without ATD
ID = diameter of ATD socket
L2 = depth of ATD socket
* = for specific measurements of Alfa Laval housings, please consult the product description

Element size	OD	HD	L1	ID	L2
	mm	mm	mm	mm	mm
2517	64.0-65.0	66.00	432	21.00	26.0
3838	95.0-96.5	97.55	965	21.00	26.0
6338	160.0-162.0	163.10	965	28.90	26.0
8038	198.5-201.5	204.14	965	31.15	50.0
8038	198.5-201.5	204.14	965	28.58	79.0
8438	211.5-214.0	215.10	965	31.15	50.0
8438	211.5-214.0	215.10	965	28.90	50.0

Other element sizes may be available - please contact Alfa Laval.

Important information

New spiral elements must be cleaned prior to first use. The cleaning procedure should be in accordance with the instructions provided in the Alfa Laval cleaning description for the spiral element type concerned.

The customer is fully responsible for the effects that any incompatible chemicals may have on the spiral elements.

- After initial wetting, the spiral elements must be kept moist at all times.
- If the operating specifications provided in this product description are not strictly followed, the limited warranty will be null and void.
- To prevent biological growth during system shutdowns, Alfa Laval recommends that spiral elements should be immersed in a protective solution.
- Avoid permeate-side back pressure at all times.
- Alfa Laval recommends using a rigid stainless steel ATD end device at the housing outlet end.
- Alfa Laval recommends that the inner diameter of the housing be approx. 2 mm bigger than the outer diameter of the spiral element in question.

Operating guidelines

Avoid any abrupt pressure or cross-flow variations on the spiral elements during startup, shutdown, cleaning or other sequences, in order to prevent possible damage.

Alfa Laval recommends the following start-up procedure from standstill to operating condition:

- The unpressurized plant should be refilled with water.
- Feed pressure should be gradually increased over a 30–60 second time scale.
- Before initiating cross-flow at high permeate flux conditions (e.g. start-up with high-temperature water), the set feed pressure should be maintained for 5–10 minutes.
- Cross-flow velocity at the set operating point should be gradually achieved over a period of 15–20 seconds.
- Temperature variations should be implemented gradually over a period of 3–5 minutes.

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How to contact Alfa Laval
Contact details for all countries
are continually updated on our website.
Please visit www.alfalaval.com to
access the information direct.