

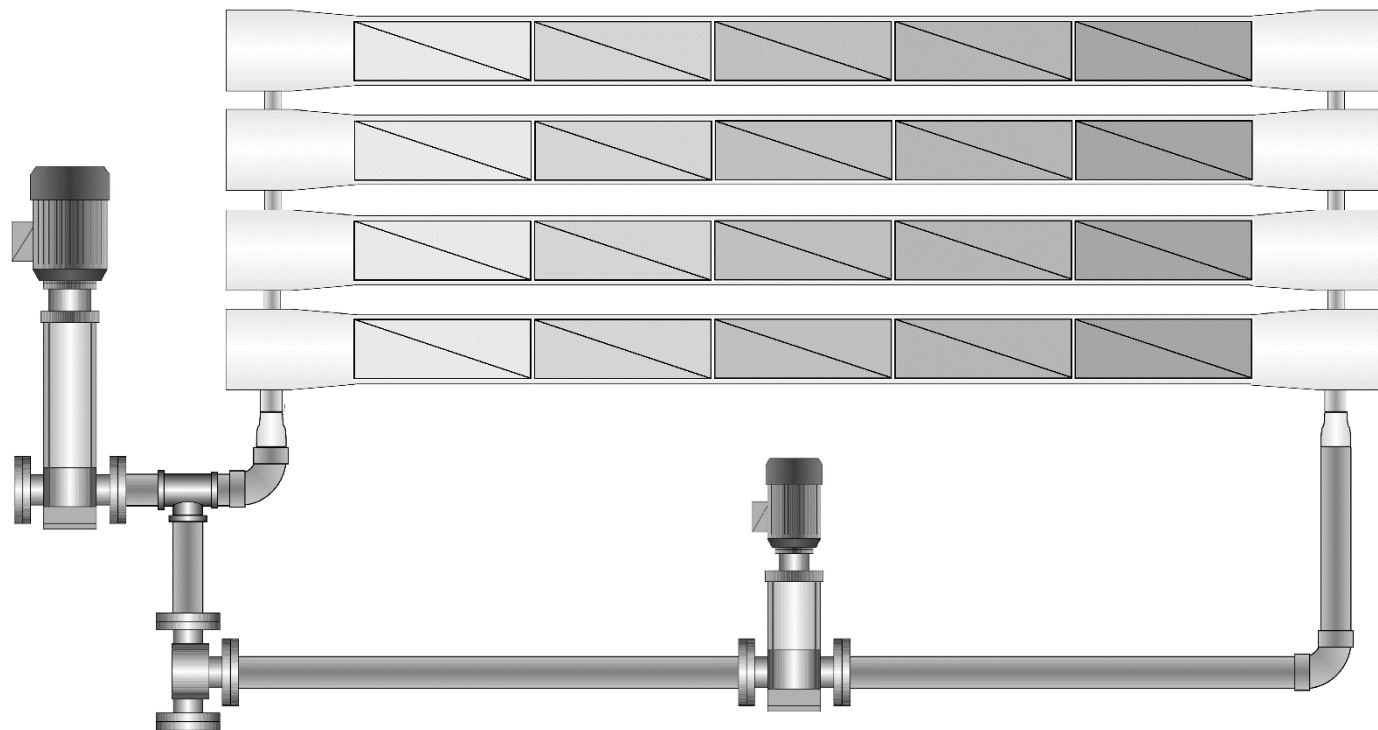
Desalitech ReFlex™ Reverse Osmosis with CCRO Technology

Industrial water treatment does not have to be difficult. Gone are the days of 75% water recovery (that means 25% waste!) and finicky systems that require lengthy, frequent cleanings. Desalitech's ReFlex™ Reverse Osmosis systems can be used for all of the same applications as traditional reverse osmosis and much more. Built with our innovative Closed Circuit Reverse Osmosis (CCRO) technology, recovery is no longer hydraulically limited, but simply a function of the feed water.

ReFlex™ systems use only premium, Filmtec™ membranes and components, configured in a smart new way that gives the operator direct control of recovery rate, cross flow and flux.

With ReFlex™ systems, your facility will also enjoy a high resistance to scaling and fouling, which greatly improve uptime and therefore the reliability of your water treatment operations.

This simple yet revolutionary change in design even allows operators to easily and automatically cope with variations in feed water and operational requirements, optimize process performance, reduce energy use and minimize costs on a day-to-day basis.



EASY

Desalitech technology autonomously adjusts to varying feed and operating conditions eliminating the need for expertise and constant oversight, making your RO as easy to operate as your refrigerator.



EFFICIENT

Typical recovery of 92-98% and 50-90% water waste reduction save money from day one delivering rapid payback within months.



RELIABLE

Greater uptime and less than half the maintenance thanks to Desalitech's CCRO process that overcomes legacy RO pitfalls like fouling and scaling.

Features

- Single Stage, Semi-Batch RO
- Adaptive Data-Driven IoT Software with Remote Monitoring and Control Functionality
- Maximum Recovery – GUARANTEED – Up to 98%
- Dynamic Low Fouling / Low Scaling Performance
- Reduced Energy Consumption
- Automatic Realtime Response to Variations in Feed Water Quality
- Premium Filmtec™ RO Membrane Elements

Product Details

- ReFlex™ 'R' Series – 2 → 42 Pressure Vessels (PV's) R2 → R42
- 20 – 1,000 gpm / 5 - 240 m³/h
- 10 – 210 Membrane Elements (5 in each 6 element long pressure vessel)
- Max. Pressure Up to 600 PSI (std. 450 PSI) / 41 bar (std. 31 bar)
- Inlet Pressure 0 – 90 PSI / 6.2 bar
- Customizable Standards – Grundfos CRN Pumps, Protec FRP PV's, Fil-Trek 316L SS CF's, Rosemount Instruments, AB PLC PV7+ HMI, etc.

Desalitech ReFlex™ Product Sheet (USA)

CCRO Technology



ReFlex MODEL	R2	R3	R5	R8	R10	R12	R15	R20	R24	R30	R36	R42
Average Permeate Flow	72,000 gpd	108,000 gpd	180,000 gpd	288,000 gpd	360,000 gpd	432,000 gpd	540,000 gpd	720,000 gpd	864,000 gpd	1,080,000 gpd	1,296,000 gpd	1,512,000 gpd
16.4 gfd (5 gpm per 440 ft ² mem.)*	50 gpm	75 gpm	125 gpm	200 gpm	250 gpm	300 gpm	375 gpm	500 gpm	600 gpm	750 gpm	900 gpm	1,050 gpm
14.4 gfd (4 gpm per 400 ft ² mem.)	40 gpm	60 gpm	100 gpm	160 gpm	200 gpm	240 gpm	300 gpm	400 gpm	480 gpm	600 gpm	720 gpm	840 gpm
9.0 gfd (2.5 gpm per 400 ft ² mem.)	25 gpm	38 gpm	63 gpm	100 gpm	125 gpm	150 gpm	188 gpm	250 gpm	300 gpm	375 gpm	450 gpm	525 gpm
Cartridge Filtration												
Housing Quantity	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)
Cartridge Filter Length (2.5" dia.)	40"	40"	40"	40"	40"	40"	40"	40"	40"	40"	40"	40"
Cartridge Filter Qty	3	6	10	15	15	19	25	32	40	52	60	68
High Pressure Pump (HPP)												
Design Flow Rate - CC (16.4 gfd)	56 gpm	83 gpm	139 gpm	223 gpm	278 gpm	334 gpm	417 gpm	557 gpm	668 gpm	835 gpm	1,002 gpm	1,169 gpm
Design Flow Rate - PF (16.4 gfd)	67 gpm	100 gpm	167 gpm	267 gpm	334 gpm	401 gpm	501 gpm	668 gpm	801 gpm	1,002 gpm	1,202 gpm	1,403 gpm
Design Boost Pressure	250 PSI	250 PSI	250 PSI	250 PSI	250 PSI	250 PSI	250 PSI	250 PSI	250 PSI	250 PSI	250 PSI	250 PSI
Motor (TEFC)	20 HP	25 HP	30 HP	60 HP	60 HP	75 HP	75 HP	100 HP	125 HP	75 HP x2	100 HP x2	100 HP x2
FilmTec™ Membrane Elements and Housings												
Element Quantity	10	15	25	40	50	60	75	100	120	150	180	210
Element Area (8" dia.)	400-440 ft ²	400-440 ft ²	400-440 ft ²	400-440 ft ²	400-440 ft ²	400-440 ft ²	400-440 ft ²	400-440 ft ²	400-440 ft ²	400-440 ft ²	400-440 ft ²	400-440 ft ²
Housing Quantity (PV's)	2	3	5	8	10	12	15	20	24	30	36	42
Elements per Housing (6M long)	5	5	5	5	5	5	5	5	5	5	5	5
Circulation Pump (CP)												
Design Flow Rate (40 PSI)	70 gpm	105 gpm	175 gpm	280 gpm	350 gpm	420 gpm	525 gpm	700 gpm	840 gpm	1,050 gpm	1,260 gpm	1,470 gpm
Design Flow Rate Per PV (brine)	35 gpm	35 gpm	35 gpm	35 gpm	35 gpm	35 gpm	35 gpm	35 gpm	35 gpm	35 gpm	35 gpm	35 gpm
Motor (TEFC)	5 HP	5 HP	7.5 HP	15 HP	15 HP	20 HP	25 HP	40 HP	40 HP	25 HP x2	25 HP x2	40 HP x2
Installation and Utility Requirements												
Inlet (flooded suction)	3"	3"	4"	6"	6"	6"	8"	8"	8"	10"	10"	12"
Permeate	2"	2.5"	3"	4"	4"	6"	6"	6"	6"	6"	6"	8"
Brine	2"	2.5"	3"	4"	4"	6"	6"	6"	6"	8"	8"	8"
Inlet Water Pressure	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI	30 - 90 PSI
Design Drain Flow Rate	67 gpm	100 gpm	167 gpm	267 gpm	334 gpm	401 gpm	501 gpm	668 gpm	801 gpm	1,002 gpm	1,202 gpm	1,403 gpm
FLA (HPP + CP only)	40	45	55	95	95	120	125	165	195	235	285	315
Footprint and Weight												
Length	276"	276"	276"	276"	276"	276"	276"	276"	276"	276"	276"	276"
Width	42"	42"	42"	72"	72"	84"	84"	102'	90"	163"	163"	153"
Height	84"	84"	96"	96"	96"	96"	96"	96"	96"	108"	108"	108"
Weight w/o Membranes	4,000 lbs	4,000 lbs	5,000 lbs	7,500 lbs	9,000 lbs	10,500 lbs	10,500 lbs	14,500 lbs	21,000 lbs	25,000 lbs	30,000 lbs	35,000 lbs
Weight of Membranes	500 lbs	500 lbs	700 lbs	1,200 lbs	1,500 lbs	1,800 lbs	2,200 lbs	3,500 lbs	3,600 lbs	4,000 lbs	7,000 lbs	10,000 lbs
Wet Weight	5,000 lbs	5,000 lbs	7,000 lbs	10,500 lbs	12,800 lbs	14,000 lbs	16,500 lbs	25,000 lbs	28,000 lbs	42,500 lbs	55,000 lbs	68,500 lbs

Note(s): Product sheet based on 5 gpm per membrane (87.5% recovery, 440 ft² & 16.4 gfd)

Desalitech ReFlex™ Product Sheet (SI)

CCRO Technology



ReFlex MODEL	R2	R3	R5	R8	R10	R12	R15	R20	R24	R30	R36	R42
Average Permeate Flow	274 m ³ /d	408 m ³ /d	682 m ³ /d	1,092 m ³ /d	1,363 m ³ /d	1,637 m ³ /d	2,045 m ³ /d	2,726 m ³ /d	3,274 m ³ /d	4,092 m ³ /d	4,908 m ³ /d	5,727 m ³ /d
28 lmh (40.9 m ² membrane)*	11.4 m ³ /h	17.0 m ³ /h	28.4 m ³ /h	45.5 m ³ /h	56.8 m ³ /h	68.2 m ³ /h	85.2 m ³ /h	113.6 m ³ /h	136.4 m ³ /h	170.5 m ³ /h	204.5 m ³ /h	238.6 m ³ /h
24 lmh (37.2 m ² membrane)	9.1 m ³ /h	13.6 m ³ /h	22.7 m ³ /h	36.4 m ³ /h	45.5 m ³ /h	54.5 m ³ /h	68.2 m ³ /h	90.9 m ³ /h	109.1 m ³ /h	136.4 m ³ /h	163.4 m ³ /h	190.9 m ³ /h
15 lmh (37.2 m ² membrane)	5.7 m ³ /h	8.5 m ³ /h	14.2 m ³ /h	22.7 m ³ /h	28.4 m ³ /h	34.1 m ³ /h	42.6 m ³ /h	56.8 m ³ /h	68.2 m ³ /h	85.2 m ³ /h	102.3 m ³ /h	119.3 m ³ /h
Cartridge Filtration												
Housing Quantity	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)	One (1)
Cartridge Filter Length (64 mm dia.)	1016 mm	1016 mm	1016 mm	1016 mm	1016 mm	1016 mm	1016 mm	1016 mm	1016 mm	1016 mm	1016 mm	1016 mm
Cartridge Filter Qty	3	6	10	15	15	19	25	32	40	52	60	68
High Pressure Pump (HPP)												
Design Flow Rate - CC (28 lmh)	12.6 m ³ /h	19.0 m ³ /h	31.6 m ³ /h	50.6 m ³ /h	63.2 m ³ /h	75.9 m ³ /h	94.9 m ³ /h	126.5 m ³ /h	151.8 m ³ /h	189.7 m ³ /h	227.7 m ³ /h	265.6 m ³ /h
Design Flow Rate - PF (28 lmh)	15.2 m ³ /h	22.8 m ³ /h	37.9 m ³ /h	60.7 m ³ /h	75.9 m ³ /h	91.1 m ³ /h	113.8 m ³ /h	151.8 m ³ /h	182.1 m ³ /h	227.7 m ³ /h	273.2 m ³ /h	318.8 m ³ /h
Design Boost Pressure	17 bar	17 bar	17 bar	17 bar	17 bar	17 bar	17 bar	17 bar	17 bar	17 bar	17 bar	17 bar
Motor (TEFC)	15 kW	18.5 kW	40 kW	45 kW	45 kW	55 kW	55 kW	75 kW	90 kW	55 kW x2	90 kW x2	75 kW x2
FilmTec™ Membrane Elements and Housings												
Element Quantity	10	15	25	40	50	60	75	100	120	150	180	210
Element Area (200 mm dia.)	37-41 m ²	37-41 m ²	37-41 m ²	37-41 m ²	37-41 m ²	37-41 m ²	37-41 m ²	37-41 m ²	37-41 m ²	37-41 m ²	37-41 m ²	37-41 m ²
Housing Quantity (PV's)	2	3	5	8	10	12	15	20	24	30	36	42
Elements per Housing (6M long)	5	5	5	5	5	5	5	5	5	5	5	5
Circulation Pump (CP)												
Design Flow Rate (3 bar)	16 m ³ /h	24 m ³ /h	40 m ³ /h	64 m ³ /h	80 m ³ /h	96 m ³ /h	120 m ³ /h	160 m ³ /h	192 m ³ /h	240 m ³ /h	288 m ³ /h	336 m ³ /h
Design Flow Rate Per PV (brine)	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h	8.0 m ³ /h
Motor (TEFC)	3 kW	3 kW	5.5 kW	11 kW	11 kW	15 kW	18.5 kW	30 kW	30 kW	18.5 kW x2	18.5 kW x2	30 kW x2
Installation and Utility Requirements												
Inlet (flooded suction) [mm]	80	80	100	150	150	150	200	200	200	250	250	300
Permeate [mm]	50	80	80	100	100	150	150	150	150	150	150	200
Brine [mm]	50	80	80	100	100	150	150	150	150	200	200	200
Inlet Water Pressure	2 - 6 bar	2 - 6 bar	2 - 6 bar	2 - 6 bar	2 - 6 bar	2 - 6 bar	2 - 6 bar	2 - 6 bar	2 - 6 bar	2 - 6 bar	2 - 6 bar	2 - 6 bar
Design Drain Flow Rate	15.2 m ³ /h	22.8 m ³ /h	37.9 m ³ /h	60.7 m ³ /h	75.9 m ³ /h	91.1 m ³ /h	113.8 m ³ /h	151.8 m ³ /h	182.1 m ³ /h	227.7 m ³ /h	273.2 m ³ /h	318.8 m ³ /h
FLA (HPP + CP only)	50	55	65	115	115	145	150	200	235	280	340	380
Footprint and Weight												
Length [mm]	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010
Width [mm]	1,067	1,067	1,067	1,829	1,829	2,134	2,134	2,591	2,286	4,140	4,140	3,886
Height [mm]	2,134	2,134	2,438	2,438	2,438	2,438	2,438	2,438	2,438	2,743	2,743	2,743
Weight w/o Membranes [kg]	1,814	1,814	2,268	3,402	4,082	4,763	4,763	6,577	9,525	11,340	13,608	15,876
Weight of Membranes [kg]	227	227	318	544	680	816	998	1,588	1,633	1,814	3,175	4,536
Wet Weight [kg]	2,268	2,268	3,175	4,763	5,806	6,350	7,484	11,340	12,701	19,278	24,948	31,071

Note(s): Product sheet based on 1.1 m³/h (5 gpm) per membrane, 87.5% recovery, 40.9 m² (440 ft²) membrane & 28 lmh (16.4 gfd)