

# REVERSE OSMOSIS AND ULTRAFILTRATION MEMBRANES

MWG, LG, Vontron, CSM



## MWG Membranes



Ref.	Description	Fam.	Subfam.	Disp. Stock	
MMRO1812-75	MWG 1.8" MEMBRANE RO1812-75	30	151	OK	
MMRO2012-100	MWG 2" MEMBRANE RO2012-100	30	151	OK	
MMRO2012-200	MWG 2" MEMBRANE RO2012-200	30	151	OK	
MMNF2012R	MWG 2" MEMBRANE NF-2012R	30	151	OK	
MMRO3012-300	MWG 3" MEMBRANE RO3012-300	30	156	OK	
MMRO3012-400	MWG 3" MEMBRANE RO3012-400	30	156	OK	
MMRO3013-400	MWG 3" MEMBRANE RO3013-400	30	156	OK	
MMXLP2521	MWG 2.5" MEMBRANE XLP-2521	30	161	OK	
MMXLP2540	MWG 2.5" MEMBRANE XLP-2540	30	161	OK	
MMXLP4040	MWG 4" MEMBRANE XLP-4040	30	162	OK	
MMXLP8040HF	MWG 8" MEMBRANE XLP-8040HF	35	163	OK	
MMULP2521	MWG 2.5" MEMBRANE ULP-2521	30	161	OK	
MMULP4021	MWG 4" MEMBRANE ULP-4021	30	162	OK	
MMULP4040	MWG 4" MEMBRANE ULP-4040	30	162	OK	
MMULP4040MR2	MWG 4" MEMBRANE ULP4040MR2	30	162	OK	
MMULP8040HF	MWG 8" MEMBRANE ULP-8040HF	35	163	OK	
MMULP8040MR2	MWG 8" MEMBRANE ULP-8040MR-2	35	163	OK	
MMBW2521	MWG 2.5" MEMBRANE BW-2521	30	161	OK	
MMBW4040	MWG 4" MEMBRANE BW-4040	30	162	OK	
MMBW8040	MWG 8" MEMBRANE BW-8040	35	163	OK	
MMBW8040-2	MWG 8" MEMBRANE BW-8040-2	35	163	OK	
MMBW8040FR	MWG 8" MEMBRANE BW-8040FR	35	163	NO	
MMBW8040XLFR	MWG 8" MEMBRANE BW8040XLFR	35	163	OK	
MMES8040UFR	MWG 8" MEMBRANE ES8040UFR	35	163	OK	
MMSW2521	MWG 2.5" MEMBRANE SW-2521	30	161	OK	
MMSW2540	MWG 2.5" MEMBRANE SW-2540	30	161	OK	
MMSW4021	MWG 4" MEMBRANE SW-4021	30	162	OK	
MMSW4040MR	MWG 4" MEMBRANE SW-4040MR	30	162	OK	
MMSW8040HR	MWG 8" MEMBRANE SW-8040HR	35	163	OK	



## MWG Membranes

Ref.	Mod.	Permeate flow rate GPD (m <sup>3</sup> /d)	Rejection NaCl (%)	Effective area m2 (ft2)	Spacer (mil)	Test	NSF
MMRO1812-75	TW RO	75 (0,28)	98,0	0,37 (4)	X	1	58
MMRO2012-100	TW RO	100 (0,38)	98,0	0,56 (6)	X	1	58
MMRO2012-200	TW RO	200 (0,76)	97,0	0,75 (8)	X	9	58
MMNF2012R	TW RO	150 (0,57)	85,0	0,59 (6)	X	2	X
MMRO3012-300	TW RO	300 (1,14)	98,0	1,3 (14)	X	1	58
MMRO3012-400	TW RO	400 (1,52)	98,0	1,3 (14)	X	1	58
MMRO3013-400	TW RO	400 (1,52)	98,0	1,5 (16,5)	X	1	X
MMXLP2521	XLP	400 (1,5)	99,2	1,3 (14)	28	3	61
MMXLP2540	XLP	600 (2,27)	99,2	2,5 (27)	28	3	61
MMXLP4040	XLP	2.600 (9,8)	99,2	7,9 (85)	28	4	61
MMXLP8040HF	XLP	13.000 (49,2)	99,0	40,9 (440)	28	4	61
MMULP2521	LP	400 (1,52)	99,2	1,3 (14)	28	5	61
MMULP4021	LP	950 (3,6)	99,3	3,4 (36)	28	5	61
MMULP4040	LP	2.700 (10,2)	99,5	9,3 (100)	28	5	61
MMULP4040MR2	LP	2.700 (10,2)	99,5	9,3 (100)	28	5	X
MMULP8040HF	LP	12.500 (47,3)	99,5	40,9 (440)	28	5	61
MMULP8040MR2	LP	10.500 (39,7)	99,6	40,9 (440)	28	5	61
MMBW2521	BW	400 (1,52)	99,5	1,3 (14)	28	6	61
MMBW4040	BW	2.400 (9,1)	99,6	7,9 (85)	28	6	61
MMBW8040	BW	10.500 (39,7)	99,6	37,2 (400)	28	6	61
MMBW8040-2	BW	10.500 (39,7)	99,7	37,2 (400)	28	6	61
MMBW8040FR	FR	9.500 (35,9)	99,7	34 (365)	34	6	61
MMBW8040XLFR	FR	11.500 (43,5)	99,75	37,2 (400)	34	6	X
MMES8040UFR	FR	10.500 (39,7)	99,6	37,2 (400)	34	10	X
MMSW2521	SW	250 (0,9)	99,7	1,3 (14)	28	7	61
MMSW2540	SW	500 (1,9)	99,7	2,5 (27)	28	7	61
MMSW4021	SW	700 (2,6)	99,7	3,4 (36)	28	7	61
MMSW4040MR	SW	1.800 (6,8)	99,7	7,9 (85)	28	7	61
MMSW8040HR	SW	6.500 (24,6)	99,8	37,2 (400)	28	7	61



## MWG Membranes

Test condition	Pressure (psi)	Temperature of solution NaCl (°C)	Concentration of NaCl solution (ppm)	Concentration of MgSO4 solution (ppm)	pH	Recovery rate (%)
1	60	25	250	-	7,5-8,0	15
2	60	25	250	250	7,5-8,0	15
3	100	25	500	-	7,5-8,0	8
4	100	25	500	-	7,5-8,0	15
5	150	25	1500	-	7,5-8,0	15
6	225	25	2000	-	7,5-8,0	15
7	800	25	32000	-	7,5-8,0	8
8	70	25	500	2000	7,5-8,0	15
9	80	25	250	-	7,5-8,0	15
10	150	25	2000	-	7,5-8,0	15

**TW RO:** Residential RO - **XLP:** Extra Low Pressure - **BW:** Brackish Water - **NF:** Nano Filtration - **TW NF:** Industrial NF - **LP:** Low Pressure - **FR:** Fouling Resistant - **SW:** Sea Water

Certificates	Manufacturer	Sectors
DM174-2004	<b>MWG</b>	Domestic, Commercial, Industrial



## LG Membranes



Ref.	Description	Fam.	Subfam.	Disp. Stock	
MLBW2521ES	2,5" LG MEMBRANE BW 2521 ES	30	153	OK	
MLBW2540ES	2,5" LG MEMBRANE BW 2540 ES	30	153	OK	
MLBW4021ES	4" LG MEMBRANE BW 4021 ES	30	154	OK	
MLBW4040ES	4" LG MEMBRANE BW 4040 ES	30	154	OK	
MLBW8-400ESL	8" LG MEMBRANE BW 400 ESL	30	168	OK	
MLBW8-440ESL	8" LG MEMBRANE BW 440 ESL	30	168	OK	
MLBW2521R	2,5" LG MEMBRANE BW 2521 R	30	153	OK	
MLBW2540R	2,5" LG MEMBRANE BW 2540 R	30	153	OK	
MLBW4021R	4" LG MEMBRANE BW 4021 UES	30	154	OK	
MLBW4040R	4" LG MEMBRANE BW 4040 R	30	154	OK	
MLBW8-400RG2	8" LG MEMBRANE BW 400 R G2	30	168	OK	
MLBW8-440RG2	8" LG MEMBRANE BW 440 R G2	30	168	OK	
MLBW8-440RDURA	8" LG MEMBRANE BW 440 R DURA	35	168	OK	
MLBW2521UES	2,5" LG MEMBRANE BW 2521 UES	30	153	OK	
MLBW2540UES	2,5" LG MEMBRANE BW 2540 UES	30	153	OK	
MLBW4021UES	4" LG MEMBRANE BW 4021 UES	30	154	OK	
MLBW4040UES	4" LG MEMBRANE BW 4040 UES	30	154	OK	
MLLP8-MOST	8" LG MEMBRANE MOST	30	168	OK	
MLLP8-MOST+	8" LG MEMBRANE MOST+	30	168	OK	
MLBW8-400RDURA	8" LG MEMBRANE BW 400 R DURA	35	168	OK	
MLBW8-400AFRG2	8" LG MEMBRANE BW 400 AFR G2	30	168	OK	
MLSW4040R	4" LG MEMBRANE SW 4040 R	30	154	OK	
MLSW8-400ES	8" LG MEMBRANE SW 400 ES	30	168	OK	
MLSW8-440ES	8" LG MEMBRANE SW 440 ES	30	168	OK	
MLSW8-400R	8" LG MEMBRANE SW 400 R	35	168	OK	
MLSW8-440R	8" LG MEMBRANE SW 440 R	35	168	OK	



## LG Membranes

Ref.	Mod.	Permeate flow rate GPD (m <sup>3</sup> /d)	Rejection NaCl rate (%)	Effective area m2 (ft2)	Spacer (mil)	Test	NSF
MLBW2521ES	BW	345 (1,3)	99,5	0,9 (9)	28	5	61
MLBW2540ES	BW	750 (2,8)	99,5	2,0 (22)	28	5	61
MLBW4021ES	BW	1000 (3,8)	99,5	3,2 (34)	28	5	61
MLBW4040ES	BW	2500 (9,5)	99,5	7,9 (85)	28	5	61
MLBW8-400ESL	BW	10500 (39,7)	99,5	37 (400)	34	5	61
MLBW8-440ESL	BW	11500 (43,5)	99,6	41 (440)	28	5	61
MLBW2521R	BW	345 (1,3)	99,6	0,9 (9)	28	1	61
MLBW2540R	BW	750 (2,8)	99,6	2,0 (22)	28	1	61
MLBW4021R	BW	1000 (3,8)	99,6	3,2 (34)	28	1	61
MLBW4040R	BW	2500 (9,5)	99,6	7,9 (85)	28	1	61
MLBW8-400RG2	BW	11500 (43,5)	99,8	7,9 (85)	34 low dP	1	61
MLBW8-440RG2	BW	12650 (47,9)	99,8	41 (440)	28	1	61
MLBW8-440RDURA	BW	12100 (45,8)	99,7	41 (440)	28	1	61
MLBW2521UES	LP	345 (1,3)	99,0	0,9 (9)	28	3	61
MLBW2540UES	LP	800 (3,0)	99,0	2,0 (22)	28	3	61
MLBW4021UES	LP	1000 (3,8)	99,0	3,2 (34)	28	3	61
MLBW4040UES	LP	2700 (10,2)	99,0	7,9 (85)	28	3	61
MLLP8-MOST	LP	13200 (49,2)	99,1	7,9 (85)	34 low dP	3	61
MLLP8-MOST+	LP	14300 (54,1)	99,1	7,9 (85)	28 low dP	3	61
MLBW8-400RDURA	FR	11000 (41,6)	99,7	37 (400)	34 low dP	1	61
MLBW8-400AFRG2	FR	11500 (43,5)	99,7	37 (400)	34 low dP	1	61
MLSW4040R	SW	1950 (7,4)	99,7	7,4 (80)	28	4	61
MLSW8-400ES	SW	13700 (51,9)	99,6	37 (400)	34 low dP	4	61
MLSW8-440ES	SW	15070 (57,0)	99,8	41 (440)	28 low dP	4	61
MLSW8-400R	SW	9000 (34,1)	99,85	37 (400)	34	4	61
MLSW8-440R	SW	9900 (37,5)	99,85	41 (440)	28	4	61



## LG Membranes

Test Condition	Pressure (psi)	Temperature of solution NaCl (°C)	Concentration of NaCl Solution (ppm)	Concentration of MgSO4 solution (ppm)	pH	Recovery rate (%)
1	225	25	2000	-	7	15 (8% for type 2521 and 4021)
2	150	25	1500	-	7	15
3	100	25	500	-	7	15 (8% for type 2521 and 4021)
4	800	25	32000	-	7	8
5	150	25	2000	-	7	15 (8% for type 2521 and 4021)
11	100	25	2000	MgSO4 2000	7,5	15

BW: Brackish Water - LP: Low Pressure - SW: Sea Water - FR: Fouling Resistant

Certificates	Manufacturer	Sectors
NSF61	LG	Commercial, Industrial



## Vontron Membranes



Ref	Description	Fam.	Subfam.	Disp. Stock	
MVULP1812-50	VONTRON 1.8" MEMBRANE ULP1812-50	30	152	OK	
MVULP1812-75	VONTRON 1.8" MEMBRANE ULP1812-75	30	152	OK	
MVULP2012-100	VONTRON 2" MEMBRANE ULP2012-100	30	152	OK	
MVULP2012-200	VONTRON 2" MEMBRANE ULP2012-200	30	152	OK	
MVULP3012	VONTRON 3" MEMBRANE ULP3012-300	30	157	OK	
MVULP3013-1000	VONTRON 3" MEMBRANE ULP3013-1000	30	157	OK	
MVXLP11-4040	VONTRON 4" MEMBRANE XLP11-4040	30	166	OK	
MVULP21-2521	VONTRON 2.5" MEMBRANE ULP21-2521	30	159	OK	
MVULP21-2540	VONTRON 2.5" MEMBRANE ULP21-2540	30	159	OK	
MVULP21-4021	VONTRON 4" MEMBRANE ULP21-4021	30	166	OK	
MVULP21-4040	VONTRON 4" MEMBRANE ULP21-4040	30	166	OK	
MVULP31-4040	VONTRON 4" MEMBRANE ULP31-4040	30	166	OK	
MVULP22-8040	VONTRON 8" MEMBRANE ULP22-8040	35	167	OK	
MVULP32-8040	VONTRON 8" MEMBRANE ULP32-8040	35	167	OK	
MVLP21-4040	VONTRON 4" MEMBRANE LP21-4040	30	166	OK	
MVLP22-8040	VONTRON 8" MEMBRANE LP22-8040	35	167	OK	
MVSW11-4021	VONTRON 4" MEMBRANE SW11-4021	30	166	OK	
MVSW11-2540	VONTRON 2.5" MEMBRANE SW11-2540	30	159	NO	
MVSW8040LE-440	VONTRON 8" MEMBRANE SW8040LE-440	30	167	NO	
MVSW8040XLE-440	VONTRON 8" MEMBRANE SW8040XLE-440	30	167	NO	

Ref	Mod.	Permeate flow rate GPD (m <sup>3</sup> /d)	Rejection NaCl rate (%)	Effective area m <sup>2</sup> (ft <sup>2</sup> )	Spacer (mil)	Test	NSF
MVULP1812-50	TW RO	50 (0,19)	99,0	X X	X	1	58
MVULP1812-75	TW RO	75 (0,28)	98,0	X X	X	1	58
MVULP2012-100	TW RO	100 (0,38)	99,0	X X	X	1	58
MVULP2012-200	TW RO	200 (0,76)	92,0	X X	X	12	58
MVULP3012	TW RO	300 (1,14)	98,5	X X	X	3	58
MVULP3013-1000	TW RO	1000 (3,8)	90,0	X X	X	12	X
MVXLP11-4040	XLP RO	2.600 (9,8)	98,2	9,3 (100)	28	3	61
MVULP21-2521	LP	300 (1,1)	99,0	1,3 (14)	28	4	61
MVULP21-2540	LP	750 (2,84)	99,0	2,8 (30)	28	4	61
MVULP21-4021	LP	950 (3,6)	99,0	3,3 (36)	28	4	61
MVULP21-4040	LP	2.600 (9,8)	99,5	9,3 (100)	28	5	61
MVULP31-4040	LP	2.000 (7,6)	99,6	9,3 (100)	28	5	61
MVULP22-8040	LP	12.100 (45,7)	99,0	37,2 (400)	28	5	61
MVULP32-8040	LP	10.500 (39,7)	99,5	37,2 (400)	28	5	61
MVLP21-4040	LP	2.800 (10,6)	99,6	9,3 (100)	28	7	61
MVLP22-8040	LP	10.500 (39,7)	99,7	37,2 (400)	28	7	61
MVSW11-4021	SW	750 (2,8)	99,5	3,1 (33)	28	9	61
MVSW11-2540	SW	600 (2,3)	99,5	2,6 (28)	28	10	61
MVSW8040LE-440	SW	9500 (35,9)	99,8	40,9 (440)	28	10	61
MVSW8040XLE-440	SW	12.100 (45,8)	99,7	40,9 (440)	28	10	61





## Vontron Membranes

Test Condition	Pressure (psi)	Temperature of solution NaCl (°C)	Concentration of NaCl Solution (ppm)	Concentration of MgSO4 solution (ppm)	pH	Recovery rate (%)
1	60	25	250	-	6,5-8,5	15
2	60	25	250	CaCl2 250	6,5-8,5	15
3	100	25	500	-	7,5	15
4	150	25	1500	-	7,5	8
5	150	25	1500	-	7,5	15
6	150	25	500	-	7,5	15
7	225	25	2000	-	7,5	15
8	150	25	2000	-	7,5	15
9	800	25	32000	-	7,5	4
10	800	25	32000	-	7,5	8
11	100	25	2000	MgSO4 2000	7,5	15
12	100	25	50	-	7,5	50

**TW RO:** Residential RO - **XLP RO:** Extra Low Pressure - **BW:** Brackish Water - **SW:** Sea Water - **TW NF:** Industrial NF - **LP:** Low Pressure - **FR:** Sea Water - **NF:** Nano Filtration

Certificates	Manufacturer	Sectors
DM174-2004	Vontron	Domestic, Commercial, Industrial



## CSM Membranes



Ref.	Description	Fam.	Subfam.	Disp. Stock	
MCRE1812-HR+	CSM 1.8" MEMBRANE RE1812-HR+	30	150	NO	
MCRE2012-150	CSM 2" MEMBRANE RE2012-150	30	150	OK	
MCRE2012-400	CSM 2" MEMBRANE RE2012-400	30	150	OK	
MCRE2012-LP	CSM 2" MEMBRANE RE2012-LP	30	150	OK	
MCRE2012-LPF	CSM 2" MEMBRANE RE2012-LPF	30	150	OK	
MCRE2812-300	CSM 2.8" MEMBRANE RE2812-300	30	155	OK	
MCRE3012-500	CSM 3" MEMBRANE RE3012-500	30	165	OK	
MCRE3512-600	CSM 3.5" MEMBRANE RE3512-600	30	155	OK	
MCRE2540-BLN	CSM 2.5" MEMBRANE RE2540-BLN	30	160	OK	
MCRE2540-BLF	CSM 2.5" MEMBRANE RE2540-BLF	30	160	OK	
MCRE2540-BLR	CSM 2.5" MEMBRANE RE2540-BLR	30	160	OK	
MCRE4021-BLN	CSM 4" MEMBRANE RE4021-BLN	30	165	OK	
MCRE4021-BLF	CSM 4" MEMBRANE RE4021-BLF	30	165	OK	
MCRE4040-BLN	CSM 4" MEMBRANE RE4040-BLN	30	165	OK	
MCRE4040-BLF	CSM 4" MEMBRANE RE4040-BLF	30	165	OK	

Ref.	Mod.	Permeate flow rate GPD (m <sup>3</sup> /d)	Rejection NaCl (%)	Effective area m <sup>2</sup> (ft <sup>2</sup> )	Spacer (mil)	Test	NSF
MCRE1812-HR+	TW RO	80 (0,30)	99		X	6	58
MCRE2012-150	TW RO	150 (0,57)	98	0,59 (6,4)	X	6	58
MCRE2012-400	TW RO	400 (1,52)	96		X	6	58
MCRE2012-LP	TW RO	50 (0,19)	93		X	7	58
MCRE2012-LPF	TW RO	60 (0,22)	93		X	7	58
MCRE2812-300	TW RO	350 (1,32)	97		X	6	61
MCRE3012-500	TW RO	500 (1,90)	97		X	10	X
MCRE3512-600	TW RO	600 (2,27)	95		X	9	X
MCRE2540-BLN	LP	930 (3,50)	99,2	2,5 (27)	X	2	X
MCRE2540-BLF	LP	930 (3,50)	99,2	2,5 (27)	X	3	X
MCRE2540-BLR	LP	740 (2,80)	99,4	2,5 (27)	X	2	X
MCRE4021-BLN	LP	1200 (4,50)	99,2	3,3 (35)	X	2	X
MCRE4021-BLF	LP	1200 (4,50)	99,2	3,3 (35)	X	3	61
MCRE4040-BLN	LP	2600 (9,80)	99,4	7,9 (85)	X	2	61
MCRE4040-BLF	LP	2500 (9,50)	99,2	7,9 (85)	X	3	61



## CSM Membranes

Ref	Description	Fam.	Subfam.	Disp. Stock	
MCRE4040-BLR	CSM 4" MEMBRANE RE4040-BLR	30	165	OK	
MCRE8040-BLN	CSM 8" MEMBRANE RE8040-BLN	35	190	OK	
MCRE8040-BLN440	CSM 8" MEMBRANE RE8040-BLN440	35	190	OK	
MCRE8040-BLR	CSM 8" MEMBRANE RE8040-BLR	35	190	OK	
MCRE8040-BLR440	CSM 8" MEMBRANE RE8040-BLR440	35	190	OK	
MCRE8040-BLF	CSM 8" MEMBRANE RE8040-BLF	35	190	OK	
MCRE8040-BLF440	CSM 8" MEMBRANE RE8040-BLF440	35	190	OK	
MCRE2540-BE	CSM 2.5" MEMBRANE RE2540-BE	30	160	OK	
MCRE4021-BE	CSM 4" MEMBRANE RE4021-BE	30	165	OK	
MCRE4040-BE	CSM 4" MEMBRANE RE4040-BE	30	165	OK	
MCRE8040-BE440	CSM 8" MEMBRANE RE8040-BE440	35	190	OK	
MCRE8040-BE34	CSM 8" MEMBRANE RE8040-BE34	35	190	OK	
MCRE2540-FEn	CSM 2.5" MEMBRANE RE2540-FEn	30	160	NO	
MCRE4040-FEn	CSM 4" MEMBRANE RE4040-FEn	30	165	OK	
MCRE8040-FEn34	CSM 8" MEMBRANE RE8040-FEn34	35	190	OK	
MCRE8040-FEn	CSM 8" MEMBRANE RE8040-FEn	35	190	NO	

Ref	Mod.	Permeate flow rate GPD (m <sup>3</sup> /d)	Rejection NaCl (%)	Effective area m <sup>2</sup> (ft <sup>2</sup> )	Spacer (mil)	Test	NSF
MCRE4040-BLR	LP	2100 (7,90)	99,6	7,9 (85)	X	2	61
MCRE8040-BLN	LP	12000 (45,40)	99,5	37,2 (400)	X	2	61
MCRE8040-BLN440	LP	13000 (49,20)	99,5	40,9 (440)	X	2	61
MCRE8040-BLR	LP	10000 (37,90)	99,6	37,2 (400)	X	2	61
MCRE8040-BLR440	LP	11000 (41,60)	99,6	40,9 (440)	X	2	61
MCRE8040-BLF	LP	11500 (43,50)	99,2	37,2 (400)	X	3	61
MCRE8040-BLF440	LP	12650 (47,90)	99,2	40,9 (440)	X	3	X
MCRE2540-BE	BW	1000 (3,80)	99,5	2,5 (27)	X	1	61
MCRE4021-BE	BW	1200 (4,50)	99,5	3,3 (35)	X	1	X
MCRE4040-BE	BW	2400 (9,10)	99,7	7,9 (85)	X	1	61
MCRE8040-BE440	BW	12000 (45,40)	99,7	40,9 (440)	X	1	61
MCRE8040-BE34	BW	11000 (41,60)	99,7	37,2 (400)	34	1	61
MCRE2540-FEn	FR	1000 (3,80)	99,5	2,5 (27)	X	1	X
MCRE4040-FEn	FR	2400 (9,10)	99,7	7,9 (85)	X	1	X
MCRE8040-FEn34	FR	11000 (41,60)	99,7	37,2 (400)	34	1	61
MCRE8040-FEn	FR	11000 (41,60)	99,7	37,2 (400)	X	1	61



## CSM Membranes

Ref	Description	Fam.	Subfam.	Disp. Stock	
MCRE2540-FHF	CSM 2.5" MEMBRANE RE2540-FHF	30	160	OK	
MCNE2540-90	CSM 2.5" MEMBRANE NE2540-90	30	160	OK	
MCNE4040-90	CSM 4" MEMBRANE NE4040-90	30	165	OK	

Ref	Mod.	Permeate flow rate GPD (m <sup>3</sup> /d)	Rejection NaCl (%)	Effective area m <sup>2</sup> (ft <sup>2</sup> )	Spacer (mil)	Test	NSF
MCRE2540-FHF	SW	1200 (4,60)	99,4	2,5 (27)	X	4	X
MCNE2540-90	NF	540 (2,00)	90-97	2,5 (27)	X	5	X
MCNE4040-90	NF	1700 (6,40)	90-97	7,9 (85)	X	5	61

Test condition	Pressure (psi)	Temperature of solution NaCl (°C)	Concentration of NaCl solution (ppm)	Concentration of MgSO <sub>4</sub> solution (ppm)	pH	Recovery rate (%)
1	225	25	2000	-	6,5-7,0	8 ± 15%
2	150	25	1500	-	6,5-7,0	8 ± 15%
3	100	25	500	-	6,5-7,0	8 ± 15%
4	800	25	32000	-	6,5-7,0	4 ± 8%
5	75	25	2000	500	6,5-7,0	15%
6	60	25	200	-	6,5-7,0	15%
7	20	25	100	-	6,5-7,0	15%
8	60	25	250	-	6,5-7,0	15%
9	60	25	200	-	6,5-7,0	30%
10	80	25	200	-	6,5-7,0	40%
11	150	25	2000	-	6,5-7,0	15%

**TW RO:** Residential RO - **LP:** Low Pressure - **BW:** Brackish Water - **SW:** Sea Water - **TW NF:** Industrial NF - **FR:** Fouling Resistant - **CR:** Chlorine Resistant - **NF:** Nano Filtration **Produttore:** CSM

Certificates	Manufacturer	Sectors
DM174-2004	CSM	Domestic, Commercial, Industrial



## CSM Membranes Brine Seal and Interconnector

- Each membrane element supplied with one brine seal and one interconnector (excepted for 2,5" membrane element, supplied without interconnector).

Ref	Description	Fam.	Subfam.	Disp. Stock	
DC005	EPDM BRINE SEAL 2.5" CSM	30	160	OK	
DD003	EPDM BRINE SEAL 4" CSM	30	165	OK	
EA798	EPDM BRINE SEAL 8" CSM	35	190	OK	

Ref	Description	Material	For Membranes
DC005	EPDM BRINE SEAL 2.5" CSM	EPDM	2,5"
DD003	EPDM BRINE SEAL 4" CSM	EPDM	4"
EA798	EPDM BRINE SEAL 8" CSM	EPDM	8"

Certificates	Manufacturer	Sectors
DM174-2004		Domestic, Industrial

Ref	Description	Fam.	Subfam.	Disp. Stock	
DD004	ABS FEMALE INTERCONNECTOR CSM 2.5" & 4" WITH O-RING - WHITE COLOR	30	165	OK	
EA799	ABS MALE INTERCONNECTOR 1.125" CSM WITH O-RING -BW TYPE BLACK COLOR	35	190	OK	

Ref	Material	Color	For Membranes
DD004	ABS	White	2,5" - 4"
EA799	ABS	Black	8"

Certificates	Manufacturer	Sectors
DM174-2004		Domestic, Industrial



## Antiscaling for R. O. Membranes Permascale Eut 110



- PERMASCALE EUT110 is a product that prevents scales and iron sediment on R.O. membranes systems;
- For industrial systems and for potable water treatment systems;
- Very effective on various kinds of water, minimize the fouling and reduce the frequency of membranes cleaning;
- Particularly suitable for big plants with permeate flows higher than 100 m3/day;
- Compatible with all kinds of membranes;
- Replace totally or partially the acidification;
- Easy to use due to the liquid form.

### Use

- Injection by dosing pump of pure or diluted product.
- The dosage is according to the concentration of scaling salts and iron, and can vary from 2 to 10 cm3/m3 of feed water

### Instructions and Packaging

- Handling: following safety data sheet. Take the normal precautions to handle chemical products.
- Packaging: 20 kg drum.
- Storage: closed on the original packaging, sheltered from cold and heat.

Characteristics:	
Formulation	special phosphonated
pH	7,8 ± 0,5
Appearance	light yellow liquid
Density a 20°C	1,30 ± 0,05 g/ml
Checking	phosphonated value
Solubility in water	complete

Ref	Description	Fam.	Subfam.	Disp. Stock	
EA100	MWG PERMASCALE EUT 110 - DRUM 20 KG	35	191	OK	

Certificates	Manufacturer	Sectors
	<b>MWG</b>	Commercial, Industrial



## Antiscaling for R.O. Membranes Permascale EUT 120



- PERMASCALE EUT120 is a product that prevents scales and iron sediment on R.O. membranes systems;
- Very effective on various kinds of water, minimize the fouling and reduce the frequency of membranes cleaning;
- Particularly suitable for plants with permeate flows lower than 100 m3/day;
- Compatible with all kinds of membranes;
- Replace totally or partially the acidification;
- Easy to use due to the liquid form.

### Use

- Injection by dosing pump of pure or diluted product:
- The dosage is according to the concentration of scaling salts and iron, and can vary from 3 to 13 cm3/m3 of feed water.

### Instructions and packaging

- Handling: following safety data sheet. Take the normal precautions to handle chemical products.
- Packaging: 20 kg drum.
- Storage: closed on the original packaging, sheltered from cold and heat.

Characteristics	
Formulation	special phosphonated
pH	7,5 ± 0,5
Appearance	light yellow liquid
Density a 20°C	1,30 ± 0,02 g/ml
Checking	phosphonated value
Solubility in water	complete

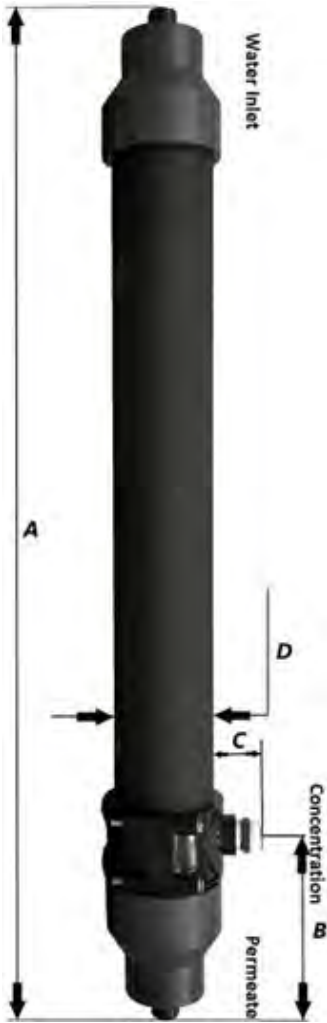
Ref	Description	Fam.	Subfam.	Disp. Stock
EA101	MWG PERMASCALE EUT 120 - DRUM 20 KG	35	191	OK

Box: WxLxH	Box: Q.ty	Box: Weight	Pallet: WxLxH	Pallet: Q.ty	Pallet: Weight

Certificates	Manufacturer	Sectors
	<b>MWG</b>	Commercial, Industrial



## UF10 and UF20 MWG Ultrafiltration Modules



- Hollow Fiber UF membranes in PVDF;
- Nominal MWCO, Dextrane < 150.000 Dalton;
- Outside to inside flow direction;
- Fiber Outside / Inside diameter 1,4/0,8 mm;
- Hollow fiber membranes in PVDF with a long lifetime, high mechanical strength and chemical
- High permeability and 30 nm nominal pore diameter;
- They remove viruses, bacteria and particles, including colloids;
- Produced water quality is < 0,2 NTU;
- Body and cap in U-PVC;
- Nozzles DN25;
- Dead end/ Crossflow Operation mode;
- Operation parameters: Temperature 1-40°C; pH 2-11;
- Filtrate flux @25°C : 45-180 l/m<sup>2</sup> h;
- Filtration capacity MMUF10 = 0.45-1.8 m<sup>3</sup>/h; MMUF20= 0.90-3.60 m<sup>3</sup>/h;
- Feed water inlet pressure 25°C 2-3 bar (instant max 5); TMP 0,4-2 bar;
- Filtrate Water SDI < 2,5;
- Filtrate Water Turbidity NTU < 0,2.

Ref.	Description	Fam.	Subfam.	Disp. Stock
MMUF10	MWG MODULE ULTRAFILTRATION 10 M2	35	188	NO
MMUF20	MWG MODULE ULTRAFILTRATION 20 M2	35	188	NO

Ref.	Active Surface (m <sup>2</sup> )	A (mm)	B (mm)	C (mm)	D (mm)	Weight (kg)	Flow Capacity (m <sup>3</sup> /h)
MMUF10	10	1086	190	50	110	10	0,45 - 1,80
MMUF20	20	1110	245	50	140	18	0,90 - 3,60

### Feed water Specifications

Parameter	Unit	Specification
Temperature	° C	25 (max 40)
Particle dimension	micron	<300
Turbidity	NTU	50 (max 250)
Oil and grease	mg/l	0 (max 1)
pH	-	6-9
Total Organic Carbon (TOC)	mg/l	<10 (max 30)
Total Suspended Solids (TSS)	mg/l	50 (max 80)
Chlorine	mg/l	0,4 (instant max 150)

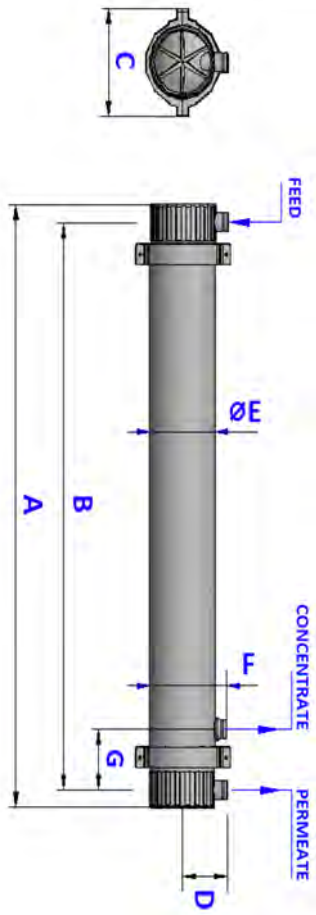
Cleaning, Disinfection and Preservative Solution	
Cleaning	
Backwash Pressure	max 2,5 bar
Air Flow Rate	max 20 Nm <sup>3</sup> /h
Air Pressure	600 - 800 mbar
Chemically Enhanced Backwash (CEB)	
Sodium Hypochlorite (NaOCl)	1000 mg/l
Sodium Hydroxide (NaOH)	500 mg/l
Hydrochloric Acid (HCl)	1000 mg/l
Citric Acid	1 - 2 %
Clean-in-Place (CIP)	
Frequency	Current Process TMP (bar) ≥ Initial TMP (bar) + 0,9 bar
Operation Duration	2 hours
Chemical Cleaning Solutions (depend on pollutant)	0,1 % NaOH + 0,2 % NaOCl 0,2 % HCl + 0,2 % Citric Acid
Cleaning Flow Rate per Module	1 - 2 m <sup>3</sup> /h

Certificates	Manufacturer	Sectors
	<b>MWG</b>	Industrial





## UF80 MWG Ultrafiltration Modules



- Hollow Fiber UF membranes in PVDF;
- Nominal MWCO, Dextrane < 150.000 Dalton;
- Outside to inside flow direction;
- Fiber Outside / Inside diameter 1,4/0,8 mm;
- Hollow fiber membranes in PVDF with a long lifetime, high mechanical strength and chemical
- High permeability and 30 nm nominal pore diameter;
- They remove viruses, bacteria and particles, including colloids;
- Produced water quality is < 0,2 NTU;
- Body and cap in U-PVC;
- DN50 grooved-end nozzles;
- Dead end/ Crossflow Operation mode;
- Operation parameters: Temperature 1-40°C; pH 2-11;
- Filtrate flux @25°C : 45-180 l/m<sup>2</sup> h;
- Filtration capacity 3,6-14,4 m<sup>3</sup>/h;
- Feed water inlet pressure 25°C 2-3 bar (instant max 5); TMP 0,4-2 bar;
- Filtrate Water SDI < 2,5;
- Filtrate Water Turbidity NTU < 0,2.

Ref.	Description	Fam.	Subfam.	Disp. Stock
MMUF80	MWG MODULE ULTRAFILTRATION 80 M2	35	188	NO

Ref.	Active Surface (m <sup>2</sup> )	A (mm)	B (mm)	C (mm)	D (mm)	F (mm)	G (mm)
MMUF80	80	2038	1917	360	172	289	205

### Feed water Specifications

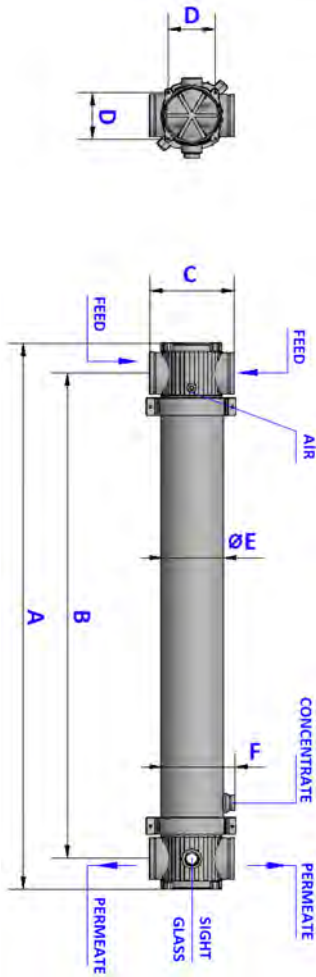
Parameter	Unit	Specification
Temperature	° C	25 (max 40)
Particle dimension	micron	<300
Turbidity	NTU	50 (max 250)
Oil and grease	mg/l	0 (max 1)
pH	-	6-9
Total Organic Carbon (TOC)	mg/l	<10 (max 30)
Total Suspended Solids (TSS)	mg/l	50 (max 80)
Chlorine	mg/l	0,4 (instant max 150)

Cleaning, Disinfection and Preservative Solution	
Cleaning	
Backwash Pressure	max 2,5 bar
Air Flow Rate	max 20 Nm <sup>3</sup> /h
Air Pressure	600 - 800 mbar
Chemically Enhanced Backwash (CEB)	
Sodium Hypochlorite (NaOCl)	1000 mg/l
Sodium Hydroxide (NaOH)	500 mg/l
Hydrochloric Acid (HCl)	1000 mg/l
Citric Acid	1 - 2 %
Clean-in-Place (CIP)	
Frequency	Current Process TMP (bar) ≥ Initial TMP (bar) + 0,9 bar
Operation Duration	2 hours
Chemical Cleaning Solutions (depend on pollutant)	0,1 % NaOH + 0,2 % NaOCl      0,2 % HCl + 0,2 % Citric Acid
Cleaning Flow Rate per Module	1 - 2 m <sup>3</sup> /h

Certificates	Manufacturer	Sectors
	<b>MWG</b>	Industrial



## UF80T MWG Ultrafiltration Modules



- Hollow Fiber UF membranes in PVDF;
- Nominal MWCO, Dextrane < 150.000 Dalton;
- Outside to inside flow direction;
- Fiber Outside / Inside diameter 1,4/0,8 mm;
- Hollow fiber membranes in PVDF with a long lifetime, high mechanical strength and chemical
- High permeability and 30 nm nominal pore diameter;
- They remove viruses, bacteria and particles, including colloids;
- Produced water quality is < 0,2 NTU;
- Body and cap in U-PVC;
- DN50 grooved-end concentrate nozzles; DN150 grooved-end feed and permeate nozzles; NPT 3/8" straight union connection air inlet nozzle;
- Dead end/ Crossflow Operation mode;
- Operation parameters: Temperature 1-40°C; pH 2-11;
- Filtrate flux @25°C : 45-180 l/m<sup>2</sup> h;
- Filtration capacity 3,6-14.4 m<sup>3</sup>/h;
- Feed water inlet pressure 25°C 2-3 bar (instant max 5); TMP 0,4-2 bar;
- Filtrate Water SDI < 2,5;
- Filtrate Water Turbidity NTU < 0,2.

Ref.	Description	Fam.	Subfam.	Disp. Stock	
MMUF80T	MWG MODULE ULTRAFILTRATION 80 M2 T	35	188	NO	

Ref.	Active Surface (m <sup>2</sup> )	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
MMUF80T	80	2216	1968	344	190	250	289

### Feed water Specifications

Parameter	Unit	Specification
Temperature	° C	25 (max 40)
Particle dimension	micron	<300
Turbidity	NTU	50 (max 250)
Oil and grease	mg/l	0 (max 1)
pH	-	6-9
Total Organic Carbon (TOC)	mg/l	<10 (max 30)
Total Suspended Solids (TSS)	mg/l	50 (max 80)
Chlorine	mg/l	0,4 (instant max 150)

Cleaning, Disinfection and Preservative Solution	
Cleaning	
Backwash Pressure	max 2,5 bar
Air Flow Rate	max 20 Nm <sup>3</sup> /h
Air Pressure	600 - 800 mbar
Chemically Enhanced Backwash (CEB)	
Sodium Hypochlorite (NaOCl)	1000 mg/l
Sodium Hydroxide (NaOH)	500 mg/l
Hydrochloric Acid (HCl)	1000 mg/l
Citric Acid	1 - 2 %
Clean-in-Place (CIP)	
Frequency	Current Process TMP (bar) ≥ Initial TMP (bar) + 0,9 bar
Operation Duration	2 hours
Chemical Cleaning Solutions (depend on pollutant)	0,1 % NaOH + 0,2 % NaOCl    0,2 % HCl + 0,2 % Citric Acid
Cleaning Flow Rate per Module	1 - 2 m <sup>3</sup> /h

Certificates	Manufacturer	Sectors
	<b>MWG</b>	Industrial