

# Biotech elements

## small size spiral-wound elements for lab testing

The Biotech Test product family includes RO, NF, UF and MF membranes. These small elements are used for trials when the amount of feed liquid available is limited.

The Biotech Test Elements are made with high temperature stable construction materials. The maximum recommended operating temperature is 50°C (122°F). Operation at temperature above 50°C (122°F) is possible however permeability will be reduced by irreversible compaction.

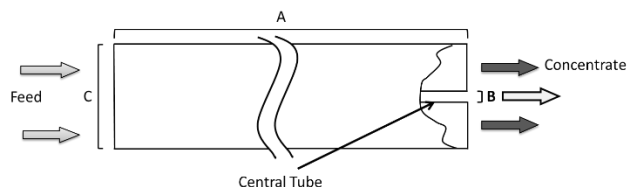


Figure 1: Element Dimensions Diagram – Female

Table 1: Dimensions and Weight

Model	Dimensions, inches (cm)			Boxed Weight lbs (kg)
	A	B	C	
All 1812	12 (30.48)	0.625 (1.59)	1.85 (4.7)	0.15 (0.3)

Table 2: 1812 membrane specifications

Spacer	35 mil (0.86mm)
Membrane area	4.0 ft <sup>2</sup> (0.38 m <sup>2</sup> )
Outerwrap	Cage
Part material	Polysulfone
Max pressure drop	Over an element 15psi (103kPa)

## housing

Housings for 1812 elements are available upon request.



Figure 1: 1812 housing (HSG,SPR1812VC)

Table 5: Housing specification

Model	Max pressure psi (bar)	Part Number
HSG,SPR1812TLC	200 psi (1,379 kPa)	3160341B
HSG,SPR1812VC	1000 psi (6,894 kPa)	3044533

Material	316SS
Feed/concentrate Connections	TLC: 2in tri Clamp VC: 2in Victaulic
Permeate connections	1/2in FNPT

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Polyamide Membranes RO										
Model	Class	Part Number	Rejection Ave. (1)	Cut-Off	Typical flux	Max. Op. Pressure	Max. Temp. cont. & CIP	pH Range		Chlorine Tolerance (3)
			%	Dalton	GFD (LMH)	Psi (kPa)	°F (°C)	cont.	CIP (2)	ppm x hours
AG1812	RO	3051741	99.0% NaCl (4)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-11.0	1.0 – 13.0	500+
AG1812HR	RO	3062684	99.3% NaCl (4)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-11.0	1.0 – 13.0	500+
AG1812LF	RO	3062685	99.0% NaCl (4)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-11.0	1.0 – 13.0	500+
AK1812	RO	3051742	98.0% NaCl (5)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-11.0	1.0 – 13.0	500+
AP1812	RO	3148691	92.0% NaCl (5)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-11.0	1.0 – 13.0	500+

(1) Average salt rejection after 24 hours operation.

(2) Refer to Cleaning Guidelines Technical Bulletin TB1194EN.

(3) Dechlorination recommended

(4) Testing conditions: 2,000ppm NaCl solution at 225psi (1,551kPa) operating pressure, 25°C (77°F), pH 7.5 and 15% recovery.

(5) Testing conditions: 500ppm NaCl solution at 75psi (520kPa) operating pressure, 25°C (77°F), pH 7.5 and 15% recovery

Proprietary Thin Film Membranes RO, NF										
Model	Class	Part Number	Rejection Ave. (1)	Cut-Off	Typical flux	Max. Op. Pressure	Max. Temp. cont. & CIP	pH Range		Chlorine Tolerance (3)
			%	Dalton	GFD (LMH)	Psi (kPa)	°F (°C)	cont.	CIP (2)	ppm x hours
SE1812	RO	3051750	97.5% NaCl (4)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-10.0	1.0 – 11.5	500+
DK1812	NF	1255117	98% MgSO <sub>4</sub> (5)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-10.0	2.0 – 11.0	500+
DL1812	NF	3051745	96% MgSO <sub>4</sub> (5)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-10.0	2.0 – 11.0	500+
HL1812	NF	3051747	98% MgSO <sub>4</sub> (5)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-10.0	2.0 – 11.0	500+
DURACID NF1812	NF	3052540	98% MgSO <sub>4</sub> (5)	N/A	5-14 (9-24)	850 (5,860)	122 (50)	< 9.0	< 9.0	500+

(1) Average salt rejection after 24 hours operation.

(2) Refer to Cleaning Guidelines Technical Bulletin TB1194EN.

(3) Dechlorination recommended

(4) Testing conditions: 2,000ppm NaCl solution at 425psi (2930kPa) operating pressure, 25°C (77°F), pH 7.5 and 15% recovery.

(5) Testing conditions: 2,000ppm MgSO<sub>4</sub> solution at 110psi (760kPa) operating pressure, 77°F, pH 7.5 and 15% recovery.

Proprietary Thin Film Membranes UF										
Model	Class	Part Number	Rejection Ave.	Cut-Off	Typical flux	Max. Op. Pressure	Max. Temp. cont. & CIP	pH Range		Chlorine Tolerance (3)
			%	Dalton	GFD (LMH)	Psi (kPa)	°F (°C)	cont.	CIP (1)	ppm x hours
GE1812	UF	1255124	NA	1,000	5-20 (8-34)	400 (2,760)	122 (50)	2.0-10.0	1.0-13.0	20-50
GH1812	UF	1255123	NA	2,500	5-20 (8-34)	400 (2,760)	122 (50)	2.0-10.0	1.0-13.0	20-50
GK1812	UF	1255122	NA	3,500	5-20 (8-34)	400 (2,760)	122 (50)	2.0-10.0	1.0-13.0	20-50

(1) Refer to Cleaning Guidelines Technical Bulletin TB1194EN.

Polyethersulfone / Polysulfone Membranes UF											
Model	Class	Part Number	Rejection Ave.	Cut-Off	Typical flux	Max. Op. Pressure	Max Temperature		pH Range		Chlorine Tolerance
			%	Dalton	GFD (LMH)	Psi (kPa)	Cont.	CIP	cont.	CIP (1)	ppm x days
PT1812	UF	3051748	N/A	5,000	5-20 (8-34)	200 (1,379)	122°F (50°C)	122°F (50°C)	2.0-10.0	1.0-13.0	5,000+
PW1812	UF	3051749	N/A	20,000	5-20 (8-34)	200 (1,379)	122°F (50°C)	122°F (50°C)	2.0-10.0	1.0-13.0	5,000+

(1) Refer to Cleaning Guidelines Technical Bulletin TB1194EN.

Ultrafiltric Membranes UF											
Model	Class	Part Number	Rejection Ave.	Cut-Off	Typical flux	Max. Op. Pressure	Max Temperature		pH Range		Chlorine Tolerance
			%	Dalton	GFD (LMH)	Psi (kPa)	Cont.	CIP	cont.	CIP (1)	ppm x days
MW1812	UF	1255107	N/A	30,000	5-20 (8-34)	100 (689)	122°F (50°C)	122°F (50°C)	2.0-10.0	2.0-11.0	8,000+

(1) Refer to Cleaning Guidelines Technical Bulletin TB1194EN.

PVDF Membranes MF											
Model	Class	Part Number	Rejection Ave.	Cut-Off	Typical flux	Max. Op. Pressure	Max Temperature		pH Range		Chlorine Tolerance
			%	Micron	GFD (LMH)	Psi (kPa)	Cont.	CIP	cont.	CIP (1)	ppm x days
JX1812	MF	1255108	N/A	0.3	5-20 (8-34)	100 (689)	122°F (50°C)	122°F (50°C)	2.0-10.0	1.0-13.0	5,000+

(1) Refer to Cleaning Guidelines Technical Bulletin TB1194EN.