TECHNICAL MANUAL OF HOUSEHOLD MEMBRANE ELEMENT

www.hn-jcm.com

Company introduction

Hangzhou Haina Environmental Protection Technology Co., Ltd， founded in 2005, is a national high-tech enterprise engaged in the research and development, manufacturing and service of reverse osmosis membrane and nanofiltration membrane elements, who has the core technology of flatsheet manufacturing. Since its establishment, it has formed deep strategic cooperation with many fortune 500 enterprises and are famous in the US, Japan and Korea, and maintained long-term sound cooperative relations with domestic first-line brand companies.

The company headquarters is adjacent to the world cultural heritage "Liangzhu Ancient City Site". In 2021, the new production base had been completed. The first phase covers a construction area of 36,000 square meters, with an annual output of 15 million square meters of flatsheet, 200,000 industrial 8040 membrane elements, and 18 million household membrane elements. After nearly 20 years of continuous innovation, Haina has developed more than 200 specifications of membrane products, including seawater desalination membrane, OC special membrane, antipollution membrane, nanofiltration membrane, high water efficiency membrane, ultra-low pressure membrane and so on. The enterprise has obtained IS09001 and 14001 system certification, the products are in accordance with NSF, RoHS, REACHSVHC and other standards, and had been exported to many countries and regions.

The company's research and development team is established by a number of doctors and masters in the field of separation film as the core, and formed close technical cooperation with many universities and research institutes, continuous innovation. The company has nearly 60 patents, and more than 20 participation in the formulation of national, industry and group standards. Since its establishment, with the mission of making the water clearer, the company has always adhered to the sincere, simple and open spirit of enterprise, and has taken the development path of "production refinement, products technologization, brand differentiation, and humanized service", and is committed to building a world-class industrial base of reverse osmosis and nanofiltration membrane originals, striving to be a national pioneer in the film industry, and creating a "Chinese core" in the film industry.

HYNAMO®

HYNAMO
Reverse Osmosis Element
Model NO.
3013-800
HN membrane technology derive from USA
HYNAMO
Reverse Osmosis Element
HN membrane technology derive from USA
HYNAMO
Reverse Osmosis Element
HN membrane technology derive from USA

Membrane Element Performance Quick Reference Table

Reverse osmosis membrane element performance checklist

Model	Stable salt rejection (%)	Average permeate flow (GPD)	Test condition		
			Test pressure	Test solution concentration	Recovery
TW-1812-75	96	75	70psi	250ppm	50%
TW-2012-100	96	100			
GK-1812-50	95	50	90psi	2000ppm	30%
GK-1812-75	95	75			
GK-2012-100	95	100			
BW-1812-50	97	50	70psi	500ppm	50%
BW-1812-75	97	75			
BW-1812-100	97	100			
BW-2012-150	96	150	90psi	250ppm	50%
BW-2012-200	96	200			
BW-2012-400	96	400	100psi	250ppm	50%
BW-3012-300	96	300	90psi	250ppm	50%
BW-3012-400	96	400			
BW-3012-500	96	500			
BW-3012-600	96	600			
BW-3012-800	96	800	100psi	250ppm	50%
BW-3013-400	96	400	90psi	500ppm	50%
BW-3013-600	96	600	90psi	250ppm	50%
BW-3013-800	96	800	100psi	250ppm	50%
BW-3213-1000	96	1000			
BW-3213-1200	96	1200			
Products can be customized according to drawings and membrane shells					

Nanofiltration membrane element performance quick reference table

Model	Stable desalting rate (%)	Average water yield (GPD)	Test condition		
			Test pressure	Test solution concentration	Recovery
NF-2012-100	70-90	100	90psi	500ppm	50%
NF-3012-400		400			
NF-3013-600		600			

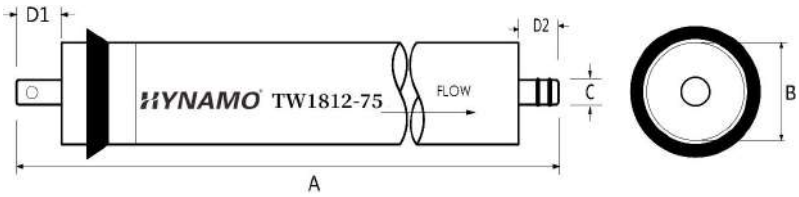
TW-1812-75

TW-1812-75 household RO membrane element has the characteristics of high desalination rate, low operating pressure, anti-pollution, high recovery rate, etc. It is suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, treating municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
TW-1812-75	96	75

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 44mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 70psi(0.48MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250pm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

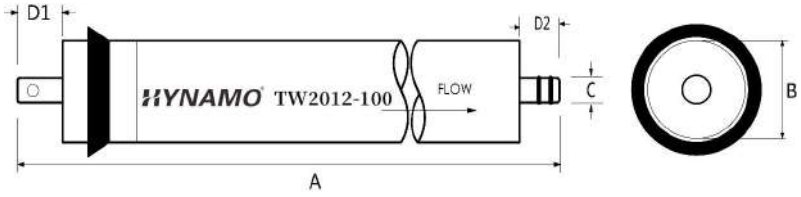
TW-2012-100

TW-2012-100 household RO membrane element has the characteristics of high desalination rate, low operating pressure, anti-pollution, high recovery rate, etc. It is suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, treating municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
TW-2012-100	96	100

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 45.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 70psi(0.48MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

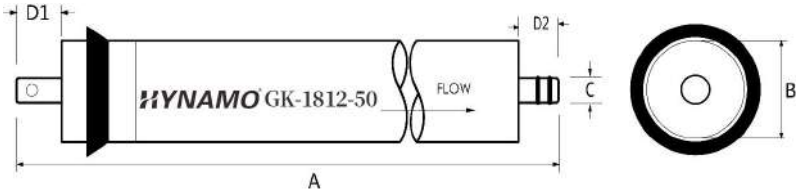
GK-1812-50

GK-1812-50 household membrane element is suitable for desalting surface water, groundwater and other brackish water with salt content below 2000ppm, using special membrane making process to optimize the structure of membrane elements, improve the anti-pollution ability of membrane elements, and maintain long-term stable high quality.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
GK-1812-50	95	50

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 44mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 2000ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 30%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

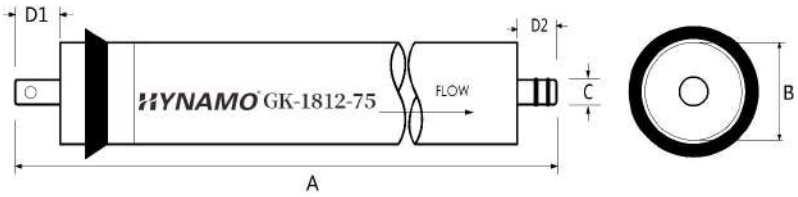
GK-1812-75

GK-1812-75 household membrane element is suitable for desalting surface water, groundwater and other brackish water with salt content below 2000ppm, using special membrane making process to optimize the structure of membrane elements, improve the anti-pollution ability of membrane elements, and maintain long-term stable high quality.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
GK-1812-75	95	75

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 45.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 2000ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 30%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

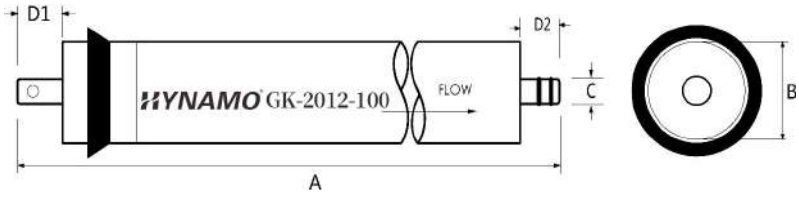
GK-2012-100

GK-2012-100 household membrane element is suitable for desalting surface water, groundwater and other brackish water with salt content below 2000ppm, using special membrane making process to optimize the structure of membrane elements, improve the anti-pollution ability of membrane elements, and maintain long-term stable high quality.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
GK-2012-100	95	100

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 46.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 2000ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 30%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

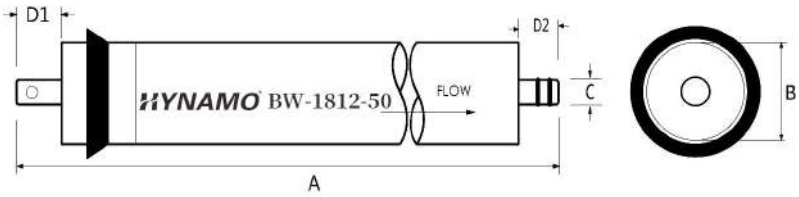
BW-1812-50

BW-1812-50 household RO membrane element has the characteristics of low operating pressure, high flow, anti-pollution, high recovery rate, etc. It is suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, to treat municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-1812-50	97	50

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 44mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 70psi(0.48MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 500ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

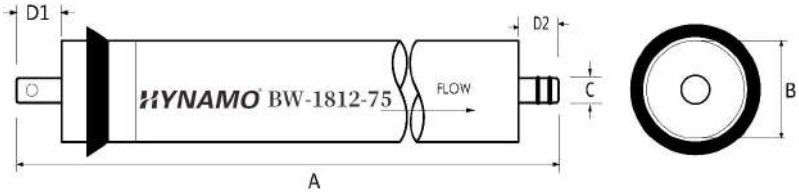
BW-1812-75

BW-1812-75 household RO membrane element has the characteristics of low operating pressure, high flow, anti-pollution, high recovery rate, etc. It is suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, to treat municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-1812-75	97	75

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 45.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 70psi(0.48MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 500ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

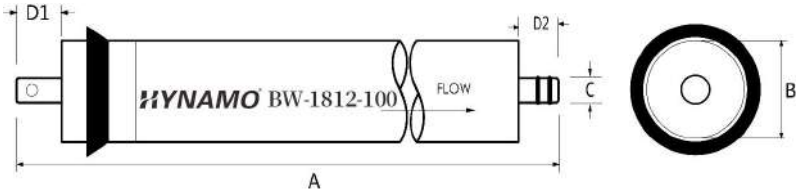
BW-1812-100

BW-1812-100 household RO membrane element has the characteristics of low operating pressure, high flow, anti-pollution, high recovery rate, etc. It is suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, treating municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-1812-100	97	100

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 46.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 70psi(0.48MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 500ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

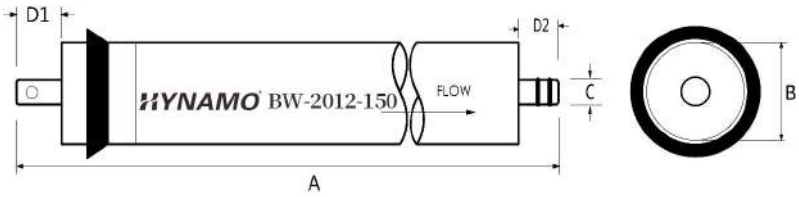
BW-2012-150

BW-2012-150 household RO membrane element has the characteristics of high desalination rate, low operating pressure, high flow, anti-pollution, high recovery rate, etc., suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, to treat municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-2012-150	96	150

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 46.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

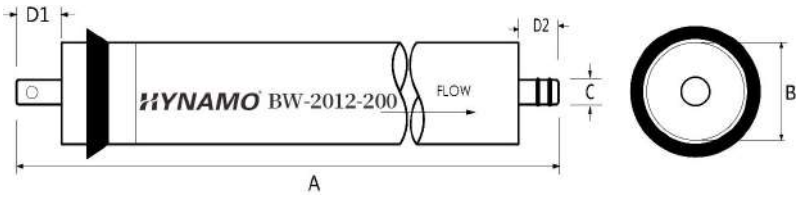
BW-2012-200

BW-2012-200 household RO membrane element has the characteristics of high desalination rate, low operating pressure, small body, large flow rate, anti-pollution, high recovery rate, etc., greatly reducing the cost, suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-2012-200	96	200

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 48mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

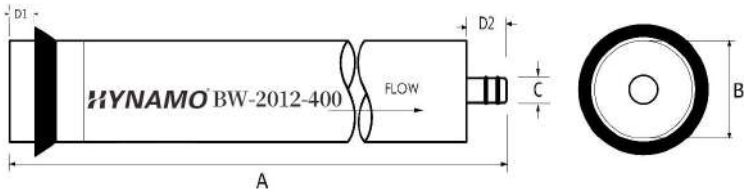
BW-2012-400

BW-2012-400 household RO membrane element has the characteristics of high desalination rate, low operating pressure, small body, large flow rate, anti-pollution, high recovery rate, etc., greatly reducing the cost, suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-2012-400	96	400

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 48mm C: 17mm D1: 20mm D2: 19mm

Test condition

Test pressure ····· 100psi(0.69MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

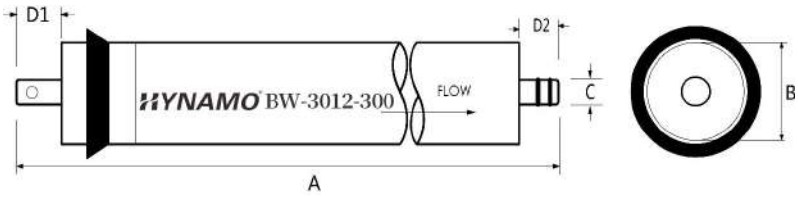
BW-3012-300

BW-3012-300 household RO membrane element has the characteristics of high desalination rate, low operating pressure, small body, large flow rate, anti-pollution, high recovery rate, etc., greatly reducing the cost, suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3012-300	96	300

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 72.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 500ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

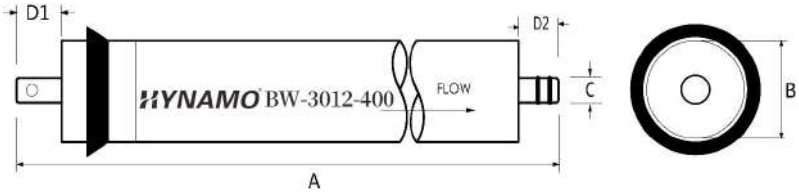
BW-3012-400

BW-3012-400 household RO membrane element has the characteristics of high desalination rate, low operating pressure, self-made high throughput performance membrane rolling, small body and large flow, anti-pollution, etc., suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, to treat municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3012-400	96	400

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 72.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

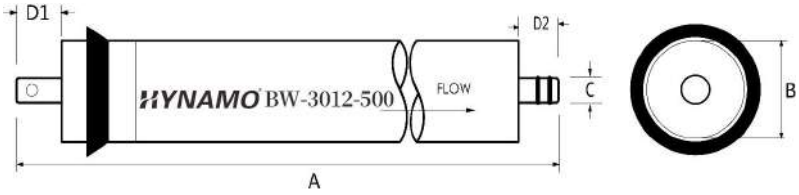
BW-3012-500

BW-3012-500 household RO membrane element has the characteristics of high desalination rate, small body, large flow rate, anti-pollution, high recovery rate, etc., suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, to treat municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3012-500	96	500

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 72.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

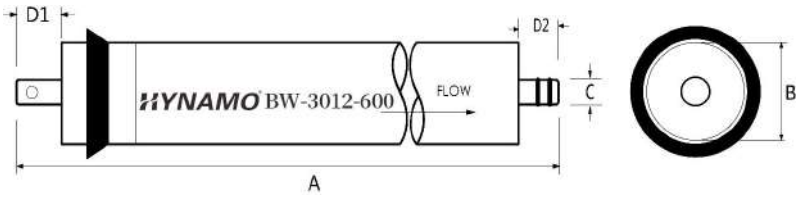
BW-3012-600

BW-3012-600 household RO membrane element has the characteristics of high desalination rate, small body, large flow rate, anti-pollution, high recovery rate, etc., which greatly reduces the cost, suitable for small pure water equipment such as hospital laboratory pure water, treatment of municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3012-600	96	600

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 75.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

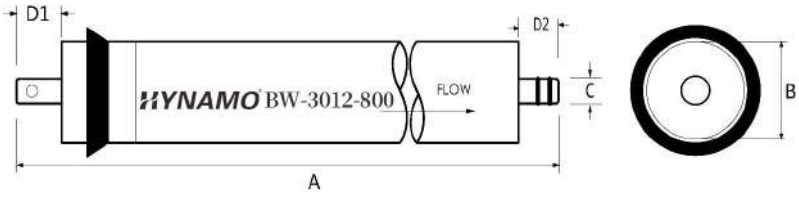
BW-3012-800

BW-3012-800 household RO membrane element has the characteristics of high desalination rate, small body, large flow rate, anti-pollution, high recovery rate, etc., which greatly reduces the cost, suitable for small pure water equipment such as hospital laboratory pure water, treatment of municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3012-800	96	800

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 75.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 100psi(0.69MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

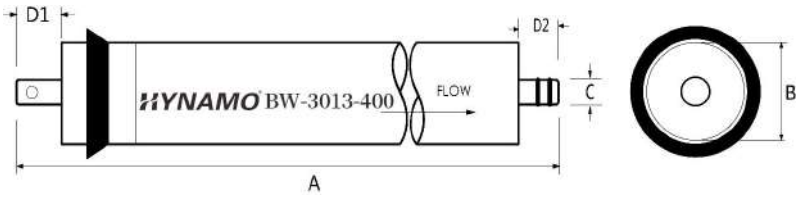
BW-3013-400

BW-3013-400 household RO membrane element has the characteristics of high desalination rate, low operating pressure, small body, large flow rate, anti-pollution, high recovery rate, etc., greatly reducing the cost, suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, treatment of municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3013-400	96	400

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 333mm B: 69mm C: 17mm D1: 15mm D2: 19mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 500ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

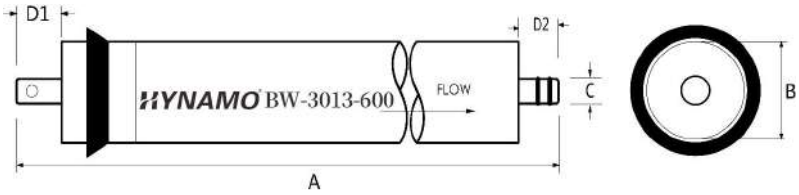
BW-3013-600

BW-3013-600 household RO membrane element has the characteristics of high desalination rate, low operating pressure, high flow, high recovery rate, etc., greatly reducing the cost, suitable for household pure water machine, hospital laboratory pure water and other small pure water equipment, treatment of municipal tap water, well water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3013-600	96	600

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 333mm B: 69mm C: 17mm D1: 15mm D2: 19mm

Test condition

Test pressure ····· 90psi(0.62MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

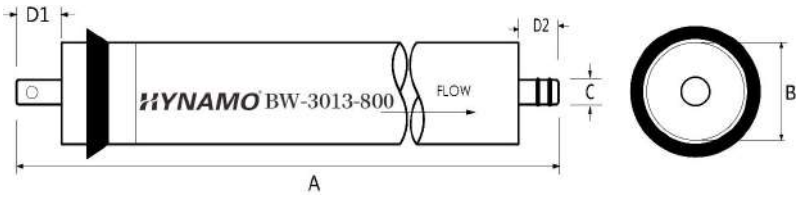
BW-3013-800

BW-3013-800 household RO membrane element has the characteristics of high desalination rate, low operating pressure, high flow, small body and large flow rate, anti-pollution, high recovery rate, etc., greatly reducing the cost, suitable for household pure water machine and other small pure water equipment, treatment of municipal tap water and other low salt water sources。

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3013-800	96	800

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 333mm B: 76mm C: 17mm D1: 15mm D2: 19mm

Test condition

Test pressure ····· 100psi(0.69MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

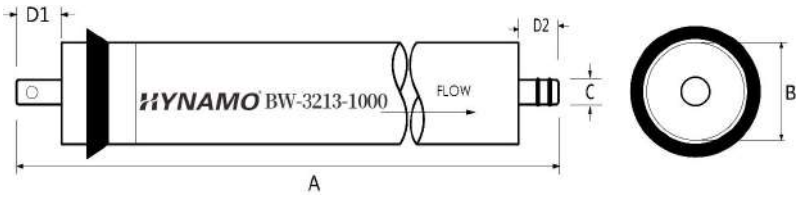
BW-3213-1000

BW-3213-1000 household RO membrane element has the characteristics of high desalination rate, low operating pressure, high flow, large flow rate, anti-pollution, high recovery rate, etc., greatly reducing the cost, suitable for household pure water machine and other small pure water equipment, treatment of municipal tap water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3213-1000	96	1000

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 333mm B: 76mm C: 17mm D1: 15mm D2: 19mm

Test condition

Test pressure ····· 100psi(0.69MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

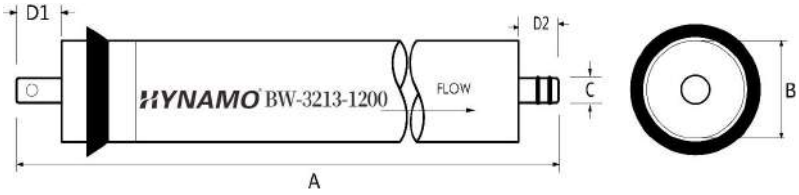
BW-3213-1200

BW-3213-1200 household RO membrane element has the characteristics of high desalination rate, low operating pressure, high flow, large flow rate, anti-pollution, high recovery rate, etc., greatly reducing the cost, suitable for household pure water machine and other small pure water equipment, treatment of municipal tap water and other low salt water sources.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
BW-3213-1200	96	1200

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 333mm B: 76mm C: 17mm D1: 15mm D2: 19mm

Test condition

Test pressure ····· 100psi(0.69MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 250ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

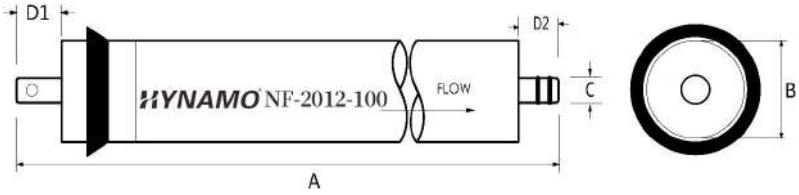
NF-2012-100

NF-2012-100 nanofiltration membrane element is widely used in desalination of water source below 500PPM, with high desalination rate, low operating pressure, high flow, anti-pollution, high recovery rate and other characteristics, which is suitable for household pure water machine, mineralized direct drinking machine and other water purification systems.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
NF-2012-100	70-90	100

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 45.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.64MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 500ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

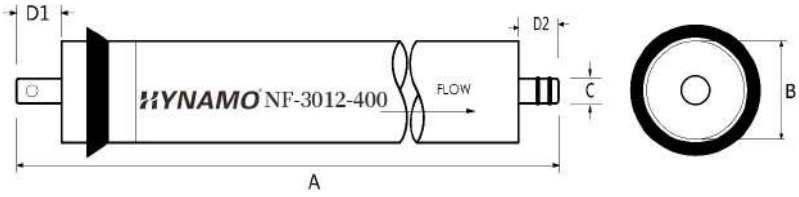
NF-3012-400

NF-3012-400 nanofiltration membrane element is widely used in desalination of water source below 500PPM, with high desalination rate, low operating pressure, high flow, anti-pollution, high recovery rate and other characteristics, which is suitable for household pure water machine, mineralized direct drinking machine and other water purification systems.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
NF-3012-400	70-90	400

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 298mm B: 72.5mm C: 17mm D1/D2: 22mm

Test condition

Test pressure ····· 90psi(0.64MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 500ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

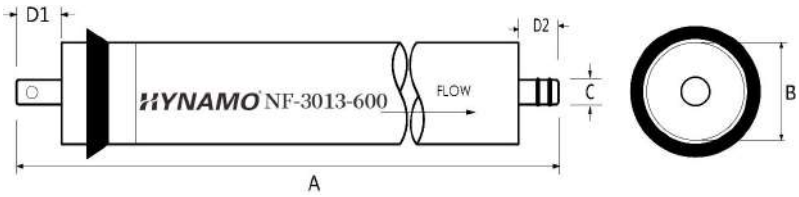
NF-3013-600

NF-3013-600 nanofiltration membrane element is widely used in desalination of water source below 500PPM, with high desalination rate, low operating pressure, high flow, anti-pollution, high recovery rate and other characteristics, which is suitable for household pure water machine, mineralized direct drinking machine and other water purification systems.

Product performance

Model	Stable salt rejection (%)	Average permeate flow(GPD)
NF-3013-600	70-90	600

Note: The permeate flow of a single membrane element varies within the range of ±15%.



A: 333mm B: 69mm C: 17mm D1: 15mm D2: 19mm

Test condition

Test pressure ····· 90psi(0.64MPa)

Test liquid temperature ····· 25℃

Test solution concentration NaCl ····· 500ppm

Test pH value ····· 6.5-7.5

Recovery rate of single membrane element ····· 50%

Operating Limits and Conditions

Max operating temperature	45℃	Max operating pressure	150psi
Max allowable pressure drop	15psi	pH range	2-11
Max water intake SDI_{15}	5	Residual chlorine tolerance	<0.1ppm

Note 1: When pH10 is above, the maximum temperature for continuous operation is 35℃.
Note 2: Under certain conditions, influent water containing free chlorine and other oxidizing agents can cause serious membrane damage, as oxidative damage is not covered by the product warranty.

HYNAMO

Good quality, the road can go far.

HYNAMO®

Hangzhou Haina Environmental Protection Technology Co., LTD
No.8,Guanshan Road,Pinyao Town,Yuhang District,
Hangzhou,Zhejiang Province,China
Website：www.hn-jcm.com
Telephone：+86 0571-88587247

HYNAMO®

2024
PRODUCT MANUAI
RO/NF

Hangzhou Haina Environmental Protection Technology Co., LTD

CONTENT

ABOUT US

Hangzhou Haina Environmental Protection Technology Co., Ltd.founded in 2005, is a national high-tech enterprise engaged in the research and development, manufacturing and service of reverse osmosis, nanofiltration membrane elements, who has the core technology of membrane flat sheet manufacturing. Since its establishment, it has formed deep strategic cooperation with many fortune 500 enterprises who are famous in the US, Japan and Korea, and maintained long-term close cooperative relations with domestic first-line brand companies.

The company headquarters is adjacent to the world cultural heritage "Liangzhu Ancient City Site". In 2021, the new production base had been completed. The first phase covers an area of 51 mu, with a construction area of 36,000 square meters, with an annual output of 15 million square meters of membrane flat sheet, 200,000 industrial 8040 membrane elements, and 18 million household membrane elements. After nearly 20 years of continuous innovation, Haina has developed more than 200 specifications of membrane products, including seawater desalination membrane, OC special membrane, antipollution membrane, nanofiltration membrane, high water efficiency membrane, ultra-low pressure membrane and so on. The enterprise has obtained IS09001 and 14001 system certification, the products are in accordance with NSF, RoHS, REACHSVHC and other standards, exported to many countries and regions.

The company's research and development team is established by a number of doctors and masters in the field of separation membrane as the core, and formed close technical cooperation with many universities and research institutes, continuous innovation. The company has nearly 60 patents, and more than 20 participation in the formulation of national, industry and group standards. Since its establishment, with the mission of making the water clearer, the company has adhered to the sincere, simple and open spirit of enterprise, and has taken the development path of "production refinement, products technologization, brand differentiation, humanized service", and is committed to building a word-class industrial base of reverse osmosis and nanofiltration membrane originals, striving to be a national pioneer in the industry, and creating a "Chinese core" in the membrane industry.

Qualifications And Certifications

CERTIFICATE OF CONFORMITY OF ENVIRONMENT MANAGEMENT SYSTEM CERTIFICATION

This is to certify the environmental management system of

HANGZHOU HAINA ENVIRONMENTAL PROTECTION TECHNOLOGY CO., LTD

is in conformity with

GB/T 24001-2016/ISO 14001:2015 standard

This certificate covers the following scope of environment management system

DESIGN AND PRODUCTION OF WATER TREATMENT EQUIPMENT (MEMBRANE COMPONENTS)

Authorizer: 王国松

CERTIFICATE OF CONFORMITY OF QUALITY MANAGEMENT SYSTEM CERTIFICATION

This is to certify the quality management system of

HANGZHOU HAINA ENVIRONMENTAL PROTECTION TECHNOLOGY CO., LTD

is in conformity with

GB/T 19001-2016/ISO 9001:2015 standard

This certificate covers the following scope of quality management system

DESIGN AND PRODUCTION OF WATER TREATMENT EQUIPMENT (MEMBRANE COMPONENTS)

Authorizer: 王国松

CERTIFICATE OF CONFORMITY OF OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM CERTIFICATION

This is to certify the occupational health and safety management system of

HANGZHOU HAINA ENVIRONMENTAL PROTECTION TECHNOLOGY CO., LTD

is in conformity with

GB/T45001-2020/ISO 45001: 2018 standard

This certificate covers the following scope of occupational health and safety management system

DESIGN AND PRODUCTION OF WATER TREATMENT EQUIPMENT (MEMBRANE COMPONENTS)

Authorizer: 王国松

NSF International

789 N. Dixboro Road, Ann Arbor, MI 48105 USA

RECOGNIZES

Hangzhou Haina Environmental Protection Tech Co., Ltd.
DBA Zhejiang Ori-OSMO Environmental Technology Co., Ltd.
China

AS COMPLYING WITH NSF/ANSI 58, NSF/ANSI/CAN 61 AND ALL APPLICABLE REQUIREMENTS.

PRODUCTS APPEARING IN THE NSF OFFICIAL LISTING ARE AUTHORIZED TO BEAR THE NSF MARK.

February 27, 2024
Certificate# C0291293 - 03

David Purkiss
VP Water

CERTIFICATE

of Compliance

Certificate No: 010212014003257

Applicant: HANGZHOU HAINA ENVIRONMENTAL PROTECTION TECHNOLOGY CO., LTD.

Address: 1#BUILDING FENGDU VILLAGE PINGYAO TOWN YUHANG DISTRICT HANGZHOU CITY ZHEJIANG PROVINCE CHINA

Product name: Reverse Osmosis Membrane Element

Test Specification: EC Directive 2011/65/EU — The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment — (RoHS)

Test Method: IEC 62321 Ed 1.0b:2008 ; SJ/T11365-2006

Test Result:

The Certificate of Compliance is based on a test procedure or an evaluation of the above-mentioned product. This is to certify that the product is in compliance with the RoHS Directive(2011/65/EU) of the European Parliament on the Restriction of the use of certain Hazardous Substances[Lead(Pb), Mercury(Hg), Cadmium(Cd), Hexavalen Chromium(Cr^{6+}), Polybrominated biphenyls(PBBs) and Polybrominated diphenyl others(PBDEs)] in Electrical and Electronic Equipment.

AUTHORIZED BY

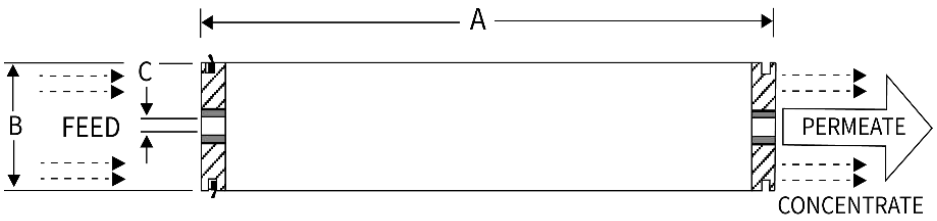
Hynamo® PLUS-400-LP
Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-LP
Product specifications	Nominal salt rejection,%	99.7
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	40(10,500)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

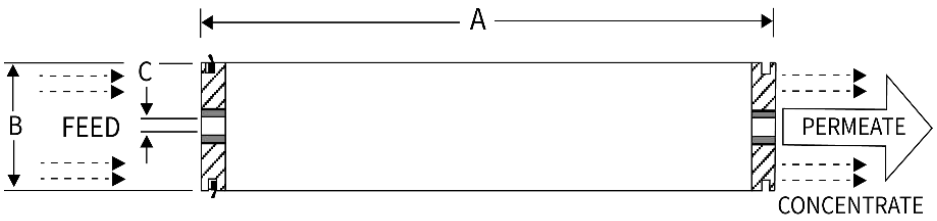
Hynamo® MAX-440-LP
Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	MAX-440-LP
Product specifications	Nominal salt rejection,%	99.6
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	48(12,650)
	Active membrane area,m^2(ft^2)	41(440)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

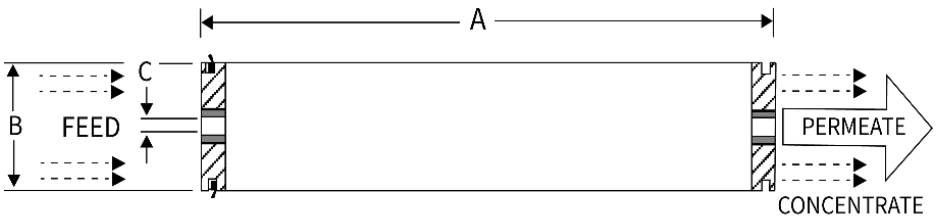
Hynamo® PLUS-400-ULP
Ultra Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-ULP
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.2
	Permeate flow rate,m^3/d(gpd)	40(10,500)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

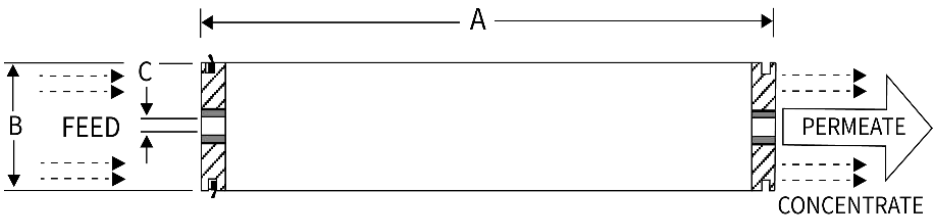
Hynamo® MAX-440-ULP
Ultra Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	MAX-440-ULP
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.2
	Permeate flow rate,m^3/d(gpd)	48(12,650)
	Active membrane area,m^2(ft^2)	41(440)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

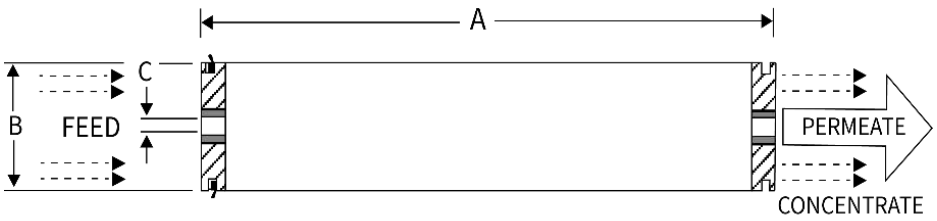
Hynamo® PLUS-400-XLP
Extra Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-XLP
Product specifications	Nominal salt rejection,%	99
	Minimum salt rejection,%	98.5
	Permeate flow rate,m^3/d(gpd)	47(12,500)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	500
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

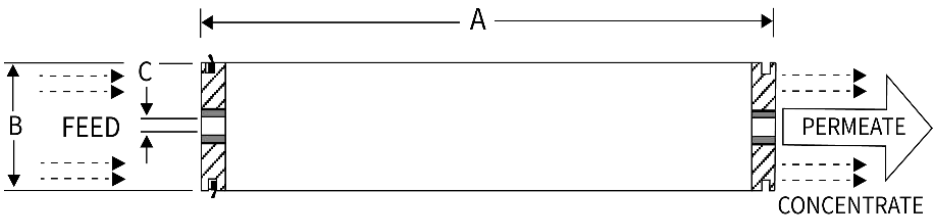
Hynamo® MAX-440-XLP
Extra Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	MAX-440-XLP
Product specifications	Nominal salt rejection,%	99
	Minimum salt rejection,%	98.5
	Permeate flow rate,m^3/d(gpd)	53(14,000)
	Active membrane area,m^2(ft^2)	41(440)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	500
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

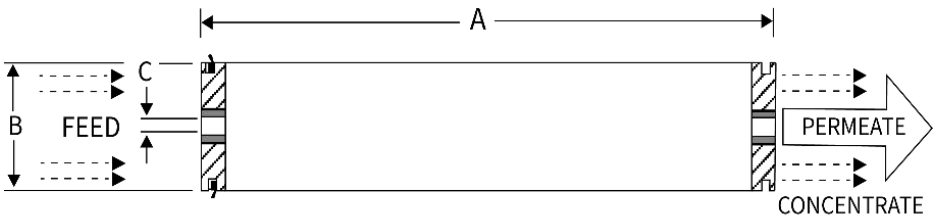
Hynamo® ECO-365-PRO High-efficiency Element

➔ Product Specifications and Operation Limits

	MODEL	ECO-365-PRO
Product specifications	Nominal salt rejection,%	99.6
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	38(10,000)
	Active membrane area,m^2(ft^2)	34(365)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	15
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

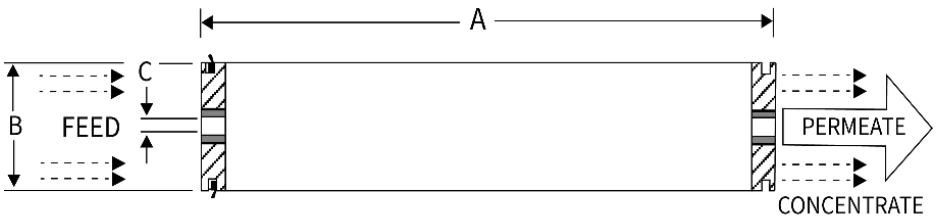
Hynamo® ECO-400-PRO
High-efficiency Element

➔ Product Specifications and Operation Limits

	MODEL	ECO-400-PRO
Product specifications	Nominal salt rejection,%	99.6
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	42(11,000)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

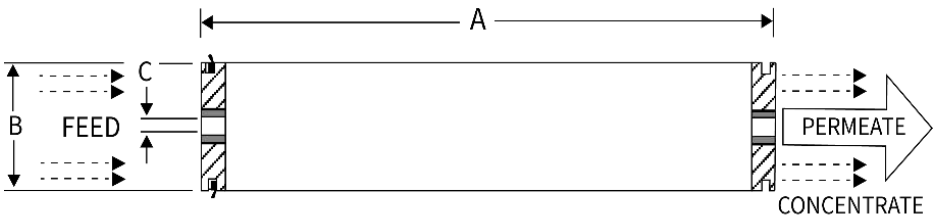
Hynamo® PLUS-400-FR
Fouling Resistance Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-FR
Product specifications	Nominal salt rejection,%	99.7
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	40(10,500)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

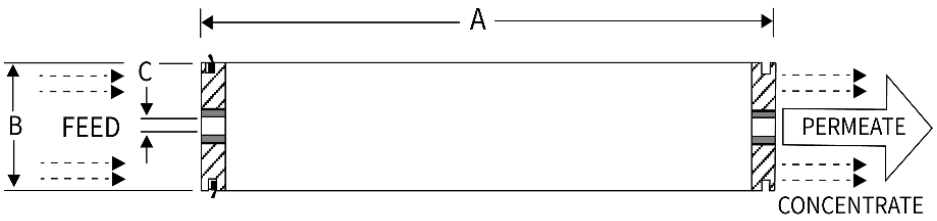
Hynamo® PLUS-400-HFR
Fouling Resistance Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-HFR
Product specifications	Nominal salt rejection,%	99.7
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	42(11,000)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

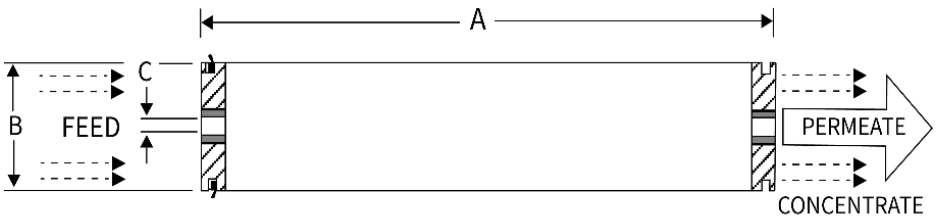
Hynamo® PLUS-400-XFR
Fouling Resistance Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-XFR
Product specifications	Nominal salt rejection,%	99.75
	Minimum salt rejection,%	99.4
	Permeate flow rate,m^3/d(gpd)	44(11,500)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34-LDP
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

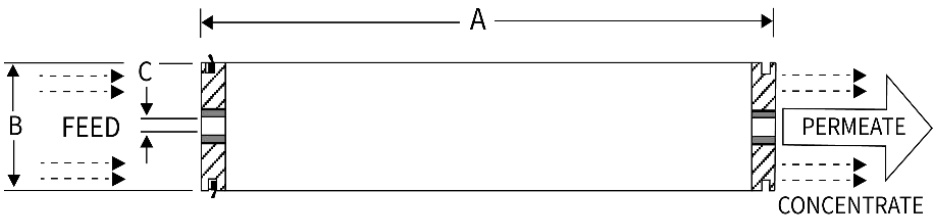
Hynamo® PLUS-400-XFRLE
Low Pressure Fouling Resistance Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-XFRLE
Product specifications	Nominal salt rejection,%	99.6
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	40(10,500)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34-LDP
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

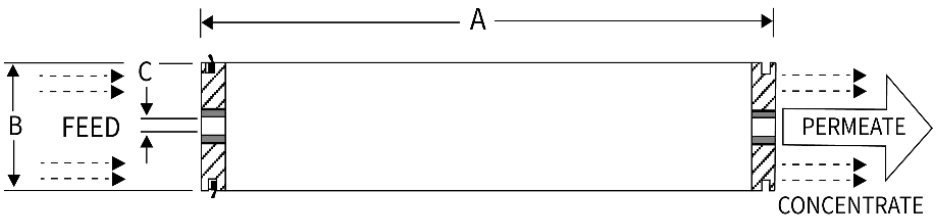
Hynamo® HOC-400/34 Sewage Element

➔ Product Specifications and Operation Limits

	MODEL	HOC-400/34
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	40(10,500)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

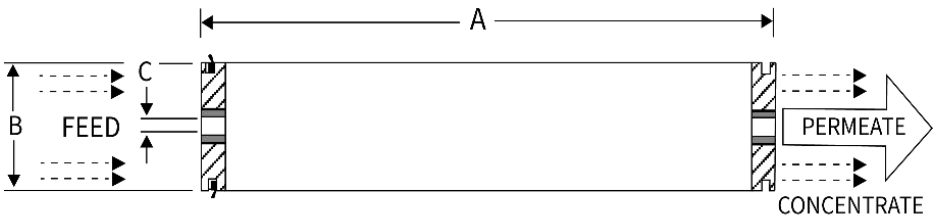
Hynamo® HOC-300/47 Sewage Element

➔ Product Specifications and Operation Limits

	MODEL	HOC-300/47
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	32(8,500)
	Active membrane area,m^2(ft^2)	27.9(300)
	Feed spacer,mil	47
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	15
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

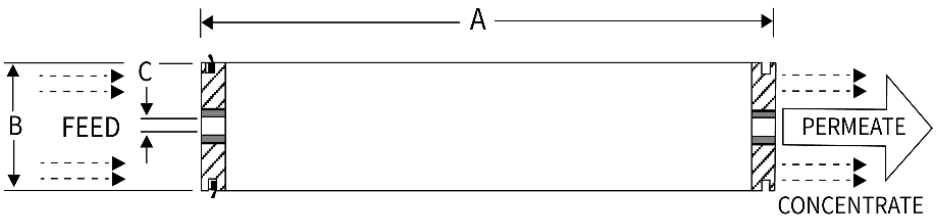
Hynamo® SW-400-FR
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-400-FR
Product specifications	Nominal salt rejection,%	99.8
	Minimum salt rejection,%	99.6
	Permeate flow rate,m^3/d(gpd)	26.5(7,000)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,200(82.7)
	Feed water flow,m^3/h	16
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

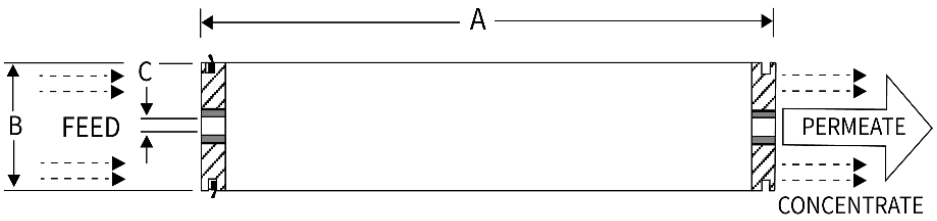
Hynamo® SW-400-XFR
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-400-XFR
Product specifications	Nominal salt rejection,%	99.8
	Minimum salt rejection,%	99.6
	Permeate flow rate,m^3/d(gpd)	32(9,000)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,200(82.7)
	Feed water flow,m^3/h	16
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

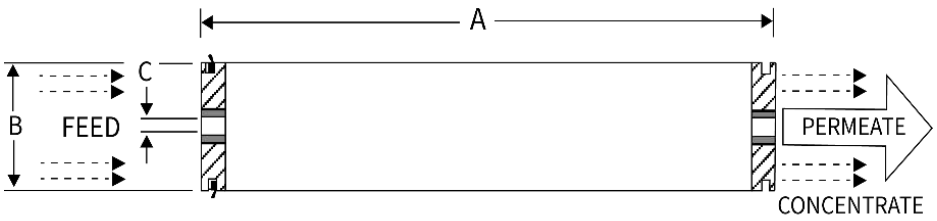
Hynamo® SW-400-XHR
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-400-XHR
Product specifications	Nominal salt rejection,%	99.85
	Minimum salt rejection,%	99.6
	Permeate flow rate,m^3/d(gpd)	26.5(7,000)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,200(82.7)
	Feed water flow,m^3/h	16
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

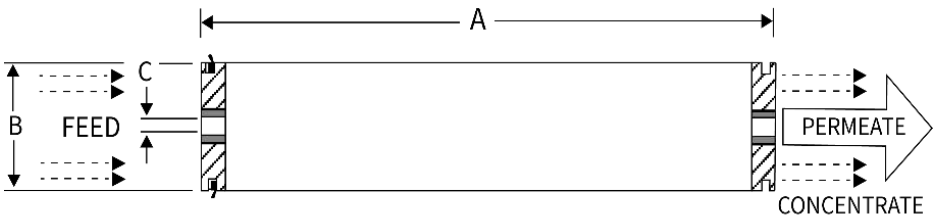
Hynamo® SW-440-XHR
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-440-XHR
Product specifications	Nominal salt rejection,%	99.85
	Minimum salt rejection,%	99.6
	Permeate flow rate,m^3/d(gpd)	28(7,500)
	Active membrane area,m^2(ft^2)	41(440)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,200(82.7)
	Feed water flow,m^3/h	16
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

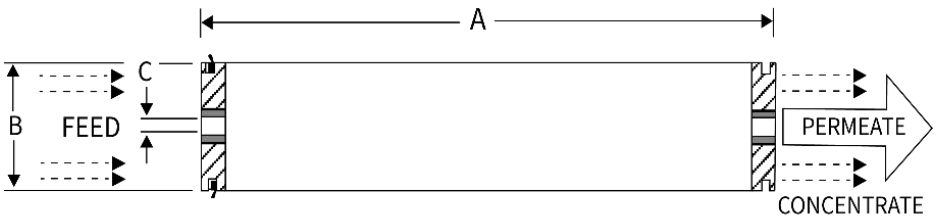
Hynamo® SW-400-HRLE
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-400-HRLE
Product specifications	Nominal salt rejection,%	99.8
	Minimum salt rejection,%	99.5
	Permeate flow rate,m^3/d(gpd)	34(9,000)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,200(82.7)
	Feed water flow,m^3/h	16
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

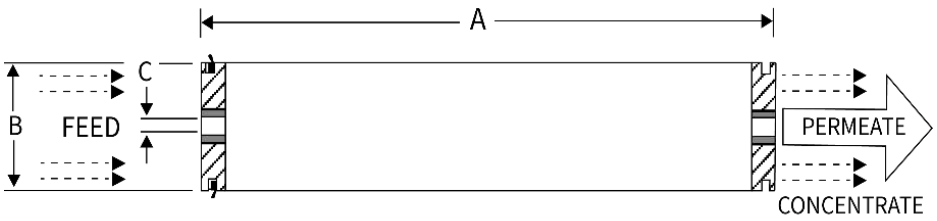
Hynamo® SW-440-HRLE
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-440-HRLE
Product specifications	Nominal salt rejection,%	99.8
	Minimum salt rejection,%	99.5
	Permeate flow rate,m^3/d(gpd)	36(9,500)
	Active membrane area,m^2(ft^2)	41(440)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,200(82.7)
	Feed water flow,m^3/h	16
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

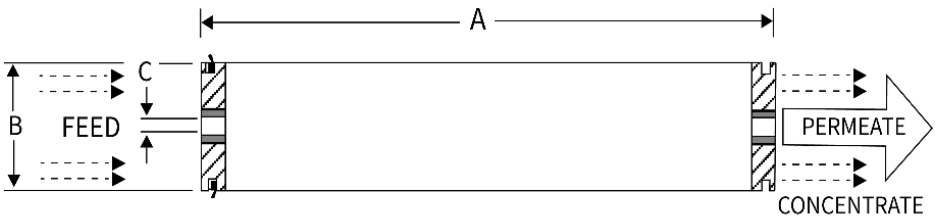
Hynamo® HP70-400
High Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	HP70-400
Product specifications	Nominal salt rejection,%	99.75
	Minimum salt rejection,%	99.6
	Permeate flow rate,m^3/d(gpd)	33.3(8,800)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	8
Max. operation limits	Pressure,psi(bar)	1,200(82.7)
	Feed water flow,m^3/h	16
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

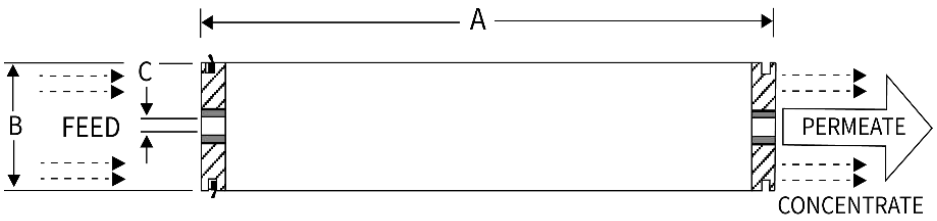
Hynamo® HP80-440
High Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	HP80-440
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.2
	Permeate flow rate,m^3/d(gpd)	34(9,000)
	Active membrane area,m^2(ft^2)	41(440)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	600(41.4)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	8
Max. operation limits	Pressure,psi(bar)	1,200(82.7)
	Feed water flow,m^3/h	16
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

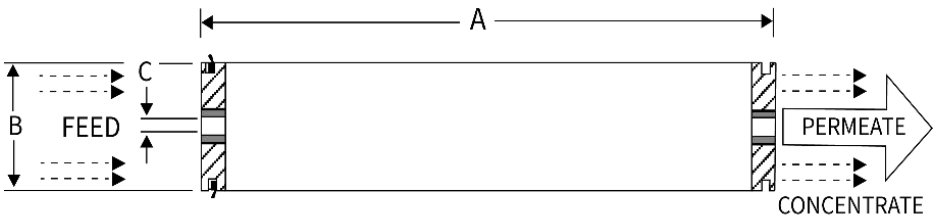
Hynamo® 400-HSRO
Heat Sanitizable Element

➔ Product Specifications and Operation Limits

	MODEL	400-HSRO
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.2
	Permeate flow rate,m^3/d(gpd)	34(9,000)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

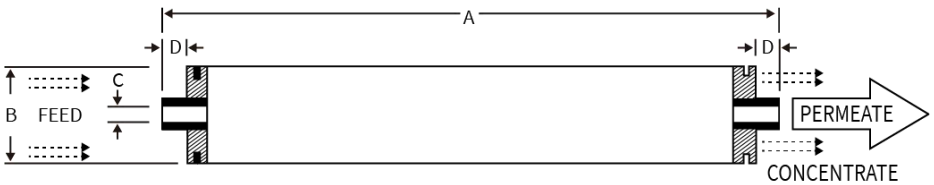
Hynamo® 4040-HSRO
Heat Sanitizable Element

➔ Product Specifications and Operation Limits

	MODEL	4040-HSRO
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.2
	Permeate flow rate,m^3/d(gpd)	7.9(1,900)
	Active membrane area,m^2(ft^2)	8.36(90)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

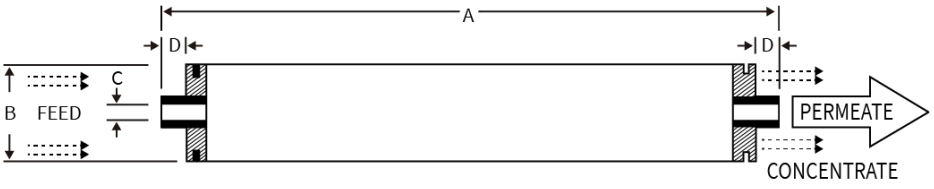
Hynamo® PLUS-4040-LP
Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-4040-LP
Product specifications	Nominal salt rejection,%	99.7
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	10.2(2,700)
	Active membrane area,m^2(ft^2)	8.7(94)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

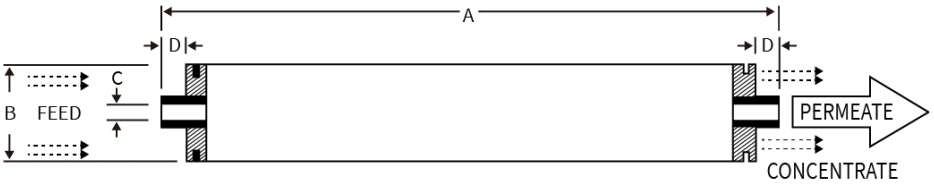
Hynamo® MAX-4040-LP
Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	MAX-4040-LP
Product specifications	Nominal salt rejection,%	99.6
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	12.1(3,200)
	Active membrane area,m^2(ft^2)	8.7(94)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

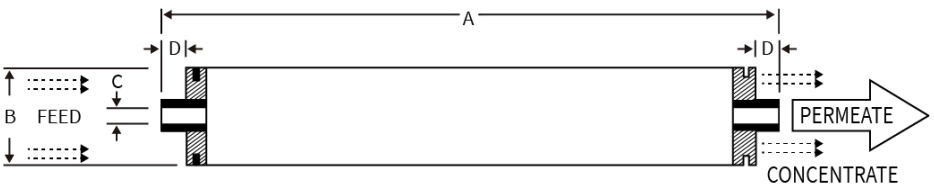
Hynamo® PLUS-4040-ULP
Ultra-low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-4040-ULP
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.2
	Permeate flow rate,m^3/d(gpd)	10.2(2,700)
	Active membrane area,m^2(ft^2)	8.7(94)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

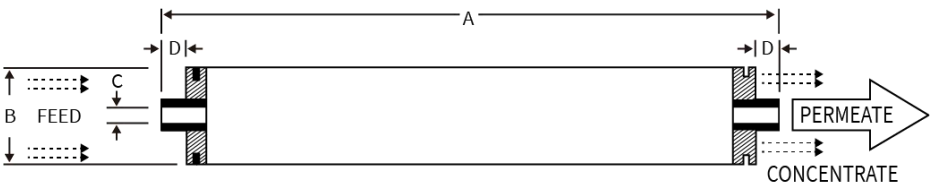
Hynamo® MAX-4040-ULP
Ultra-low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	MAX-4040-ULP
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.2
	Permeate flow rate,m^3/d(gpd)	12.1(3,200)
	Active membrane area,m^2(ft^2)	8.7(94)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

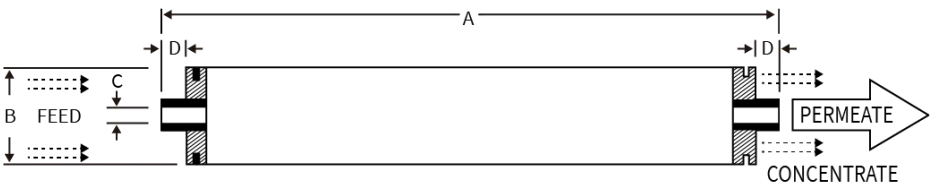
Hynamo® PLUS-4040-XLP
Extra Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-4040-XLP
Product specifications	Nominal salt rejection,%	99
	Minimum salt rejection,%	98.5
	Permeate flow rate,m^3/d(gpd)	10.6(2,800)
	Active membrane area,m^2(ft^2)	8.7(94)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	500
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

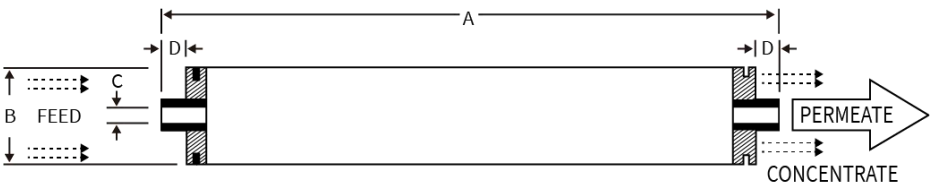
Hynamo® MAX-4040-XLP
Extra Low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	MAX-4040-XLP
Product specifications	Nominal salt rejection,%	99
	Minimum salt rejection,%	98.5
	Permeate flow rate,m^3/d(gpd)	12.1(3,200)
	Active membrane area,m^2(ft^2)	8.7(94)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	500
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

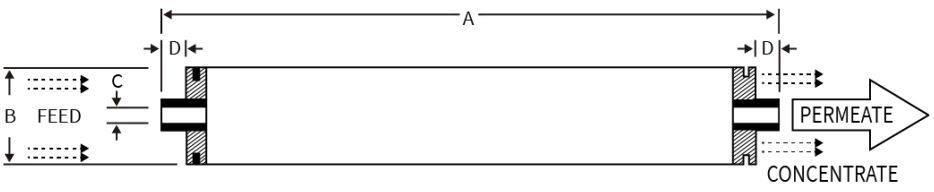
Hynamo® PLUS-4040-FR
Fouling Resistance Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-4040-FR
Product specifications	Nominal salt rejection,%	99.7
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	9.1(2,400)
	Active membrane area,m^2(ft^2)	8.1(87)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	225(15.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

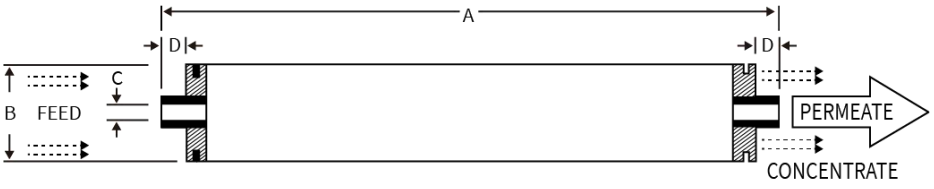
Hynamo® PLUS-4040-VLP
Low-Energy Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-4040-VLP
Product specifications	Nominal salt rejection,%	99
	Minimum salt rejection,%	98.5
	Permeate flow rate,m^3/d(gpd)	11.3(3,000)
	Active membrane area,m^2(ft^2)	8.7(94)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	500
	Pressure,psi(bar)	80(5.5)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

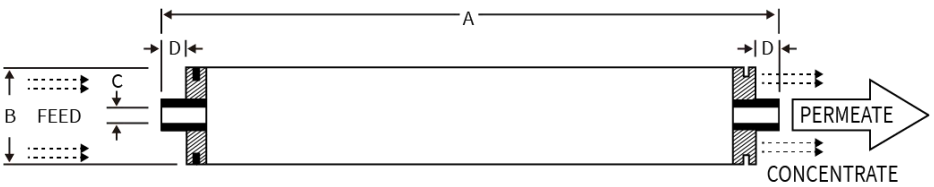
Hynamo® SW-4040-HR
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-4040-HR
Product specifications	Nominal salt rejection,%	99.8
	Minimum salt rejection,%	99.6
	Permeate flow rate,m^3/d(gpd)	6.8(1,800)
	Active membrane area,m^2(ft^2)	8.7(94)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,000(68.9)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

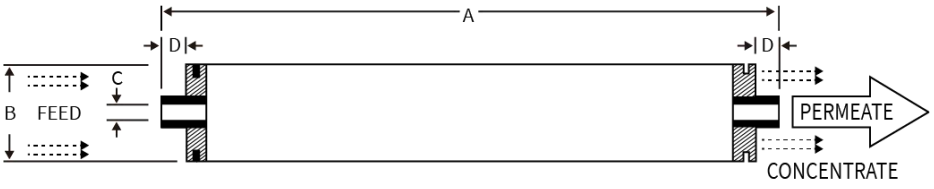
Hynamo® SW-4040-HRLE
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-4040-HRLE
Product specifications	Nominal salt rejection,%	99.8
	Minimum salt rejection,%	99.5
	Permeate flow rate,m^3/d(gpd)	7.6(2,000)
	Active membrane area,m^2(ft^2)	8.7(94)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,000(68.9)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

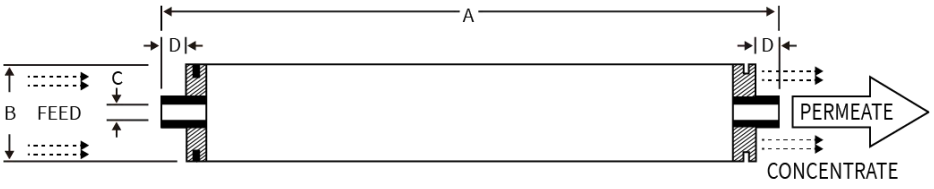
Hynamo® SW-2540-HRLE
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-2540-HRLE
Product specifications	Nominal salt rejection,%	99.6
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	2.3(600)
	Active membrane area,m^2(ft^2)	2.6(28)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,000(68.9)
	Feed water flow,m^3/h	1.4
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	2.4(61)	0.75(19)	1.19(30.2)

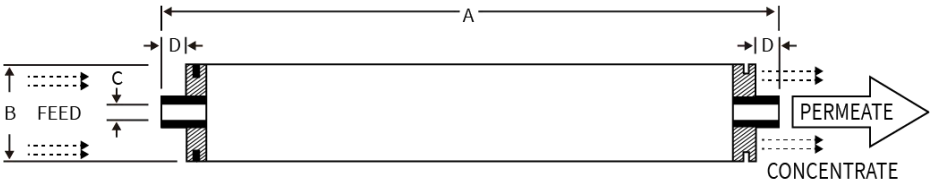
Hynamo® SW-4021-HRLE
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-4021-HRLE
Product specifications	Nominal salt rejection,%	99.6
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	3.4(900)
	Active membrane area,m^2(ft^2)	3.1(33)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	4
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,000(68.9)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
21(533)	3.9(99)	0.75(19)	1.05(26.7)

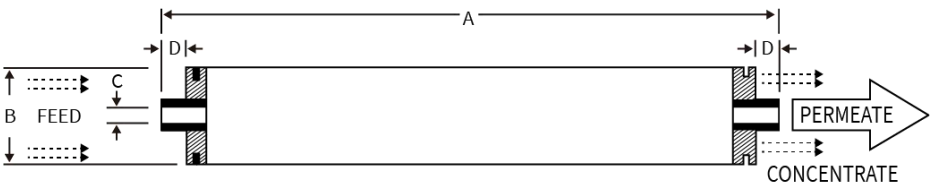
Hynamo® SW-2521-HRLE
Seawater Desalination Element

➔ Product Specifications and Operation Limits

	MODEL	SW-2521-HRLE
Product specifications	Nominal salt rejection,%	99.5
	Minimum salt rejection,%	99.3
	Permeate flow rate,m^3/d(gpd)	1.0(270)
	Active membrane area,m^2(ft^2)	1.1(12)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	32,000
	Pressure,psi(bar)	800(55)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	4
	pH	7-8
Max. operation limits	Pressure,psi(bar)	1,000(68.9)
	Feed water flow,m^3/h	1.4
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
21(533)	2.4(61)	0.75(19)	1.19(30.2)

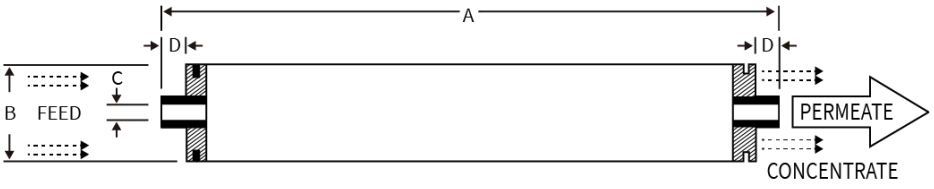
Hynamo® 4021-ULP
Ultra-low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	4021-ULP
Product specifications	Nominal salt rejection,%	99.3
	Minimum salt rejection,%	99
	Permeate flow rate,m^3/d(gpd)	3.6(950)
	Active membrane area,m^2(ft^2)	3.6(39)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
21(533)	3.9(99)	0.75(19)	1.05(26.7)

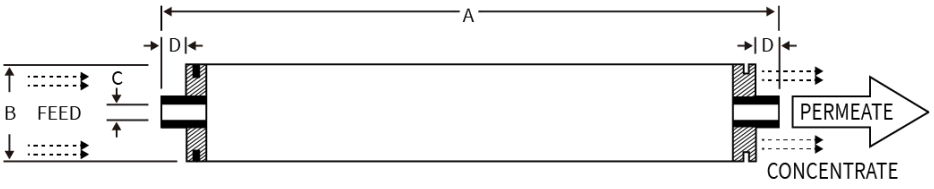
Hynamo® 2521-ULP
Ultra-low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	2521-ULP
Product specifications	Nominal salt rejection,%	99.3
	Minimum salt rejection,%	99
	Permeate flow rate,m^3/d(gpd)	1.13(300)
	Active membrane area,m^2(ft^2)	1.1(12)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	1.4
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
21(533)	2.4(61)	0.75(19)	1.19(30.2)

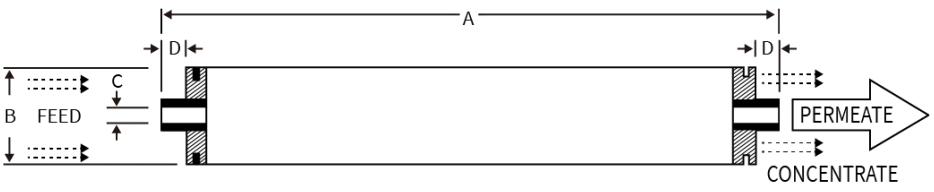
Hynamo® 2540-ULP
Ultra-low Pressure Element

➔ Product Specifications and Operation Limits

	MODEL	2540-ULP
Product specifications	Nominal salt rejection,%	99.3
	Minimum salt rejection,%	99
	Permeate flow rate,m^3/d(gpd)	2.84(750)
	Active membrane area,m^2(ft^2)	2.3(25)
	Feed spacer,mil	28
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	150(10)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	8
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	1.4
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	2.4(61)	0.75(19)	1.19(30.2)

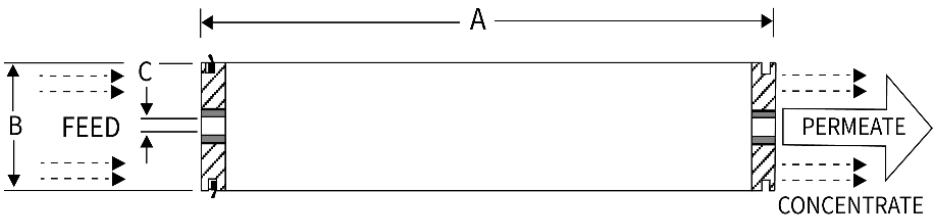
Hynamo® PLUS-400-HDK
NF Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-HDK
Product specifications	Nominal salt rejection,%	98.5
	Minimum salt rejection,%	98
	Permeate flow rate,m^3/d(gpd)	34(9,000)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water $MgSO_4$,ppm	2,000
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

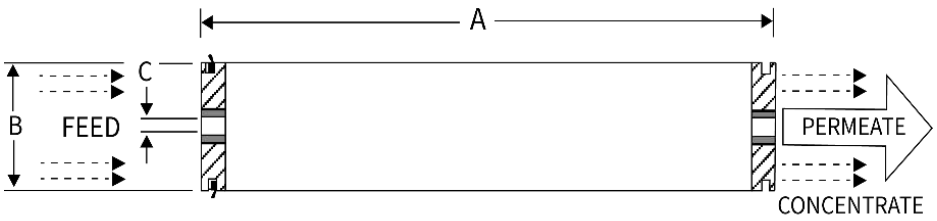
Hynamo® PLUS-400-HDL
NF Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-HDL
Product specifications	Nominal salt rejection,%	97.5
	Minimum salt rejection,%	97
	Permeate flow rate,m^3/d(gpd)	47(12,500)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water $MgSO_4$,ppm	2,000
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

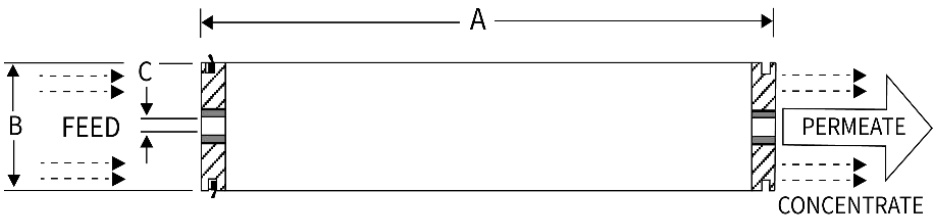
Hynamo® MAX-440-HDL
NF Element

➔ Product Specifications and Operation Limits

	MODEL	MAX-440-HDL
Product specifications	Nominal salt rejection,%	98
	Minimum salt rejection,%	97
	Permeate flow rate,m^3/d(gpd)	52(13,750)
	Active membrane area,m^2(ft^2)	41(440)
	Feed spacer,mil	28
Test conditions	Feed water $MgSO_4$,ppm	2,000
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

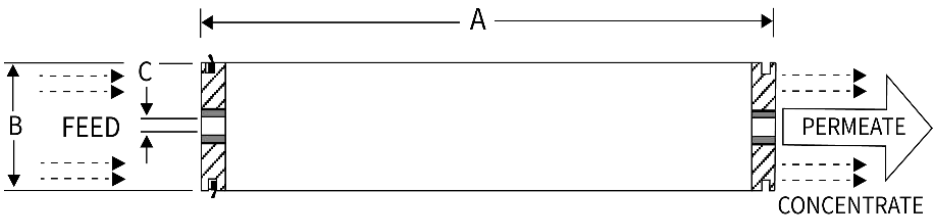
Hynamo® PLUS-400-HDW
NF Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-400-HDW
Product specifications	Nominal salt rejection,%	80-95
	Minimum salt rejection,%	80-95
	Permeate flow rate,m^3/d(gpd)	38(10,000)
	Active membrane area,m^2(ft^2)	37.2(400)
	Feed spacer,mil	34
Test conditions	Feed water NaCl,ppm	2,000
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	17
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)
40.0(1,016)	7.89(200)	1.125(28.6)

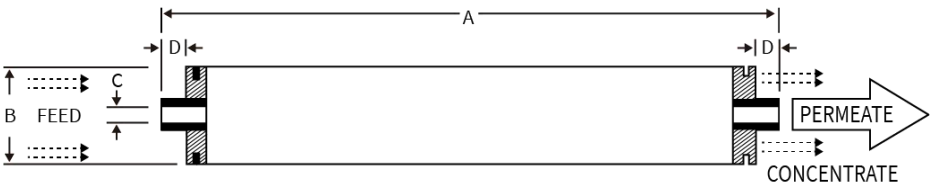
Hynamo® PLUS-4040-HDK
NF Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-4040-HDK
Product specifications	Nominal salt rejection,%	98.5
	Minimum salt rejection,%	98
	Permeate flow rate,m^3/d(gpd)	7.2(1,900)
	Active membrane area,m^2(ft^2)	8.36(90)
	Feed spacer,mil	34
Test conditions	Feed water $MgSO_4$,ppm	2,000
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

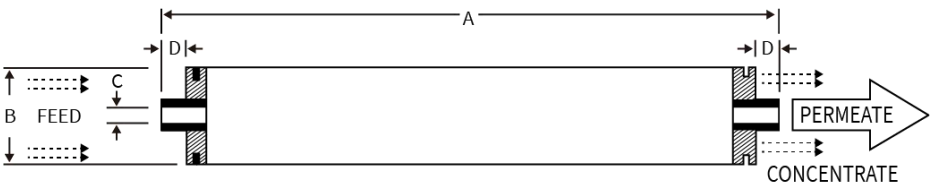
Hynamo® PLUS-4040-HDL
NF Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-4040-HDL
Product specifications	Nominal salt rejection,%	97.5
	Minimum salt rejection,%	97
	Permeate flow rate,m^3/d(gpd)	9.5(2,500)
	Active membrane area,m^2(ft^2)	8.36(90)
	Feed spacer,mil	34
Test conditions	Feed water $MgSO_4$,ppm	2,000
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

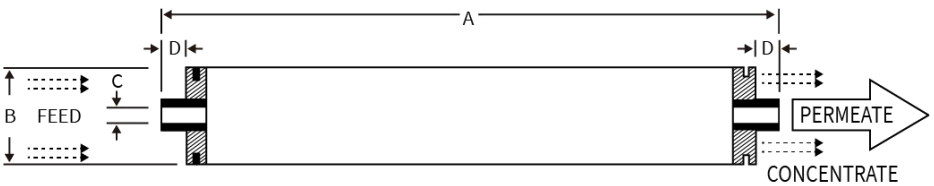
Hynamo® PLUS-4040-HDW
NF Element

➔ Product Specifications and Operation Limits

	MODEL	PLUS-4040-HDW
Product specifications	Nominal salt rejection,%	80-95
	Minimum salt rejection,%	80-95
	Permeate flow rate,m^3/d(gpd)	6.1(1,600)
	Active membrane area,m^2(ft^2)	8.36(90)
	Feed spacer,mil	34
Test conditions	Feed water NaCL,ppm	2,000
	Pressure,psi(bar)	100(6.9)
	Temperature,℉(℃)	77(25)
	Recovery rate of single membrane element,%	15
	pH	7-8
Max. operation limits	Pressure,psi(bar)	600(41.4)
	Feed water flow,m^3/h	3.6
	Feed free chlorine tolerance,mg/l	<0.1
	pH range during continuously operation	2-11
	Max. pressure drop for single element,psi(bar)	15(1.0)
	Temperature,℉(℃)	113(45)
	Feed Silt Density Index(15 min)SDI_{15}	5
	pH range during chemical cleaning	1-13

- The salt rejection rate generally needs to be tested after 24-48 hours of continuous operation, depending on the feed water quality and operating conditions.
- The flow rate of a single membrane element may vary, but within a range of ±15%.

➔ Element Dimensions



A inches(mm)	B inches(mm)	C inches(mm)	D inches(mm)
40.0(1,016)	3.9(99)	0.75(19)	1.05(26.7)

Three-year Warranty For RO Membrane Element

The company provides users (hereinafter referred to as the buyer) with the following limited quality assurance regarding the materials, manufacturing and element performance of the roll reverse osmosis membrane elements they produce:

1． Material and manufacturing guarantee

The company guarantees that the reverse osmosis membrane elements it sells are free from defects in materials and manufacturing. In accordance with applicable compulsory laws and regulations, the company assumes guarantee obligations in terms of materials and manufacturing within 12 months from the date the buyer receives the product. Under the declared materials and manufacturing guarantees, the buyer's specific compensation requirements and the company's (including the organization in the process of transportation and sales) the buyer's guarantee obligations are limited. In the event of problems due to membrane element materials and manufacturing, and after confirmation by the company, the company is responsible for repair or replacement within the delivery period specified in the original sales contract. The cost of replacing the membrane element is the responsibility of the buyer. In order to avoid misunderstanding, the company reiterates that this material and manufacturing warranty do not apply to damage to membrane elements caused by failure to follow the requirements of the company's operation and operation manual, or operation under good conditions.

2． Initial performance guarantee

According to the test conditions specified in the company's product manual, the membrane element has the initial minimum water production and minimum desalination rate specified in the product manual. If any membrane element does not reach the required initial performance, the buyer must notify the company of the relevant defects timely. After confirming the performance defects, the company will decide whether to repair or replace the new elements. In this case, the company will bear the shipping costs.

3． Performance guarantee

During the warranty period (see "4. Warranty Period"), under the standard test conditions specified in the company's product sample manual, the company provides the following performance guarantee for membrane elements:

(a) its salt transmission rate does not exceed three times the maximum salt transmission value;

(b) Its water production is not less than 70% of the minimum water production value specified in the product brochure.

4． Warranty period

The company guarantees the performance of the membrane element for three years, and the starting time of the three years is subject to the following time points ("guarantee period"): date of commissioning of the reverse osmosis membrane elements, or six months after shipment from the membrane element manufacturer (whichever comes first).

5． Warranty conditions

If any of the conditions listed below cannot be satisfied, the warranty terms guaranteed by the company in the above section are invalid.

(a) The design of the membrane system must meet the requirements of the engineering conditions and the requirements recommended by the company's operation and operating instructions. The operating conditions of the operation must not exceed the engineering conditions defined in the company's product brochure.

(b) The design parameters of the membrane system, including the arrangement and recovery of membrane elements, and the pressure vessels on which the instruments and membrane elements are placed must comply with reliable engineering and technical requirements. Haina reserves the right to review the system design. Regardless of whether Haina exercises the right to review the system design, the company does not assume compensation for damage caused by system design.

(c) The inlet water temperature must be below 45 ° C;

(d) Influent SDI (15min, 30psi) must be less than 5.0; feed water turbidity ≤ 1.0NTU;

(e) Membrane elements must not be contaminated by sediments, suspended matter, and any organic matter, inorganic scales, chemicals or organisms that affect membrane performance; the incoming water must not contain oil, grease, or other organic substances that are harmful to the membrane elements And inorganic substances; must not contain ozone, active chlorine and other strong oxidants that have proven to be harmful to the operation of membrane elements;

(f) Do not use non-ionic surfactants or cationic active agents, and coagulants for chemical cleaning, and do not allow membrane elements to come into contact with them;

(g) The membrane element shall not be subjected to any physical shock during startup, normal operation and cleaning, such as damage caused by load shock, vibration, pulsation, air or water hammer. Back pressure at any time (reverse osmosis water production side static pressure minus concentrated water side static pressure) must not exceed 0.7kg / cm2 (10psi);

(h) When the system performance (water production, desalination rate or pressure loss) decreases under standard conditions, corresponding measures should be taken in a timely manner;

(i) The buyer is responsible for providing reasonable system operation and maintenance manuals to the end user, and shall provide training for operators and managers to ensure that the user has the ability to perform cleaning and other system performance recovery and disposal and general troubleshooting;

(j) The buyer must keep all operation records of the membrane system after it starts operation, including fault handling, daily maintenance management, etc., and organize these data in a standard format to facilitate analysis and search for the cause of the fault. When the buyer submits a compensation claim to the company in accordance with the terms of the warranty, he must also provide the company's operation record data;

(k) Before installation and use, the membrane elements must be stored in their original packaging, avoiding direct sunlight, and the ambient air temperature during storage must not be higher than 35 ° C (95 ° F) or lower than 0 ° C (32 ° F).

6． Warranty liability

(a) Under this quality guarantee, the buyer's specific compensation requirements and the company's (including the organization in the process of transportation and sales) guarantee obligations are limited. If any membrane element does not meet the required guaranteed performance, the company will determine what measures to take, such as repairing,

restoring, replacing or adding membrane elements, etc., and discount the appropriate price at the current selling price (the unfulfilled warranty period). After replacing the element, the price does not include the various costs such as customs duties, VAT, and installation.

(b) The company's warranty liability is limited to the total number of repairs or replacements that is less than or equal to the number of elements that were originally installed with performance issues. The buyer shall be responsible for the expenses incurred in the replacement of the membrane element.

(c) The company may, at its discretion, (i) send its engineers to the site for testing, or (ii) require the buyer to return the suspected defective membrane element to the company for inspection at the expense of the other party. If the test results show that: ❶ the degradation of the membrane element is caused by a violation of the performance guarantee, or ❷ the operating performance of the membrane element meets the performance guarantee, the buyer will need to pay the company the inspection fee, and in addition The company pays the costs related to the testing and transportation of returned membrane elements.

7． Additional information

(a) When a scale inhibitor is required for the membrane system, please check the compatibility with the manufacturer.

(b) Permeate must be discharged during the first hour of operation.

(c) When using formalin as a fungicide, the membrane element must operate normally for at least 24 hours. If the membrane is exposed to formalin during this time, it will result in a significant reduction in water production.

(d) Before sending to our company a membrane element that requires quality inspection, please contact our customer representative.

8． Warranty statement

Other than the above, no other warranty is provided. Any commercial, implied warranties, and warranties applicable to a particular purpose are excluded from the warranty. The company is not responsible for any damage caused by the buyer's intention or negligence, or damage caused by other third parties. The expiration, termination, or cancellation of this warranty does not affect all limitations on liability. Any failure or refusal to completely provide the company with the use and operating parameters of the membrane element will invalidate all warranties other than material and manufacturing guarantees.

Edition No.HN20240700EA

Wachat

Hangzhou Haina Environmental Protection Technology Co.,LTD
Add: 8 Guanshan Road,Pingyao Town,Yuhang District, Hangzhou City
Tel: +86 0571-88587247
E-mail: haina@hn-jcm.com
WWW: http://www.hn-jcm.com