

## 4 x 21 INCH TAPE WRAP BRACKISH ELEMENT

### MODEL TR70-4021-HF & TRH-4021

Membrane Type	Crosslinked Aromatic Polyamide, Negative Charge
Element Configuration	Spiral Wound, Tape Wrap

#### Performance Specification

	TR70-4021-HF	TRH-4021
	High Flow	Low Pressure, High Flow
<b>Salt Rejection avg.<sup>1,2</sup></b>	<b>99.4 %</b>	<b>99.0 %</b>
<b>Product Flow Rate<sup>1,2</sup></b>	<b>5'400 l/d (1'425 gpd)</b>	<b>4'700 l/d (1'240 gpd)</b>
	Testconditions: A	Testconditions: B

#### Notes:

<sup>1</sup> Test Conditions	<u>A</u>	<u>B</u>	
Temperature	25	25	°C
Feed Solution, Concentration	1500	500	ppm NaCl
Feed Pressure	15	7.5	bar
Brine : Permeate ratio	5 : 1	5 : 1	
Feed pH	6.5 - 7.5	6.5 - 7.5	

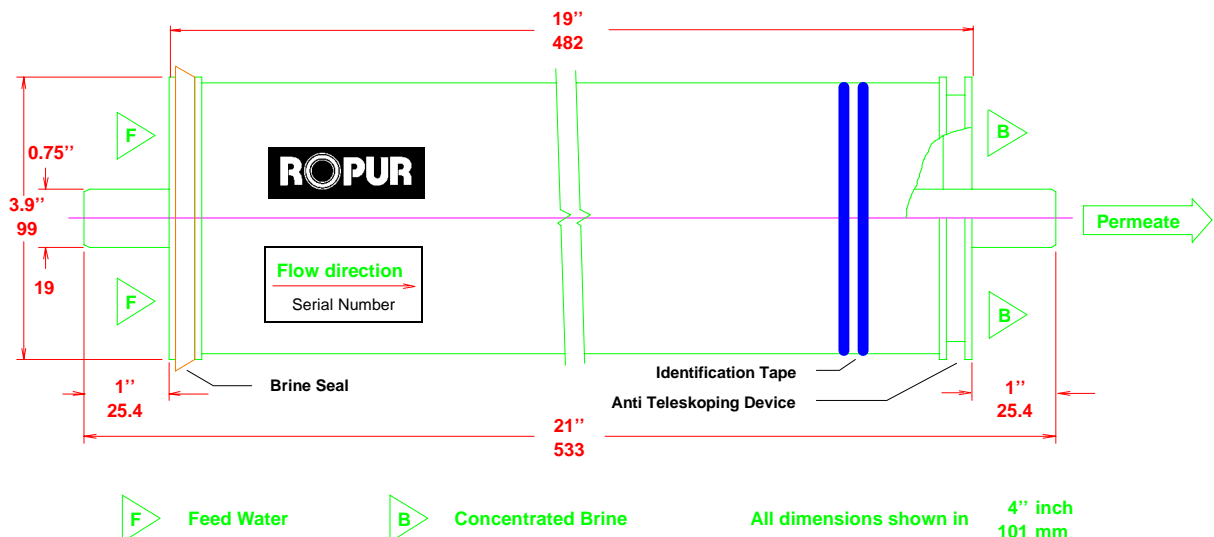
<sup>2</sup> Average value for 100 elements after 1 hour operation

Product Flow Rate +/- 15%

Salt Rejection minimum 98 %

<sup>3</sup> Minimum Performance data are for any single element

#### Dimensions:



## Design Conditions

### Recommended <sup>1</sup>

Operating Pressure <sup>2,3</sup>	<b>&lt; 15.0 kg/cm<sup>2</sup></b>	(216 psi)
Operating Temperature <sup>4</sup>	<b>&lt; 35 °C</b>	(95 °F)
Feedwater Turbidity (SDI <sub>15</sub> ) <sup>2,5</sup>	<b>&lt; 5</b>	
Feedwater Chlorine Concentration	<b>0 ppm</b>	
pH Range, Continuous Operation <sup>6</sup>	<b>3 - 11</b>	
pH Range, Chemical Cleaning <sup>7</sup>	<b>3 - 11</b>	
Feed Flow Rate per Vessel	<b>&lt; 2'200 l/h</b>	(10 gpm)
Brine Flow Rate per Vessel <sup>9</sup>	<b>&gt; 600 l/h</b>	(2.6 gpm)
Brine/Permeate Flow Ratio <sup>8</sup> ,	<b>5 : 1</b>	
Pressure Drop (per Element) <sup>10</sup>	<b>0.5 kg/cm<sup>2</sup></b>	(7 psi)
Pressure Drop (per Vessel) <sup>10</sup>	<b>1.0 kg/cm<sup>2</sup></b>	(14 psi)

### Notes:

- <sup>1</sup> The recommended design range means safe operational and design conditions under not so much fouling and scaling. If the TR-series elements are operated outside of the recommended design range, the effective membrane life may be reduced.
- <sup>2</sup> High flux operation (operation under high permeate flow rate per single element) on feedwater turbidity greater than 3 or 4 SDI<sub>15</sub> generally results in frequent cleaning requirements. Operating pressure should be selected to maintain the flux rate, or permeate flow rate per single element.
- <sup>3</sup> Maximum 20 kg/cm<sup>2</sup> (288 psi)
- <sup>4</sup> Maximum 35 °C (95 °F)
- <sup>5</sup> SDI<sub>15</sub> = Silt Density Index measured according to ASTM D4189
- <sup>6</sup> Both feed and brine water must meet this range.
- <sup>7</sup> Cleaning and sterilization must meet the recommendations in the Technical Bulletin.
- <sup>8</sup> Flow ratio of brine to permeate for each single element
- <sup>9</sup> This figure may be reduced when there is low possibility of fouling and scaling
- <sup>10</sup> Element(s) must be cleaned when pressure drop increases to 1.5 times of the initial value.