ULP Series 2.5-inch Membrane Elements

1. Brief Introduction

The ULP (Ultra Low Pressure) series are the ultra low-pressure aromatic composite membrane elements newly developed by Vontron Membrane Technology Co., Ltd. applicable to desalination of surface water and underground water. It can work under ultra low pressure to reach as high permeate flow and salt rejection as regular low-pressure membrane can. It operates under approximately 2 thirds of the operating pressure of regular low-pressure composite membrane, and achieves a salt rejection rate of up to 99.0%, which can decrease the investment costs for such relevant facilities as pump, piping, and container, etc. and the operating cost for the RO system, thus increasing the economic efficiency.

Being suitable for the desalination treatment of those water resources with salt concentration lower than 2000ppm, such as surface water, underground water, tap water and municipal water, etc., ULP series membrane elements are mainly applicable to numerous applications of various scales, such as pure water, boiler water replenishment, foodstuff processing, and pharmaceutical production, etc.

The 2.5-inch membrane elements are mainly applicable to various small-sized systems, such as household water purifying machine, and other water purifying devices in hospital and laboratory.

2． Specifications and Major Properties

Model	Average Refection Rate (%)	Average Permeate Flow GPD（m^3/d）	Active Membrane Area ft^2(m^2)
ULP21-2521	99.0	300（1.13）	12（1.1）
ULP21-2540	99.0	750（2.84）	28（2.6）

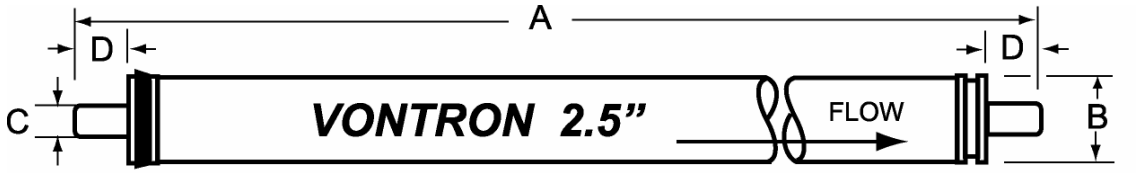
Testing Conditions: Testing Pressure …… 150psi (1.03Mpa)
Temperature of Testing Solution …… 25℃
Concentration of Testing Solution (NaCl) …… 1500 ppm
PH Value of Testing Solution …… 7.5
Recovery Rate of Single Membrane Element …… 8% (2521-sized)
15% (2540-sized)

3. Extreme operation Conditions

Max. Operating Pressure …… 600psi (4.14Mpa)
Max. Feedwater Flow …… 6.0gpm(1.4 m^3/h)
Max. Temperature of Feedwater …… 45℃
Max. SDI of Feedwater …… 5
Free Chlorine Concentration of Feedwater … … ＜0.1ppm
PH Value Range of Feedwater as Continuous Operation …… 3～10
PH Value Range of Feedwater as Chemical Cleaning …… 2 ~ 11
Max. Pressure Difference of Single Membrane Element …… 15psi (0.07Mpa)

4. Dimensions of Membrane Element

All dimensions shown in the figure are in: millimeter (inch)



2540: A=1016.0mm (40”) B=61.0mm (2.4”) C=19.1mm (0.75”) D=30.2mm (1.19”)
2521: A=533.4mm (21”) B=61.0mm (2.4”) C=19.1mm (0.75”) D=30.2mm (1.19”)

5. Important Information

1) For any recommended design scope, please refer to the latest edition of technology manual and design guide prepared by Vontron Membrane Technology Co., Ltd., or consult experts proficient in membrane technology. In case the customer fails to follow the operating conditions as specified in this manual, Vontron Membrane Technology Co., Ltd. will assumes no liability for all results.
2) The permeate flow listed in the table is the average value. The permeate flow of single membrane element is with a tolerance of ±15%.
3) Before leaving the factory, all wet membrane elements will have been strictly tested, and have been treated for storage with the solution of 1.0% sodium hydrogen sulfite (an antifreeze solution of 10% propanediol will further added in winter), then packed in vacuum, and outer packing is carton. In order to prevent the breeding of microbes during short-time storage, transportation and system standby, we recommend you to soak the membrane elements with the protective solution (prepared with RO permeate water) containing 1.0% sodium hydrogen sulfite (foodstuff-purpose).
4) Discard RO product water produced during the first one hour after system start-up.
5) During storage time and run time, it is strictly prohibited to add any chemical medicament, which may be harmful to membrane elements. In case of any violation in using this kind of chemical medicament, Vontron Membrane Technology Co., Ltd. assumes no liability for all results.

Notice:

1. All data and information provided in this manual have been obtained from long-time experiment by Vontron Membrane Technology Co., Ltd. We believe the data and information contained herein to be accurate and effective. However, since the conditions and methods for use of our products are beyond our control, Vontron Membrane Technology Co., Ltd. assumes no liability for all results obtained or damages incurred through the application of the presented data and information. Regardless of separate use or working with other products, it is strongly recommended that the users shall carry out experiment to determine the safety of Vontron’s products and their applicability to customers’ specific end uses.
2. Due to technology development and products renovation, products information will be subject to modification without prior notification. Please pay attention to Vontron’s latest products information.