Membrane Solutions® Residential RO Membrane Elements

Brief Introduction

Membrane Solutions® Residential RO Membrane Elements are mainly applicable to various water purification systems. Reverse osmosis membrane can remove microorganisms, virus, metal ions, carcinogens and other soluble salt from water effectively.

Feature

- Low operating pressure (45psi-100psi)
- Stable permeate flux and desalination
- High removal efficiency of harmful substance
- Saving 20%-30% in costing
- ROULP-1812-60 can be used without pump or water tank

Application

- Direct drinking machine
- Household water purifier
- Commercial water purifier
- Purifying devices in hospital and laboratory
Membrane Solutions®
Residential RO Membrane Elements

----------Your Safe Our Success----------

**Nomenclature**

- **ROULP 18 12 50**
  - Permeate Flow in GPD (gallon per day)
    - 50 (50 GPD); 75 (75 GPD); 400 (400 GPD)
  - Length of Membrane Element in inch
  - Membrane Element Diameter in inch (to be multiplied by 0.1)
    - 1812: 1.8-inch diameter, 12-inch length
    - 2012: 2.0-inch diameter, 12-inch length
    - 2812: 2.8-inch diameter, 12-inch length
    - 3012: 3.0-inch diameter, 12-inch length
    - 3013: 3.0-inch diameter, 13-inch length
  - Membrane Type
    - ULP: Ultra-low-pressure Element

**Dimensions**

- **Model**
  - **A inch (mm)**
  - **B inch (mm)**
  - **C inch (mm)**
  - **D1/D2 inch (mm)**
  - **ROULP-1812-24**
    - 11.7 (298)
    - 1.8 (44.5)
    - 0.67 (17)
    - 0.98 (25)/0.82 (21)
  - **ROULP-1812-36**
    - 11.7 (298)
    - 1.8 (44.5)
    - 0.67 (17)
    - 0.98 (25)/0.82 (21)
  - **ROULP-1812-50**
    - 11.7 (298)
    - 1.8 (44.5)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-1812-60**
    - 11.7 (298)
    - 1.8 (44.5)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-1812-75**
    - 11.7 (298)
    - 1.8 (44.5)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-1812-80**
    - 11.7 (298)
    - 1.8 (44.5)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-2012-100**
    - 11.7 (298)
    - 2.0 (48.2)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-2012-150**
    - 11.7 (298)
    - 2.0 (48.2)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-2812-200**
    - 11.7 (298)
    - 2.8 (71.1)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-3012-300**
    - 11.7 (298)
    - 3.0 (76.2)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-3012-400**
    - 11.7 (298)
    - 3.0 (76.2)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-3012-500**
    - 11.7 (298)
    - 3.0 (76.2)
    - 0.67 (17)
    - 0.82 (21)
  - **ROULP-3013-400**
    - 12.9 (328)
    - 2.7 (68.0)
    - 0.67 (17)
    - 0.75 (19)
## Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Average Permeated Flow GPD (m³/d)</th>
<th>Stable Rejection Rate (%)</th>
<th>Minimum Rejection Rate (%)</th>
<th>Testing Pressure (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROULP-1812-24</td>
<td>24 (0.1)</td>
<td>97</td>
<td>95</td>
<td>60</td>
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<tr>
<td>ROULP-1812-36</td>
<td>36 (0.14)</td>
<td>97</td>
<td>95</td>
<td>60</td>
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<td>50 (0.2)</td>
<td>97</td>
<td>95</td>
<td>60</td>
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<td>60 (0.23)</td>
<td>93</td>
<td>91</td>
<td>45</td>
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<td>ROULP-1812-80</td>
<td>80 (0.30)</td>
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<td>ROULP-2012-100</td>
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<td>ROULP-2012-150</td>
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<td>200 (0.76)</td>
<td>97</td>
<td>95</td>
<td>100</td>
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<td>300 (1.14)</td>
<td>97</td>
<td>95</td>
<td>100</td>
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<td>400 (1.52)</td>
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<td>95</td>
<td>100</td>
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<tr>
<td>ROULP-3012-500</td>
<td>500 (1.90)</td>
<td>97</td>
<td>95</td>
<td>100</td>
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</table>

### Testing Conditions

| Testing Solution Concentration (NaCl) | 250 ppm |
| Testing Solution Temperature         | 25 °C (77 °F) |
| pH Value of Testing Solution         | 7.5 |
| Recovery Rate of Single Element      | 15% |

### Operation Limits and Conditions

| Max. Feedwater Temperature | 45 °C (113 °F) |
| Max. Working Pressure       | 20.7 bar (300 psi) |
| Max. Feedwater Flow         | 7.6 LPM (2.0 GPM) |
| pH Range of Feedwater during Continuous Operation | 3~10 |
| Max. Feedwater SDI<sub>15</sub> | 5 |
| Residual chlorine Concentration of Feedwater | ≤0.1 ppm |
1. The permeate flow listed in the table is the average value. The permeate flow of single membrane element is with a tolerance not exceeding ±15%.

2. Any specific application must be limited within the Operating Limits and Conditions. All data and information provided in this manual have been obtained from long-term experiment by Membrane Solutions, LLC. Discard the RO-filtered water produced during the first one hour after system star-up.

3. The membrane elements shall be always kept in wet condition once been moistened. In order to prevent the breeding of microbes during system standby, we recommend you to soak the membrane elements with protective solution.

4. In some special case, the membrane may be damaged of degradation reaction caused by active chlorine or other oxidizing agents. Membrane Solutions®RO products can resist active chlorine damage for a short time, but they will be damaged by continuous contact with active chlorine. In this case, it is strongly recommended the users to preprocess any active chlorine before using the membrane element.

5. During storage time and run time, it is strictly prohibited to dose any chemical medicament that may be harmful to membrane elements. In case of any violation in using this kind of chemical medicament, Membrane Solutions, LLC. assumes no liability for any outcome incurred herefrom.