

DEAD-END ORGANIC SOLVENT NANOFILTRATION BENCHTOP

BASIC DESCRIPTION

The dead-end organic solvent nanofiltration benchtop is suitable for membrane screening and determining molecular weight cut-off in parallel. It enables testing of circular, flat-sheet membranes with a diameter of 5 cm. The setup features a 2 liter tank which is pressurized using nitrogen gas. This pressure transfer is the driving force for the liquid to migrate to the measurement cells and the means to permeation. The unit is operated at room-temperature at up to 40 barG operational pressure. The cells are equipped with stirrers to ensure a well mixed feed and to prevent concentration polarization near the membrane surface. Up to 3 flat sheet membranes can be tested in parallel.



UNIT CHARACTERISTICS

- 3x flat sheet membrane housing for circular membranes of 5 cm diameter
- Chemically resistant
- Pressurized using N₂ gas
- Equipped with stirrers to prevent concentration polarization
- Operational pressures of up to 40 barG

TYPICAL APPLICATIONS

Testing of flat-sheet membranes in dead-end configuration for:

- Membrane stability testing with different solvents and/or solutes
- Molecular weight cut-off determination
- Active pharmaceutical ingredient (API) retention screening
- Single solvent flux testing

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UNIT SPECIFICATIONS

| Parameter | Value |
|---------------------------------|----------------------|
| Max. number of membrane modules | 3 pcs |
| Feed vessel volume | 2 liter |
| Nitrogen supply pressure | <200 barG |
| Unit dimensions (l x w x h) | 1200 x 500 x 1000 mm |
| Unit weight | 100 kg |

MODULE SPECIFICATIONS

| Parameter | Value |
|--|----------------------|
| Effective area of flat sheet module (circular) | 19.6 cm ² |
| Flat sheet module diameter (d) | 50 mm |

OPERATING WINDOW

| Parameter | Value |
|----------------------------|-----------|
| Maximum feed volume | 2.0 liter |
| Operational temperature | RT °C |
| Operational pressure range | 0—40 barG |