Models 230 and 231

Membrane Osmometer

For the Determination of Number Average Molecular Weight, Oncotic Pressure and Osmolality

The Model 230 and 231 Membrane Osmometers are an effective, easy to use tool for the determination of number average molecular weights of any solute in the range of 20,000-1,000,000 Dalton.

Principles of Operation

The membrane osmometer operates on the principle that if a pure solvent and a solution in that solvent are separated by a membrane permeable to the solvent, a difference in chemical potential across the membrane is established. In turn, this difference in chemical potential will, until the system returns to equilibrium, cause solvent molecules to migrate across the membrane from the side of higher concentration to the side on which they are lower in concentration.

If the solvent is confined to a chamber of fixed volume, the migration of solvent molecules will result in a reduction of pressure in the solvent chamber until the pressure drop across the membrane equals the osmotic pressure of the solution.

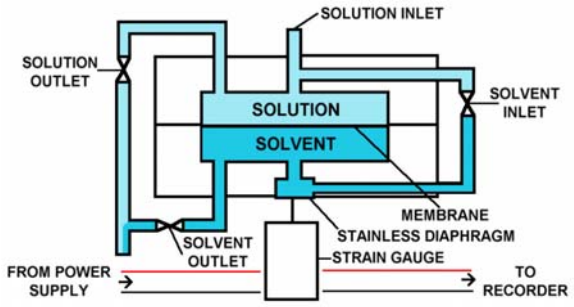
UIC's membrane osmometers consist of a stainless steel cell containing two membrane-separated compartments, a flexible stainless steel diaphragm and strain gauge, adjustable high-precision temperature controller, and a highly stable power supply.

The unique strain gauge detection system employed by these osmometers is primarily responsible for the superior performance and versatility of the instruments.

Elimination of the familiar hydrostatic pressure-addition systems permits a more compact instrument capable of providing either narrow pressure ranges (0-5 cm H_2O) for molecular weight determinations or very wide pressure ranges (0-100 cm H_2O) for oncotic pressure or osmolality measurements.

Specifications:

Accuracy: 0.5% full scale of any range
Stability: 0.02 cm H2O
MW Range: 100-25,000 Dalton (toluene)
100-5,000 Dalton (water)
Temp. Range: 30 - 130oC, Model 230
5 - 130oC, Model 231
Pressure Ranges: 0-5 cm H2O.....0-10 cm H2O
0-50 cm H2O...0-100 cm H2O
Response Time: 5 - 30 minutes
Cell Volume: Less than 0.5ml
Power Requirements: 115/220V, 50/60 Hz, 1A
Dimensions: Controller 17.25"L x 3.8"H x 10.5"D
Cell 8.5"L x 12.5"H x 8.5"D
Weight: Controller: 8 lbs., Cell: 19 lbs.



Ordering Information

JI230-300-00 - Model 230 Membrane Osmometer - Includes controller, measuring cell, associated cables and operation manual.

JI231-100-01 - Model 231 Membrane Osmometer - Includes controller, measuring cell, associated cables and operation manual.

JI503-020-01 - Strip Chart Recorder - Includes cable, power cord, paper and operation manual.

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