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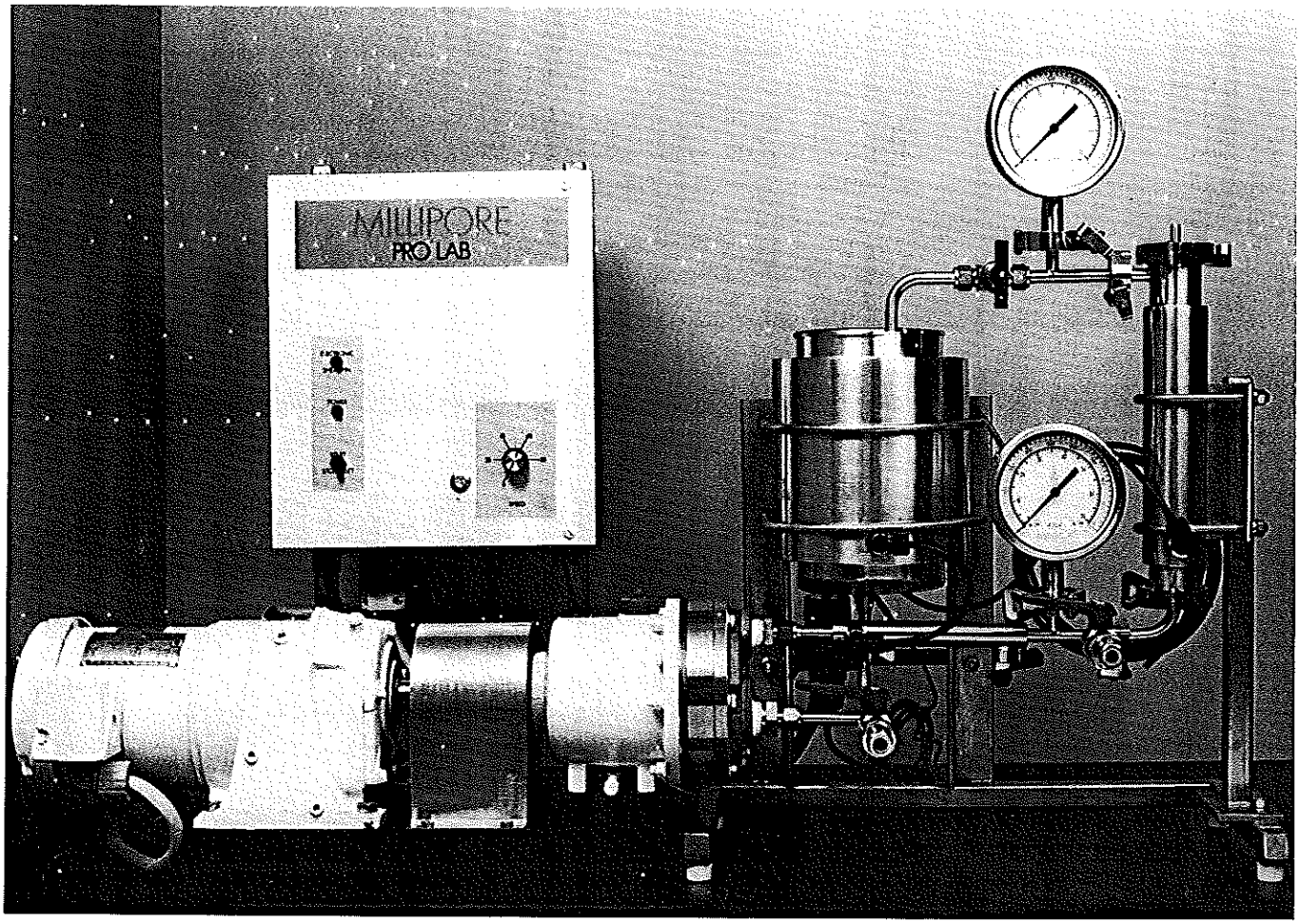
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Find the *EMD Millipore Pro-Lab 1* at our website: ***Click HERE***

SYSTEMS BRIEF

# Pro-Lab Bench Top Development System




## Simplify scale-up of reverse osmosis processes.

Millipore PRO systems are tangential flow reverse osmosis systems designed for the rapid concentration of low molecular weight species including antibiotics and peptides. These systems use Millipore spiral wound reverse osmosis cartridges and they include housing, pump, sanitary piping, heat exchanger, pressure instrumentation, tank and frame.

The PRO-Lab 1 bench top development system is designed for basic feasibility studies of membrane types and system operating conditions. It has an exceptionally low hold-up volume — critical for high-value biologicals. And it has a pump capable of generating high pressures so that a wide range of operating characteristics can be tested.

Design Features
- Low hold-up volume
- Quiet operation
- High pressure operation

Applications
- Antibiotic concentration
- Peptide concentration
- Low molecular weight organic concentration
- Desalting

MILLIPORE

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# Specifications

## Materials of construction

| | |
|---|---|
| RO Housing | 316L stainless steel, 180 grit ID, satin OD |
| Piping/fittings | 316L stainless steel, 180 grit ID, satin OD |
| Pump and valves | All wetted parts of 316L stainless steel |
| Tank | All wetted parts of 316L stainless steel |
| Elastomers | Viton |

## Pump and drive

| | |
|---|---|
| Pump type | Triplex diaphragm |
| Model | Wanner Engineering D-10 or equal |
| Flow rate | 1.5 gpm (7.5 lpm) |
| Discharge head | 600 psi (40 bar) |
| Required suction head | Flooded |
| Pump speed | 0-380 rpm |
| Motor speed | 0-380 rpm |
| Motor enclosure | TEFC |
| Motor horsepower | 1½ |
| Speed control | Parajust A |

## Instrumentation and controls

| | |
|---|---|
| Pressure indicators | Anderson gauges: 0-1000 psi |
| Pressure switch | Anderson |
| Temperature controller | Sterlco 56-T with bulb and thermowell |
| High pressure shutdown | 675 psig |

## System requirements

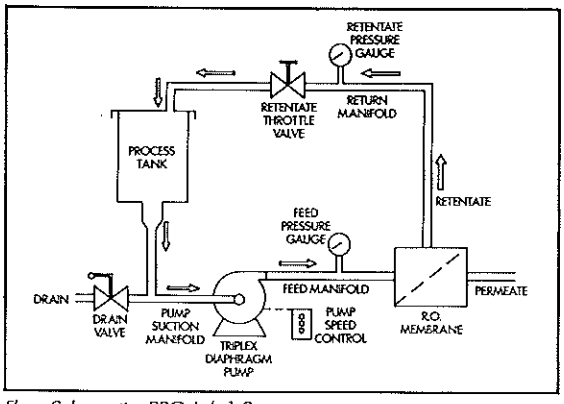
| | | |
|---|---|---|
| Piping connections | Permeate: | ¼" tube |
| | Drain: | ½" tube |
| | Glycol: | ⅜" NPT |
| | 230 VAC, 1Ø, 60 Hz | |

## Physical requirements

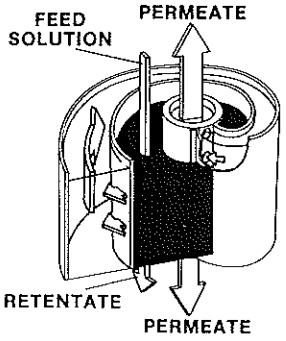
| | |
|---|---|
| Length | 49" |
| Width | 18" |
| Height | 31" |
| Estimated shipping weight | 175 lbs |
| Estimated operating weight | 125 lbs |

| Item | Cat. No. | Description |
|---|---|---|
| PRO-LAB | MSD PROLAB | Housing<br>Tank<br>Pump<br>Heat Exch.<br>Temp Control<br>All 316 Stainless |

MSDPROLAB2




*Flow Schematic, PRO-Lab 1 System*




*Flow path through Millipore reverse osmosis cartridge.*

## Millipore Systems Division

The Millipore Systems Division offers a full line of production, pilot, and bench top development systems using a variety of critical separations technologies. These include reverse osmosis, ultrafiltration, microporous filtration, and high performance liquid chromatography.

## For more information

For more information on Kiloprep process chromatography systems, or membrane-based pilot and process systems, contact the Millipore Technical Service Department at 800-225-1380.
In Western States 800-632-2708
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In Toronto 416-678-2161
In Alaska and Hawaii 415-952-9200
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In Puerto Rico 809-747-8444

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Lit. No. SD204 Printed in U.S.A. 2/87
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