



# Laboratory Membrane Filtration Equipment

## Alfa Laval LabStak® M10 and LabUnit M10

The LabStak® M10 is the smallest and most compact of the Alfa Laval cross-flow membrane filtration modules. This versatile module is simple to operate and provides reliable results.

It is available as the LabStak® M10 or as the complete system LabUnit M10. Both versions are ideal tools for educational purposes, for research and development work, quality assurance, and production plant process optimisation. It can be fitted with the whole range of flat sheet membranes for ultrafiltration and microfiltration.

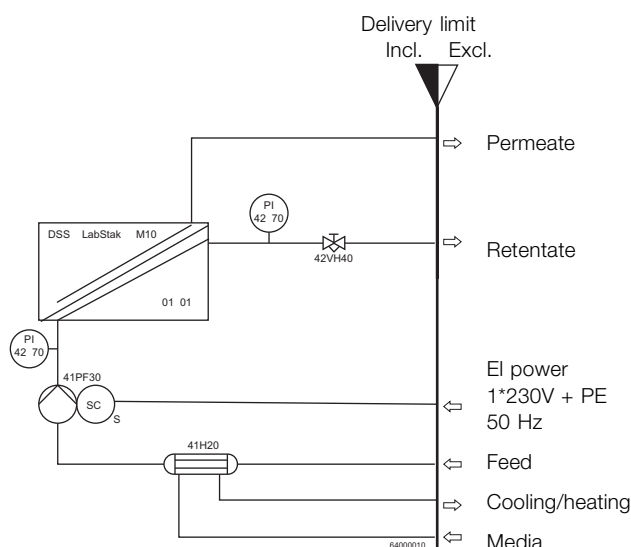
- Membrane area of only 336 cm<sup>2</sup>
- Rapid, easy exchange of membranes
- Transparent plate for observation of cross-flow
- Simultaneous test of two different membrane types
- High operating temperature (80°C)
- Only 57 ml hold-up volume in the LabStak®
- Testing volume of 1 - 3 litres
- Flow pattern similar to that of larger modules
- All components manufactured in compliance with FDA and EEC regulations



### Technical data

|                                |                | LabStak® M10 | LabUnit M10 |
|--------------------------------|----------------|--------------|-------------|
| Membrane area                  | m <sup>2</sup> | 0.036        | 0.036       |
| Max. inlet pressure*           | bar            | 7            | 7           |
| Max. operating temperature*    | °C             | 80           | 80          |
| Operating pH range*            |                | 1-14         | 1-14        |
| Cross-flow range               | l/min.         | 3-10         | 3-10        |
| Hold-up volume                 | ml             | 57           | 500         |
| Number of support plates       |                | 4            | 4           |
| Number of spacer plates        |                | 2/2          | 2/2         |
| Number of flat sheet membranes |                | 4            | 4           |
| Number of permeate outlets     |                | 2            | 2           |

\*Please consult specifications for the applied membrane type for more detailed information on operation conditions



| Components                           | LabStak® M10       | LabUnit M10                      |
|--------------------------------------|--------------------|----------------------------------|
| All external steel parts             | AISI 304           | AISI 304                         |
| Internal, product wetted steel parts | AISI 316L          | AISI 316L                        |
| Support and spacers plate            | Polysulphone (PSO) | Polysulphone (PSO)               |
| Permeate outlet hose                 | Silicone rubber    | Silicone rubber                  |
| O-ring set                           | Viton              | Viton                            |
| Module                               | -                  | LabStak® M10                     |
| Cross-flow pump                      | -                  | Eco 0.37 kW with rpm control     |
| Heat/cooler exchanger                | -                  | Alfa Laval, 0.079 m <sup>2</sup> |
| Valve                                | -                  | Gemü                             |
| Pressure gauges                      | -                  | Tempress                         |

| Connections                  | LabStak® M10                | LabUnit M10                    |
|------------------------------|-----------------------------|--------------------------------|
| Feed inlet                   | 1/4" / 1/2" hose connection | 1/4" / 1/2" hose connection    |
| Retentate outlet             | 1/4" / 1/2" hose connection | 1/4" / 1/2" hose connection    |
| Permeate outlet, hose        | OD 4 , ID 4.7mm             | OD 4 , ID 4.7mm                |
| Cooling/heating water in/out | -                           | ID 6mm hose / 1/4" nipple      |
| Electrical power             | -                           | 1 x 230V, 50 Hz, PE, 3 m cable |

| Dimensions | LabStak® M10       | LabUnit M10        |
|------------|--------------------|--------------------|
| L x W x H  | 200 x 190 x 130 mm | 500 x 380 x 435 mm |
| Weight     | 3 kg               | 30 kg              |

| Order numbers | LabStak® M10 | LabUnit M10 |
|---------------|--------------|-------------|
|               | 516652       | 517551      |

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ESE02462EN 1408

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