

Pall® Membralox® HCB Highly compact modules

A reliable design for industrial
and environmental applications

Description

The **Pall Membralox** HCB module range takes advantage of the unique hexagonal shape of the **Membralox** ceramic membranes to obtain a high membrane packing density up to 285 m²/m³, thus significantly reducing filtration system costs.

Membralox HCB filtration modules provide economical solutions in difficult fluid clarification, effluent reduction and other stream purification applications.

Pall Membralox HCB Modules

- Increased and optimized filtration surface area
- Reduced permeate hold-up volume
- Highly compact design for cost-effective system and smaller foot print
- Proven reliable sealing with PTFE global gasket
- Compatible with a wide range of chemicals
- Perfectly suited for the high robustness of the **Membralox** ceramic membranes
- Long service life

Pall Membralox Membrane Characteristics

- High flux
- Wide chemical and pH (0-14) compatibility
- Excellent thermal stability
- Proven long service life
- Sanitizable
- Ability to withstand high frequency backpulsing cycles
- 100% bubble point integrity tested during manufacture
- Excellent resistance to corrosion
- Customized membrane configurations can also be proposed for the most demanding applications



Applications

- Fermentation broth clarification, molecules extraction, purification and concentration, cell harvesting
- Clarification of glucose syrups and fruit juices, beer recovery
- Degreasing bath regeneration, oily waste treatment and hydrocarbons/water separation
- Treatment of harsh chemicals and solvent recovery
- Waste water treatment with ceramic membrane bioreactor (MBR)

Widest Separation Range

The exceptional structure of **Membralox** filtering elements has enabled the development of the widest range of micro and ultrafiltration ceramic membranes. A complete range of modules allows scale-up from laboratory separations to full size industrial needs.

Cost Effective Solutions

The remarkable physical and chemical stability of **Pall Membralox** membranes allows reproducible performance over a long service life - a key feature in a cost/benefit analysis proven in numerous industrial installations.

Pall Membralox HCB modules

Module Type	No. of Membranes	Membrane Type	Surface area (m ²)	Retentate Connections (RC) Permeate Connections (PC)
M-19P4840	19	EP4840	13.11	RC: Weldable flanges/o-ring gaskets
M-19P3740		EP3740	8.93	PC: Weldable flanges/flat gaskets
M-19P1960		EP1960	6.84	
M-36P4840	36	EP4840	24.84	RC: Weldable flanges/o-ring gaskets
M-36P3740		EP3740	16.81	PC: Weldable flanges/flat gaskets
M-36P1960		EP1960	12.96	
M-60P3730	60	EP3730	21	RC: Weldable flanges/o-ring gaskets
M-60P1940		EP1940	14.40	PC: Weldable flanges/flat gaskets

Operating limits of Membralox modules in liquids filtration¹

Temperature	95°C (203°F)
Pressure	10 bar* (145.03psi)

¹ Any liquids belonging to group II from PED 97/23/EC art 9-§ 2.2

Nominal dimensions (mm)

	a	b	c	d	e
M-36P / M-60P	340	261	1126	417	83.5
M-19P	253	217.5	1126	320	83.5

Pall Membralox ceramic membranes

	EP3730	EP1940	EP3740	EP1960
Channel Diameter (mm)	3	4	4	6
Number of channels	37	19	37	19
Filtration surface area (m ²)	0.35	0.24	0.47	0.36
Length (mm)	1020	1020	1020	1020

The 12 µm pore size Membralox standard membranes support is made up of ultrapure α-alumina.

Pall Membralox IC ceramic membranes

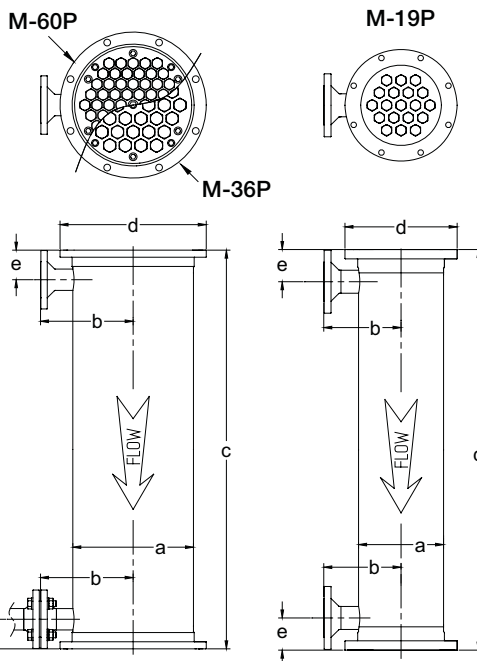
	EP4840
Channel Diameter (mm)	4
Number of channels	48
Filtration surface area (m ²)	0.69
Length (mm)	1020

Membralox membrane pore sizes²

Microfiltration	1.4, 0.8, 0.5, 0.2, 0.1 µm	α-alumina
Ultrafiltration	100, 50, 20 nm	zirconia

² Other pore sizes and surface modifications on request.

Some pore sizes are not available on all support geometries. Please contact Pall for further information.



* 1 bar = 100 kPa

The limits of use of Membralox modules are determined mainly by type of housing or gasket materials. Based on valuable pilot and test data, our Scientific and Laboratory Services can provide advice in selecting the best membrane and module configuration to match your process requirements.



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