



Description

The **Membralox** HCS module range takes advantage of the unique hexagonal shape of the Membralox ceramic membranes to obtain a high membrane packing density, thus significantly reducing filtration system costs.

The Membralox HCS modules perfectly match reliability and cost requirements of the main applications in sanitary industries.

Membralox HCS module range features internal gasketing and assembly designed according to high sanitary standard.

Membralox filtration modules are the corner stone for process reliability.

The 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 help for scale-up from laboratory separations to full size industrial needs.

Cost Effective Separations

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

Applications Examples

- Clarification of fermentation broth
- Sugar and sweetener processing
- Fruit juices clarification
- Milk & whey processing
- Beer tank bottoms recovery



Membralox® HCS Compact Sanitary Modules

A cost effective design for sanitary applications



Membralox HCS Modules

- Highly compact for cost effective system design and small footprint
- All wetted parts fully accessible to cleaning chemicals during CIP (no dead zone)
- Reduced permeate hold up volume
- Proprietary built-in gasketing solution to ensure perfect sealing
- Wide chemical compatibility
- Long service life

Membralox Ceramic Membranes

- High flux
- Proven long operational life
- Excellent resistance to corrosion
- Wide chemical and pH (0-14) compatibility
- Excellent thermal stability
- Sanitizable
- Ability to withstand high frequency backpulsing cycles
- Meet FDA requirements detailed in 21 CFR
- 100% bubble point integrity tested
- Customized membrane configurations can also be proposed for the most demanding applications

Technical Information

Pall Membralox HCS Modules Range

Module Type	Number of membranes	Membrane type	Surface area (m ²)	Retentate Connections (RC) Permeate Connections (PC)
M-36P4840	36	EP4840	24.84	RC: Bolt flanges / Sanitary o-ring seal PC: 2.5" sanitary tri-clamp
M-36P2760		EP2760	18.00	
M-36P3740		EP3740	16.81	
M-36P1960		EP1960	12.96	
M-60P3730	60	EP3730	21.00	
M-60P1940		EP1940	14.40	

Pall Membralox Ceramic Membrane Types

Membrane Type	EP3730	EP1940	EP3740	EP4840	EP1960	EP2760
Channel diameter (mm)	3	4	4	4	6	6
Number of channels	37	19	37	48	19	27
Filtration area (m ²)	0.35	0.24	0.47	0.69	0.36	0.50
Length (mm)	1020	1020	1020	1020	1020	1020

The Membralox membrane **support** (12 µm pore size) and the membrane **end sealing** are made of sintered ultrapure alpha-Alumina.

Pall Membralox Membrane Pore Sizes¹

Microfiltration	1,4* -0,8* -0,5 -0,2 -0,1* µm	alpha-alumina
Ultrafiltration	100* -50 -20 -10 nm	Zirconia

¹ Some pore sizes are not available on all membrane geometries. Please check with your Pall representative for further information.

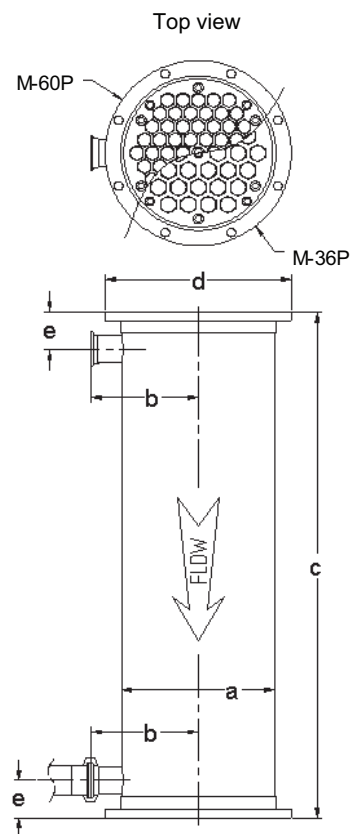
* Available in Membralox GP membrane type. 0,8 and 1,4 µm are available in double layer format.

Accessories and Complementary Services

- Backpulse devices
- Laboratory scale and benchtop pilot units
- Feasibility studies, on-site plant design, commissioning, tests, training courses

The limits of use of **Membralox** modules are determined mainly by the 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.

Membralox HCS Modules View



Nominal Dimensions

Dimensions	a	b	c	d	e
M-36P / M-60P	340	237	1126	417	83.5

Operating Limits in Aqueous Liquids²

Temperature	95 °C
Pressure	10 bar**

² Any liquids belonging to group II from PED 2014/68/EU art. 4-§3

** 1 bar = 100kPa