

# ROMICON® 3" HOLLOW FIBER CARTRIDGES

## 3" Diameter Hollow Fiber Ultrafiltration Cartridges

### PRODUCT DESCRIPTION

**Membrane Polymer:** Polysulfone  
**Housing Construction:** Polysulfone  
**Seal/Potting Material:** Proprietary Epoxy Compound  
**Storage Solution:** Glycerin  
**Options:**  
**Lumen size:** 20 mil (0.5 mm), 43 mil (1.1 mm), 60 mil (1.5 mm), 75 mil (1.9 mm), 106 mil (2.7 mm)  
**Membrane Type:** PM5, PM10, PM30, PM50, PM100, or PM500  
**Special Construction for Specific Applications:**  
**Vinegar Filtration:** Selected PM50 and PM500 cartridges are available for vinegar filtration.  
**Citrus Filtration:** Selected PM10, PM50 and PM500 cartridges are available for citrus filtration.  
**ROMIPRO™ Cartridges:** Selected cartridges of all membrane types are available with components that have passed USP Class VI test guidelines.

### CARTRIDGE AVAILABILITY AND MEMBRANE AREA

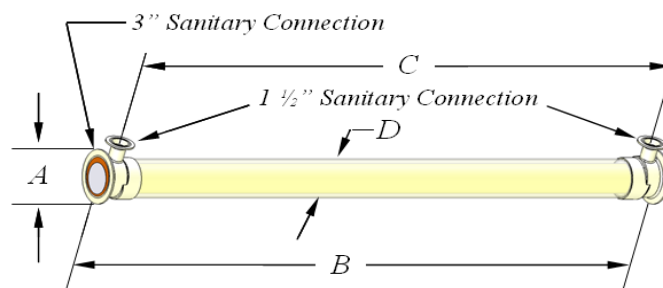
Membrane Type	MWCO (Dalton) or Pore size (µm)	Fiber Diameter [mil (mm)]				
		20 (0.5)	43 (1.1)	60 (1.5)	75 (1.9)	106 (2.7)
PM5	5,000		•			
PM10	10,000	•	•	•		
PM30	30,000		•			
PM50	50,000		•	•	•	
PM100	100,000	•	•			
PM500	500,000		•		•	•
<b>Membrane Area [ft<sup>2</sup> (m<sup>2</sup>)]</b>		<b>53 (4.9)</b>	<b>25 (2.3)</b>	<b>25 (2.3)</b>	<b>21 (1.9)</b>	<b>16 (1.5)</b>

### OPERATING AND DESIGN INFORMATION\*

**Maximum Inlet Pressure:** 40 psi (2.8 bar)  
**Maximum Transmembrane Pressure:** 35 psi (2.4 bar)  
**Maximum Operating Temperature (at pH 6.0):** 140°F (60°C)  
**Maximum Permeate Side Back Pressure:** 20 psi (1.4 bar)  
**Maximum Differential Pressure Feed Side:** 30 psi (2.1 bar)  
**Allowable pH:** 1.5 – 13.0 @ 130°F (54°C)  
**Maximum Total Chlorine (During Cleaning):** 200 ppm @ pH 10-10.5, 130°F (54°C), 0 ppm @ pH < 9.5

\* Consult KMS Process Technology Group for specific applications.

### NOMINAL DIMENSIONS



Model	A inches (mm)	B inches (mm)	C inches (mm)	D inches (mm)	Permeate Connection	Process Connection
3043	4.0 (102)	43 (1092)	40 <sup>15/16</sup> (1040)	3 (76)	1 1/2" T/C	3" T/C

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## Membrane Characteristics

- Koch Membrane Systems (KMS) ROMICON® cartridges should be selected for filtration of process streams when the separation range is in the range of 5000 to 500,000 dalton. They provide stable productivity, ease of cleaning and reliable operation.
- ROMICON cartridges should be selected for filtration of liquids based on the separation range needed. They provide stable productivity, ease of cleaning and reliable operation. KMS ROMICON cartridges are crossflow-type filters, in which the feed solution is pumped across the cartridge to minimize solids cake buildup on the membrane. Crossflow filters provide efficient filtration at low operating pressure, allowing long process runs while reducing cleaning time, cleaning frequency, and labor costs.

## Product Nomenclature

Field: 

HF	Vinegar	50	43	40	106	PM	500
1	2	3	4	5	6	7	

Field 1: HF – Hollow fiber cartridge

Field 2 (optional field): Market or application designation

Field 3: Cartridge diameter times 10 in inches

Field 4: Cartridge length in inches

Field 5: Active membrane area in ft<sup>2</sup>

Field 6: Fiber diameter in mils (1000 mil = 1 inch)

Field 7: Molecular Weight Cutoff divided by 1000 in Daltons

The example shown above describes a 5-inch diameter by 43-inch long hollow fiber cartridge for vinegar filtration, utilizing fibers with diameter of 106 mil and 500,000 Dalton. The active membrane area of this cartridge is 40 ft<sup>2</sup>.

## Operating Limits

- **Operating Pressure:** Maximum operating pressure for a ROMICON® cartridge is 40 psi (2.8 bar) or 100 psi (if permeate side is pressurized). Actual operating pressure is dependent upon type of feed stream, recovery and temperature conditions.
- **Permeate Pressure:** Permeate pressure should not exceed 20 psi (1.4 bar) pressure at any time, including backflush.
- **Differential Pressure:** Maximum differential pressure limit is 30 psi (2.1 bar) per cartridge.
- **Temperature:** Maximum operating temperature is 140°F (60°C) and maximum cleaning temperature is 130°F (54°C).

## Water Quality for Cleaning

- **pH:** Allowable range for cleaning is 1.5 to 13.0.
- **Guidelines:** Please refer to the "KMS Water Quality Guidelines" for more detailed information

## Exposure to Chemical Oxidants

While not recommended for use on a daily basis, exposure to chemical oxidants for thorough cleaning and sanitization may prove necessary and useful.

Potassium metabisulfite (without catalyst such as cobalt) is the preferred chemical to eliminate residual chlorine or similar oxidizers prior to processing process liquid.

## Lubricants

For cartridge installation, use only water or glycerin to lubricate seals. The use of petroleum or vegetable-based oils or solvents may damage the cartridge and will void the warranty

## Service and Ongoing Technical Support

Koch Membrane Systems, Inc. has an experienced staff of professionals available to assist end-users and OEMs for optimization of existing systems and support the development of new applications. Along with the availability of supplemental technical bulletins, Koch Membrane Systems, Inc. also offers a complete line of KOCHKLEEN® cleaning chemicals.

## KMS Capability

KMS is the leader in crossflow membrane technology, manufacturing reverse osmosis, nanofiltration, microfiltration, and ultrafiltration membranes and membrane systems. The industries served include food, dairy and beverage, pharmaceutical, biotechnology, water and wastewater, semiconductors, automotive, chemical and general manufacturing. KMS adds value by providing top quality membrane products and by sharing its experience in the design and supply of thousands of crossflow membrane systems worldwide.

*The information contained in this publication is believed to be accurate and reliable, but is not to be construed as implying any warranty or guarantee of performance. We assume no responsibility, obligation or liability for results obtained or damages incurred through the application of the information contained herein. Refer to Standard Terms and Conditions of Sale and Performance Warranty documentation for additional information.*

**LENNTECH**

info@lennotech.com Tel. +31-152-610-900

www.lennotech.com Fax. +31-152-616-289