HFK-131 UF 4” AND 8” ELEMENTS

Low Pressure Ultrafiltration Spiral Wound Elements for Water Treatment

PRODUCT DESCRIPTION

Membrane Chemistry:	Proprietary semi-permeable polyethersulfone (PES) on a polyester backing material
Membrane Type:	HFK-131
Molecular Weight Cutoff:	10,000 Daltons
Construction:	Spiral-wound with fiberglass outerwrap
Applications:	Low pressure, ultrafiltration, where chlorine tolerant membranes can be used for potable water production, RO pretreatment, and wastewater pretreatment.

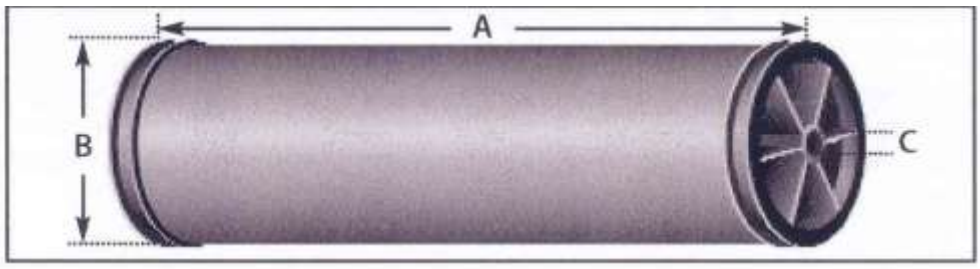
SPECIFICATIONS

Part Numbers	Model	Membrane Area ft²	Membrane Area (m²)
8432100	4040-K131	81	(7.5)
8832300	8040-K131	340	(31.6)

OPERATING & DESIGN INFORMATION

Typical operating pressure:	30-150 psi (207 – 1,035 kPa)
Maximum operating pressure:	150 psi (1,035 kPa)
Maximum operating temperature:	122°F (50°C)
Maximum cleaning temperature:	122°F (50°C)
Maximum continuous free chlorine:	2 mg/l
Allowable pH – continuous operation:	2 – 10
Allowable pH – short term cleaning:	2 – 11.5
Maximum differential pressure per element:	10 psi (69 kPa)
Maximum differential pressure per vessel:	60 psi (414 kPa)
Maximum feed turbidity:	1 NTU
Maximum feed SDI (15 minute):	5
Feed spacer thickness:	31 mil (0.8 mm)

NOMINAL DIMENSIONS



Model	A inches (mm)	B inches (mm)	C inches (mm)	Weight lbs (kg)	Part Numbers Interconnector	O-ring	Brine Seal
4040-K131	40 (1,016)	4 (101.6)	0.625 (15.9)	10 (4.5)	0035262	0035468	0035702
8040-K131	40 (1,016)	8 (203.2)	1.125 (29)	44 (20)	0035260	0035464	0030584

Performance:

- The membrane used in these modules consists of a semipermeable polyethersulfone (PES) layer on a polyester backing material.
- Pure water flux of these PES HFK-131 membranes is 1.0-2.2 gfd/psi (24-53 l/m^2/h/bar) at 77°F (25°C).

Operating Limits:

- **Operating Pressure:** Maximum operating pressure is 150 psi (1,035 kPa). Typical operating pressure for PES-UF systems is in the range of 50 psi (345 kPa) to 150 psi (1,035 kPa). Actual operating pressure is dependent upon system flux rate (appropriate for feed source) as well as feed salinity, recovery and temperature conditions.
- **Permeate Pressure:** Permeate pressure should not exceed feed-concentrate pressure by more than 5 psi (34 kPa) at any time (on-line, off-line and during transition).
- **Differential Pressure:** Maximum differential pressure is 10 psi (69 kPa). Maximum differential pressure for any length pressure vessel is 60 psi (414 kPa).
- **Temperature**: Maximum operating temperature is 122°F (50°C). Maximum cleaning temperature is 122°F (50°C).
- **pH:** Allowable range for continuous operation is pH 2-10. Allowable range for short term cleaning is pH 2-11.5.
- **Turbidity and SDI:** Maximum feed turbidity is 1 NTU. Maximum feed Silt Density Index (SDI) is 5.0 (15 minute test). Experience has shown that feedwater with turbidity greater than 0.2 NTU generally results in frequent cleanings.
- **Recovery:** Maximum recovery is site and application specific. In general, single element recovery is approximately 15%.

Chemical Tolerance:

Up to 2 mg/l continuous. Conditions for sanitizing with chlorine: up to 50 mg/l at 50°C (122°F), pH 10.5. Iron or other catalyzing metals in the presence of free chlorine or hydrogen peroxide will accelerate membrane degradation.

Additional Operating and Design Information:

Operational and cleaning limits for temperature, pressure and pH must be observed to maintain element performance warranty. Permeate pressure must not exceed feed or concentrate pressure at any time during operation, including start-up, shutdown and CIP. An average system design flux is in the range of 20-25 gfd (34-42.5 l/m^{2}h). For operation outside these guidelines, please contact KMS.

Lubricants:

For element loading, use only the recommended silicone lubricant (or approved equivalent), water or glycerin to lubricate O-rings and brine seals. The use of petroleum based lubricants or vegetable based oils may damage the element and void the warranty.

Service and Ongoing Technical Support:

KMS has an experienced staff of professionals available to assist end users and OEM’s for optimization of existing systems and support with the development of new applications. Along with the availability of supplemental technical bulletins, KMS also offers a complete line of KOCHTREAT™ and KOCHKLEEN™ RO pretreatment and maintenance chemicals.

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.

Koch Membrane Systems, Inc., www.kochmembrane.com

Corporate Headquarters: 850 Main Street, Wilmington, Massachusetts 01887-3388, US, Tel. Toll Free: 1-888-677-5624, Telephone: 1-978-694-7000, Fax: 1-978-657-5208
European Headquarters: Koch Chemical Technology Group Ltd., Units 3-6, Frank Foley Way, Stafford ST16 2ST, GB, Telephone: +44-178-527-2500, Fax: +44-178-522-3149

• Aachen DE • Lyon FR • Madrid ES • Milan IT • Wijnegem BE • Beijing & Shanghai CN • Mumbai & Chennai IN • Melbourne & Sydney AU • SG • Sao Paulo BR • Manama BH •

The FLOW LINES DESIGN, KOCHKLEEN and KOCHTREAT are trademarks of Koch Membrane Systems, Inc.
The STYLIZED K is a trademark of Koch Industries, Inc.
Koch Membrane Systems, Inc. is a Koch Chemical Technology Group, LLC company.
© 2013 Koch Membrane Systems, Inc. All rights reserved worldwide.

1/13 Rev 13-1