CeraMem® Industrial Systems

TECHNICAL DATA SHEET

CeraMem®

ALSYS Group

Standard Systems Offer Cost Savings

CeraMem® Skidded Systems offer robust and reliable performance for a wide range of light to heavy industrial applications. Our systems are designed to operate with our full range of membrane materials, which include silicon carbide, titanium oxide, silica and alumina. Membranes are available with either 2 mm or 5 mm square channels, and have pore sizes of 5, 10, and 50 nm, or 0.1 and 0.2 µm.

CeraMem skidded systems come complete as a pre-engineered, expandable package designed with a variety of standard features not normally found in competitive systems. CeraMem systems have a compact footprint and are ideal for difficult industrial wastewater and product filtration applications where a high permeate or product quality is required.

Markets	Applications	
Metalworking & Mining	• Plating and metal finishing • Alkaline cleaner recovery	• Metal precipitation and removal • Mining tailings pond recycle
Industrial Laundries	• Wastewater treatment and recovery	• Whites or heavy laundry
Product Filtration & Recovery	• Chlor-Alkali brine • Hot brine solutions	• Specialty chemicals • Polymer concentration
Oil & Gas	• Produced water • Desalter brine	• Slop oil recovery • Spent caustic recovery
General Industry	• High-fouling, oily wastewater • Pretreatment for reverse osmosis	• Abrasive fines removal (wafer saw, catalysts)

What Makes CeraMem Systems Unique?

- → Flexible capacity ranges from 40 gpm to over 280 gpm
- → Modular design allows for 8, 12, 16 and 20-modules
- → Plug and play skid is supplied with membranes, housings, CIP & CEB tanks, CIP mixer, pumps, and basket strainer
- → Vertical modules reduce footprint and drain efficiently
- → All 316 Stainless steel wetted construction
- → Option available with CPVC wetted construction
- → Welded, heavy duty, epoxy coated carbon steel frame
- → Fully automated integrated controller enables easy operation
- → Touch screen HMI
- → Built-in expandability facilitates integration of pre and post unit operations (e.g., Reaction Tank, RO, Sludge Treatment)
- → Automatic Backpulsing (BP) and Chemically Enhanced Backwashing (CEB) maximizes throughputs and extends time between cleanings
- → Operator-initiated fully automated CIP cleaning cycle for full flow recovery
- → Optional reverse flow feature allows for periodic debris removal

CeraMem membranes offer high performance in harsh applications and environments where polymeric membranes cannot be applied:

- Operating temperatures up to 100°C
- pH range of 0 – 14
- Oil & Grease and solids levels from 0 to >50,000 ppm
- Extreme oxidizing conditions
- Chemically aggressive fluids
- Solvents

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WATER & MEMBRANES

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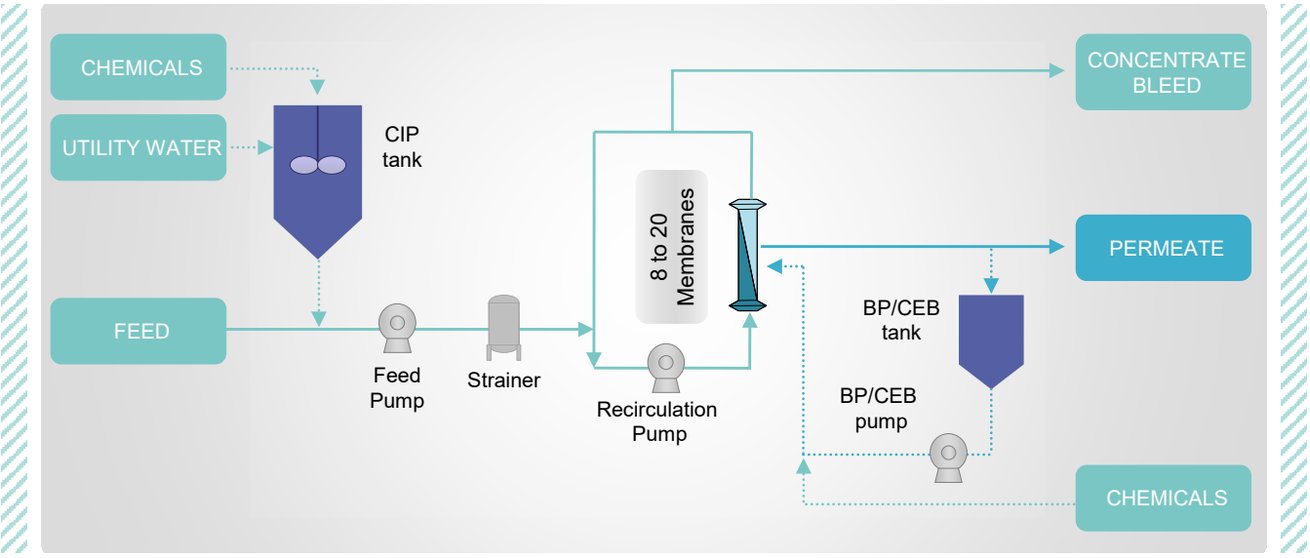

System Performance & Capacity

Model	LIS-8	LIS-12	LIS-16	LIS-20
Number of Elements	8	12	16	20
Membrane Area (m^2), 2-mm/5-mm	84/40	126/60	168/80	210/100
Operating TMP (psi)	0 to 40	0 to 40	0 to 40	0 to 40
Nominal Capacity (gpm at 50 – 120°F)	39 - 93	58-140	78 – 186	97 – 233
Nominal Capacity (gpm at 120 – 210°F)	93 - 113	140-170	186 - 226	233 – 283
System Recovery	Up to 99% depending upon solids loading and application			

Motor Information

(All pumps are Grundfos CRN Vertical or comparable)

Model	LIS-8	LIS-12	LIS-16	LIS-20
Number of Recirculation Pumps	1	1	2	2
Recirculation Pump HP[1]	30	60	30/30	50/50
CIP/Feed Pump HP	3-10	7.5-15	7.5-30	10-25
Backpulse Pump HP	5-10	5-15	7.5-20	7.5-20
¼ HP CIP Tank Agitator				

1 Design based on 3 m/s velocity. Lower velocity may be achievable, which would reduce the Recirculation pump HP

Mechanical Information

Tank Volumes & Materials	
CIP Tank Volume[2]	250 gal
BP/CEB Tank Volume[2]	150 gal
Material[2]	HDPE
Utility Information	
Power Requirements	125 amps 460V/3Ph/60 Hz
Control	120V/1Ph/60Hz
Instrument Air	>75 psi, oil-free, 1” flange
Feed Connection	4” flange
Permeate Connection	3” flange
Concentrate Connection	2” flange
Waste Connection	3” flange
Utility Water Connection (25 psig min/100 - 140°F)	1.5” flange
Dimensions & Weight	
Skid Height	124 – 136 in
Skid Width[3]	122 in
Skid Length[3]	144 in
Shipping Weight	12,000 lbs

2 Actual tank size and material subject to change based on system capacity, project specifications and cleaning requirements
3 Actual dimensions may vary depending on material of construction and number of membranes

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