Industrial RO HP Series

FACT SHEET

Industrial Ultra-High-Pressure Water RO Elements

The Industrial RO HP reverse osmosis elements feature a A-Series proprietary thin-film membrane to ensure high salt retention.

The Industrial RO5 & RO7 HP are ultra-high-pressure elements that can operate up to 100 bar dues to a special element and membrane design. These elements are typically used on industrial brines in order to achieve very high salt concentrations in the retentate and improve the overall efficiency of Zero Liquid Discharge (ZLD) or Minimal Liquid Discharge (MLD) systems because the evaporator and crystallizer are processing a smaller flow rate. These elements are also recommended for the recovery of salts in various industrial process or waste streams.

These elements feature a 35mil spacer in an ultra-high pressure compatible element assembly.

Table 1: Element Specification

Membrane	A-Series, Thin-film membrane (TFM)

Model	Average permeate flow gpd (m^3/day) (1,2)	Average NaCl rejection (1,2)	Minimum NaCl rejection (1,2)
INDUSTRIAL RO5 HP 4040F35	2,200 (8.3)	99.5%	99.0%
INDUSTRIAL RO5 HP 8040F35	9,200 (34.8)	99.5%	99.0%
INDUSTRIAL RO7 HP 4040F35	2,200 (8.3)	92.0%	90.0%
INDUSTRIAL RO7 HP 8040F35	9,200 (34.8)	92.0%	90.0%

(1) Average salt rejection after 24h operation. Individual flow rate may vary ±25%.
(2) Testing conditions:
INDUSTRIAL RO5: 2,000 ppm NaCl solution at 225psi (1,550kPa) operating pressure, 77°F, pH 7.5 and 15% recovery.
INDUSTRIAL RO7: 500 ppm NaCl solution at 75psi (520kPa), operating pressure, 77°F, pH 7.5 and 15% recovery.

Table 2: Element Properties (3)

Model	Spacer mil (mm)	Active area ft^2 (m^2)	Outer wrap	Part number
INDUSTRIAL RO5 HP 4040F35	35 (0.89)	75 (7.0)	Fiberglass	3154755
INDUSTRIAL RO5 HP 8040F35	35 (0.89)	330 (30.7)	Fiberglass	3153541
INDUSTRIAL RO7 HP 4040F35	35 (0.89)	75 (7.0)	Fiberglass	3169019
INDUSTRIAL RO7 HP 8040F35	35 (0.89)	330 (30.7)	Fiberglass	3169018

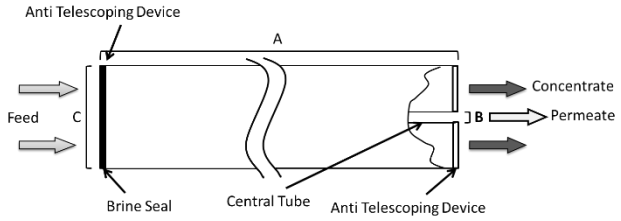

Figure 1: Element Dimensions Diagram – Female

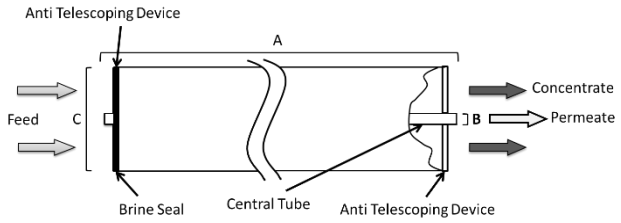

Figure 2: Element Dimensions Diagram - Male

Table 3: Dimensions and Weight (3)

Model	Type	Dimensions, inches (cm)			Boxed Weight lbs. (kg)
		A	B	C	
4040F	Male	40.0 (101.6)	0.75 (1.90)	3.9 (9.9)	11 (5)
8040F	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	35 (16)

Table 4: Operating and CIP Parameters (3)

Typical Operating Flux	5 - 20 GFD (8 – 34 LMH)
Maximum Operating Pressure	See Table 5
Maximum Temperature	Continuous operation: 122°F (50°C) Clean-In-Place (CIP): 122°F (50°C)
pH Range	Optimum rejection: 7.0 – 7.5 Continuous operation: 2.0 - 11.0 Clean-In-Place (CIP): 1.0 - 13.0 (4)
Maximum Pressure Drop	Over an element: 15psi (103kPa) Per housing: 60psi (414kPa)
Chlorine Tolerance	500+ ppm hours, dechlorination recommended
Feedwater	NTU < 1 SDI_{15} < 5

(3) Element properties and parameters are indicative numbers. Specific values by element may vary within normal element manufacturing tolerances.
(4) Please refer to Cleaning Guidelines Technical Bulletin TB1194.

Table 5: Maximum Operating Pressure

Temperature	Maximum Operating Pressure
< 95°F (35°C)	1,500psi (10,342kPa)
< 104°F (40°C)	1,000psi (6,897kPa)
< 113°F (45°C)	700psi (4828kPa)
< 122°F (50°C)	600psi (4,137kPa)

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