

Water Technologies & Solutions fact sheet

industrial RO HP series

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 RO HP R05/R06 are ultra-high-pressure elements that can operate up to 100 bar due 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 R05 HP 4040F35	2,200 (8.3)	99.5%	99.0%
INDUSTRIAL R05 HP 8040F35	9,200 (34.8)	99.5%	99.0%
INDUSTRIAL R06 HP 4040F35	2,200 (8.3)	99.0%	98.0%
INDUSTRIAL R06 HP 8040F35	9,200 (34.8)	99.0%	98.0%

¹ Average salt rejection after 24h operation. Individual flow rate may vary ±25%.

² Testing conditions:

INDUSTRIAL R05: 2,000 ppm NaCl solution at 225psi (1,550kPa) operating pressure, 77°F, pH 7.5 and 15% recovery.

INDUSTRIAL R06: 500 ppm NaCl solution at 115psi (793kPa), operating pressure, 77°F, pH 7.5 and 15% recovery.

Model	Spacer mil (mm)	Active area ft ² (m ²)	Outer wrap	Part number
INDUSTRIAL R05 HP 4040F35	35 (0.89)	75 (7.0)	Fiberglass	3154755
INDUSTRIAL R05 HP 8040F35	35 (0.89)	330 (30.7)	Fiberglass	3153541
INDUSTRIAL R06 HP 4040F35	35 (0.89)	75 (7.0)	Fiberglass	3154756
INDUSTRIAL R06 HP 8040F35	35 (0.89)	330 (30.7)	Fiberglass	3153542

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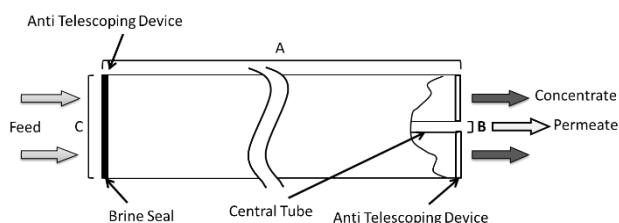


Figure 1a: Element Dimensions Diagram (Female) – 8040

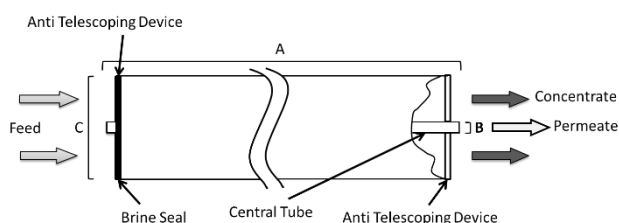


Figure 1b: Element Dimensions Diagram (Male) – 4040

Table 2: Operating and CIP Parameters

Typical Operating Flux	5 - 20 GFD (8 – 34 LMH)
Maximum Operating Pressure	See Table 3
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 - 10.0, Clean-In-Place (CIP): 1.0 - 13.0 ¹
Maximum Pressure Drop	Over an element: 15psi (103kPa) Per housing: 60psi (414kPa)
Chlorine Tolerance	500+ ppm hours, dechlorination recommended
Feedwater²	NTU < 1 SDI < 5

¹Please refer to Cleaning Guidelines Technical Bulletin TB1194.

² SDI is measured on a non-linear scale using a 0.45-micron filter paper. Additionally, finer colloids, particulates and microorganisms that pass through the filter paper and not measured in the SDI test, will potentially foul the RO element. For performance consistency and project warranty, please use Winflows projection software and consult your SUEZ representative.

Table 3: Maximum Operating Pressure

Temperature	Maximum Operating Pressure
< 77°F (25°C)	1,500psi (10,342kPa)
< 86°F (30°C)	1,320psi (9,101kPa)
< 95°F (35°C)	1,140psi (7,860kPa)
< 104°F (40°C)	960psi (6,619kPa)
< 113°F (45°C)	780psi (5,378kPa)
< 122°F (50°C)	600psi (4,137kPa)

Table 4: Dimensions and Weight

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)

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