



SPIRA-CEL® OY Industry

NP Series

SPIRA-CEL® OY modules have an outstandingly high stability against temperature and pH. They may be used to clean acid solutions and may be used in biotechnological applications where extreme cleaning conditions are required. NADIR® NP polyethersulfone (PES) membranes exhibit nanofiltration properties after a high-pressure (40 bar) stabilization, offering unique separation properties for process applications.

Membrane Characteristics

Membrane	Nominal M.W.C.O. (Da)	Na ₂ SO ₄ Salt Rejection (%) ^a
NADIR® NP010	1,000 – 1,200	35 – 75
NADIR® NP030	500 – 600	80 - 95

Maximum Operating Pressure.....	40 bar (580 psi)
Maximum Operating Temperature.....	80°C (167°F)
Operating pH Range.....	0.0 – 12.0
Cleaning pH Range ¹	0.0 – 12.0
Maximum Pressure Drop	2 bar (29.0 psi) @ 5 – 50°C per element
	1.3 bar (18.9 psi) @ 50 – 65°C per element
	0.5 bar (7.3 psi) @ 65 – 80°C per element
	2 bar (29.0 psi) @ 80°C per housing

¹ Refer to temperature and pH limits in *Membrane Cleaning Guide – Water Application Elements (TSG-C001)*.

Design Information

MICRODYN-NADIR has the versatility to customize elements to meet customers' specific needs. Please contact MICRODYN-NADIR for information on customized solutions.

Model	Membrane Area m ² (ft ²)	Feed Spacer Thickness (mil) ^a
SPIRA-CEL® OY NP010 2440C	1.8 (19)	46
SPIRA-CEL® OY NP010 2440D	1.8 (19)	46
SPIRA-CEL® OY NP010 4040C	6.0 (65)	46
SPIRA-CEL® OY NP010 4040D	6.0 (65)	46
SPIRA-CEL® OY NP010 8040C	25.0 (269)	46
SPIRA-CEL® OY NP010 8040D	25.0 (269)	46
SPIRA-CEL® OY NP030 2440C	1.8 (19)	46
SPIRA-CEL® OY NP030 2440D	1.8 (19)	46
SPIRA-CEL® OY NP030 4040C	6.0 (65)	46
SPIRA-CEL® OY NP030 4040D	6.0 (65)	46
SPIRA-CEL® OY NP030 8040C	25.0 (269)	46
SPIRA-CEL® OY NP030 8040D	25.0 (269)	46

^a All models on this sheet have fiberglass outer wrap and ATDs attached. Models ending in "D" have parallel feed spacers; all other models have diamond shaped feed spacers.



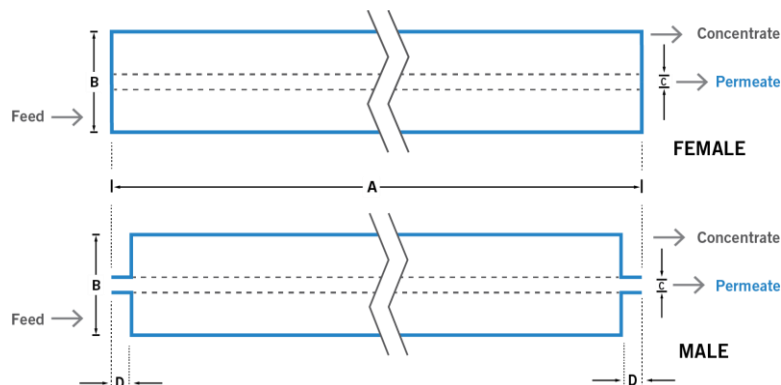
Physical Dimensions

Model	Element Weight kg (lbs) ^b	Dimensions, mm (inches)			Permeate Tube ^d
		A	B	C ^c	
SPIRA-CEL [®] OY NP010 2440C	3 (7)	1,016 (40.0)	62.0 (2.44)	19.05 (0.75)	Male
SPIRA-CEL [®] OY NP010 2440D	3 (7)	1,016 (40.0)	62.0 (2.44)	19.05 (0.75)	Male
SPIRA-CEL [®] OY NP010 4040C	4 (9)	1,016 (40.0)	101.5 (4.0)	16.0 (0.63)	Female
SPIRA-CEL [®] OY NP010 4040D	4 (9)	1,016 (40.0)	101.5 (4.0)	16.0 (0.63)	Female
SPIRA-CEL [®] OY NP010 8040C	16 (36)	1,016 (40.0)	200.5 (7.9)	30.15 (1.187)	Female
SPIRA-CEL [®] OY NP010 8040D	16 (36)	1,016 (40.0)	200.5 (7.9)	30.15 (1.187)	Female
SPIRA-CEL [®] OY NP030 2440C	3 (7)	1,016 (40.0)	62.0 (2.44)	19.05 (0.75)	Male
SPIRA-CEL [®] OY NP030 2440D	3 (7)	1,016 (40.0)	62.0 (2.44)	19.05 (0.75)	Male
SPIRA-CEL [®] OY NP030 4040C	4 (9)	1,016 (40.0)	101.5 (4.0)	16.0 (0.63)	Female
SPIRA-CEL [®] OY NP030 4040D	4 (9)	1,016 (40.0)	101.5 (4.0)	16.0 (0.63)	Female
SPIRA-CEL [®] OY NP030 8040C	16 (36)	1,016 (40.0)	200.5 (7.9)	30.15 (1.187)	Female
SPIRA-CEL [®] OY NP030 8040D	16 (36)	1,016 (40.0)	200.5 (7.9)	30.15 (1.187)	Female

^b Shipping weight is dependent on packaging material and quantity shipped.

^c Diameters for Dimension "C" are as follows. For Female elements, "C" is the Inner Diameter. For Male elements, "C" is the Outer Diameter.

^d Male elements have a protruding permeate tube, indicated as "D" in the diagram. Dimension "D" is 25.4 mm (1.0 in).



Important Information

- Start-up:** MICRODYN-NADIR recommends flushing elements for 30 minutes at low pressure and discarding permeate during the flush prior to operation. For a more detailed start-up procedure, please see *Element Start-Up Guide – System Start-Up* (TSG-O-005).
- Cleaning:** SPIRA-CEL[®] membrane elements must be cleaned periodically to ensure proper operation and to prevent membrane damage. Please see *Membrane Cleaning Guide – Water Application Elements* (TSG-C001).
- Storage:** SPIRA-CEL membrane elements must be stored appropriately to ensure proper operation and to prevent membrane damage. Please see *Element Storage Guides* (TSG-O-009 & TSG-O-010).

Customizable Specialty Elements

MICRODYN-NADIR offers a full range of membranes and element designs for challenging water and process applications. Technologies include low-fouling RO, submerged UF, continuous high temperature, ultra-high pressure, unique sanitary designs and more. Contact MICRODYN-NADIR to customize a product that satisfies your specific requirements.

Solving Unmet Needs with Customized Products



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