UNISOL Food & Dairy NF Elements

Sanitary High temperature NF Spiral Wound Elements

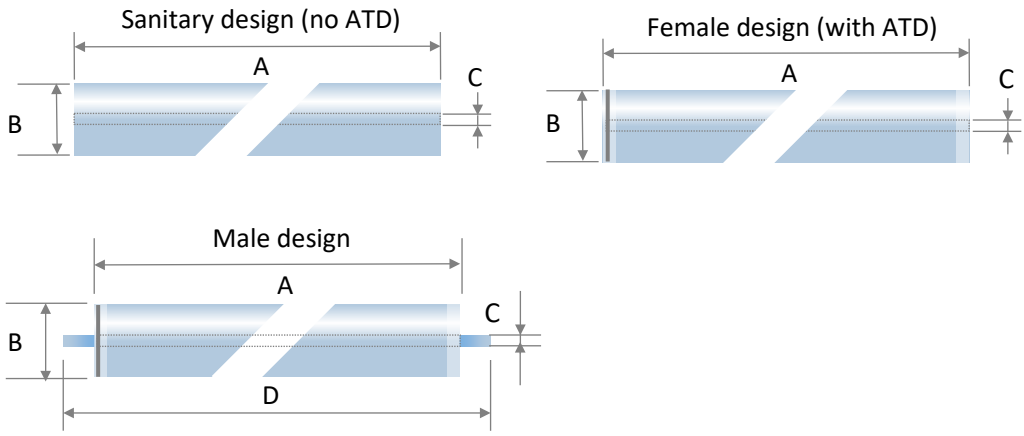
SH NFDK Series

Description	UNISOL sanitary nanofiltration (NF) membrane elements are used by food and dairy processors for a variety of desalting, purification and other separations. All NFDK elements contain an improved nanofiltration membrane sheet designed to reject organics with a MWCO more than 300 Daltons while passing monovalent salts. The SH Series are designed with temperature resistance up to 80°C (176 °F).			
Characteristics	Membrane	NFDK		
	Material	Polypiperazine		
	Outer wrap	Net wrap		
	Regulatory Status	Compliant with US FDA CFR Title 21, EC Reg. No. 1935/2004, and EU Reg. No. 10/2011. Halal certificate by by the Islamic Food and Nutrition Council of America (IFANCA). Kosher certificate by Committee of Kashrut.		
Limits	Max Operating Pressure	32.2 bar (470 psi) at 60°C (140°F) 27.6 bar (400 psi) at 70°C (158°F) 24.1 bar (350 psi) at 80°C (176°F)		
	Max Pressure Drop	0.5-1 bar (7.3 – 14.5psi) per element @30°C (86°F) 0.3 bar (5 psi) per element @70°C (158°F)		
	Max. Operating Temperature	80 °C (176 °F)		
	Operating pH Range	2 – 10		
	Cleaning pH Range	1.8 – 11		
	Free Chlorine Tolerance	Non-detectable		

Area ft^2 (m^2)	Spacer	31 mil Diamond (B)	46 mil Diamond (C)	47mil Parallel (D)
	2540	24 (2.2)	19 (1.8)	/
	3838	75 (7.0)	58 (5.4)	58 (5.4)
	3840	81 (7.5)	62 (5.8)	62 (5.8)
	4038	81 (7.5)	62 (5.8)	62 (5.8)
	4040	85 (7.9)	68 (6.3)	68 (6.3)
	6338	226 (21)	172 (16)	172 (16)
	8038	344 (32)	290 (27)	290 (27)

(1) For the purpose of improvement, specifications may be updated periodically
(2) Consult UNISOL Membrane Technology when intend to operate at elevated pressure, temperature, concentrations.
(3) For the product name, please refer to the annex in the last page.

Dimensions



Size mm (inch)	A[1]	⌀B[2]	⌀C[3]	D	Permeate tube
2540	965 (38)	62 (2.4)	19 (0.748)	1016 (40)	Male
3838	965 (38)	96 (3.8)	21 (0.827)	/	Female
3840	984 (38.8)	96 (3.8)	21 (0.827)	/	Female
4038	965 (38)	99.4 (3.9)	21 (0.827)	/	Female
4040	965 (38)	99.4 (3.9)	19 (0.748)	1016 (40)	Male
6338	965 (38)	160 (6.3)	28.9 (1.138)	/	Female
8038	965 (38)	200.5 (7.9)	28.9 (1.138)	/	Female
8040	1016 (40)	200.5 (7.9)	28.9 (1.138)	/	Female

[1] Tolerance: -2~0mm
[2] Tolerance: -2~0mm
[3] 2540/3840/4040-M tolerance: 0~+0.1mm. 3838/4038 tolerance: ±0.1mm. 6338/8038/8040 tolerance: -0.2~0mm

Handling

Water quality for cleaning and diafiltration. Maximum feed turbidity is 1NTU. Maximum feed SDI is 5.0 (15minutes test).

Operation. Stated operational conditions are valid and the rules for installation, cleaning, water and preservation have to be adhered. UNISOL approved cleaning detergent, anti-foam, polymers, other chemicals and filter-aids lubricants can be applied only. For further questions, do not hesitate to contact our service engineer.
Lubricants. During installation, use only water or glycerin to lubricate seals. The use of petroleum or vegetable-based oils or solvents may damage the element and void any warranty.

Preservation and Storage. Plan ahead to use new membranes. The element should be stored in a sealed bag, at 4 – 30 °C (39 – 86 °F). Storage solutions should be made with: 1 % w/w sodium metabisulfite.

Chemical Exposure. Residual chlorine concentration during CIP would be < 0.1ppm
Cleaning. UNISOL modules may be put into production after having gone through the first cleaning prescribed by UNISOL on product packing notes or given differently by UNISOL.

Annex

Nomenclature: SH-NFDK–8038-B

SH	NFDK	8038	B
Design/Application	Membrane	Diameter & Length	Feed spacer
SH Sanitary Design (High Temperature)	**NFDK**	2540 3838 3840 4338 6338 6438 **8038**	**B: 31mil /0.8mm (diamond)** C: 46mil/1.1mm (diamond) E: 65mil /1.6mm (diamond) F: 80mil /2.0mm (diamond)