

PolyCera[®] Titan 70 Ultrafiltration High Solids Spiral Monolith[®] Element Specifications

Performance & Operating Parameters

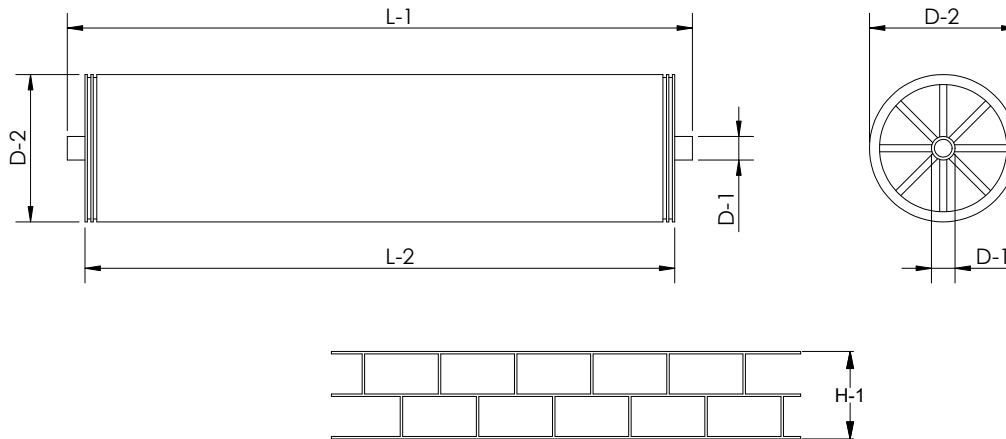
Membrane Material:	PolyCera Titan
Nominal Pore Size/MWCO:	5 nm/70 kDa
Operating pH Ranges:	1.0 – 10.0 @ T ≤ 70°C (158°F), 1.0 – 13.5 @ T ≤ 50°C (122°F)
Operating Temperature Ranges:	5°C – 70°C (41°F – 158°F)
Maximum Inlet Pressure:	8.3 bar (120 psi)
Maximum Cross-Flow Per Element:	34.1 m ³ /h (150 gpm)
Max Pressure Drop Per Element:	0.35 bar (5 psi)
Feed Free Oil & Grease:	≤ 500 mg/L
Feed Total Suspended Solids:	≤ 500 mg/L
Continuous Free Chlorine:	≤ 2 mg/L
Typical Operating Flux:	20 - 200 LMH (12 - 118 GFD)
Recommended Pre-Filter:	150 μm

Model Number Size	Titan70XB-1812-80HF- TWM 1812	Titan70XB-4040-80HF- TWM 4040	Titan70XB-8040-80HF- FRF 8040
Active Area <i>m² (ft²)</i>	0.17 (1.9)	3.5 (38)	15.2 (164)
Weight <i>kg (lb)</i>	0.45 (1)	3.5 (8)	13 (29)
Outer Wrap	Tape	Tape	Fiberglass
Endcap	Male	Male	Female
Recommend crossflow <i>m³/h (gpm)</i>	1.1 (5)	5 (24)	24 (105)
Filtrate flowrate* <i>m³/h (gpm)</i>	0.03 (0.1)	0.6 (2.7)	2.6 (11.5)
Permeate connection D-1** <i>cm (in)</i>	1.71 (0.67)	1.90 (0.75)	2.86 (1.13)
Element diameter D-2 <i>cm (in)</i>	4.6 (1.80)	10.2 (4.00)	20.3 (8.00)
Element length (Female) L-1 <i>cm (in)</i>	30.48 (12.00)	101.6 (40.00)	NA
Element length (Male) L-1 <i>cm (in)</i>	29.8 (11.75)	96.1 (37.93)	101.6 (40.00)
Feed channel height H-1 <i>mm (mil)</i>	2.0 (80)	2.0 (80)	2.0 (80)

Note: *Testing condition: deionized water, 25°C, 1.7 bar (25 psi) transmembrane pressure.

Actual results will vary depending on feed water quality and operation conditions.

**All element dimensions have specified tolerances of +0.00/-0.06”.



Cleaning Exposure Guidelines

Maximum Backwash Pressure:	1.7 bar (25 psi)
Backwash Flux:	40 - 240 LMH (24 - 144 GFD)
Standard Backwash Duration:	30 seconds
Maximum Backwash Duration:	2 minutes
Maximum Cleaning Temperature:	85°C (185°F) @ 1 < pH ≤ 10, 50°C (122°F) @ 10 < pH ≤ 13.5
Maximum Cleaning pH:	1.0 < pH < 13.5 @ 50°C (122°F), 1.0 < pH < 10.0 @ 85°C (185°F)
Hydrochloric Acid:	≤ 0.4% or 1.0 Normal (pH > 1.0)
Citric Acid:	≤ 20% or 1.0 Normal (pH > 1.0)
Sodium Hydroxide:	≤ 4% or 1.0 Normal (pH < 13.5)
Free Chlorine Instantaneous/Total:	50 ppm/100,000 ppm hour @ pH 11
Peroxide/Ozone:	Not compatible

- Notes:** 1) Increased crossflow during backwash enhances cleaning efficacy
2) Backwash flux should be 1.5 to 2 times of operating flux

Handling & Storage Instructions

New Element Handling & Storage Guidelines

- ◇ Recommended storage temperature: 5°C – 20°C (41°F – 68°F). Do not freeze element
- ◇ Handle with care. Damage to elements/end-caps/ATDs can compromise performance
- ◇ It is recommended to store elements wet and horizontally
- ◇ Whenever possible, store elements in original packaging
- ◇ Drying can damage membrane surface and compromise performance
- ◇ Membrane elements should be stored in dry, dark, and ventilated conditions

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Installation & Initial Use Guidelines

- ◇ Prior to use, soak element for 24 hours with portable water then flush for at least 30 minutes
- ◇ Elements can be mounted vertically or horizontally
- ◇ When mounted vertically, it is recommended to orient feed to flow from top to bottom
- ◇ Use water or glycerin to lubricate seal

After Use Storage and Preservation Guidelines

Use standard CIP procedure to clean feed and filtrate from the elements prior to shut down. Then perform element preservation as recommended below:

- ◇ 1 – 7 days: Sanitize element by flushing with 10 ppm bleach and adjust to pH 11 for 30 minutes. Fill up element and housing with fresh 1 ppm bleach solution, seal the housing and store
- ◇ 1 week to 6 months: Fill up element and housing with 0.3% Saniclean* solution, seal the housing and store. Every two weeks drain the Saniclean solution from the system and flush with clean water. Refill the element and housing with 0.3% Saniclean solution, seal the housing and store.
- ◇ More than 6 months: Contact PolyCera, Inc. for further information.

Note: Saniclean is a USDA accepted, low-foaming acid anionic rinse product made by Five Star Chemicals & Supplies, Inc. (Colorado, USA). Please contact Five Star Chemicals & Supplies, Inc. or PolyCera, Inc. for further information.

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