

## PolyCera® Titan 70 Ultrafiltration Ultra-High Flow Spiral Monolith® Element Specifications

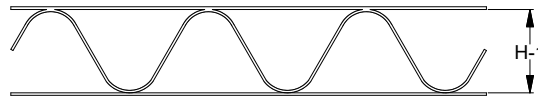
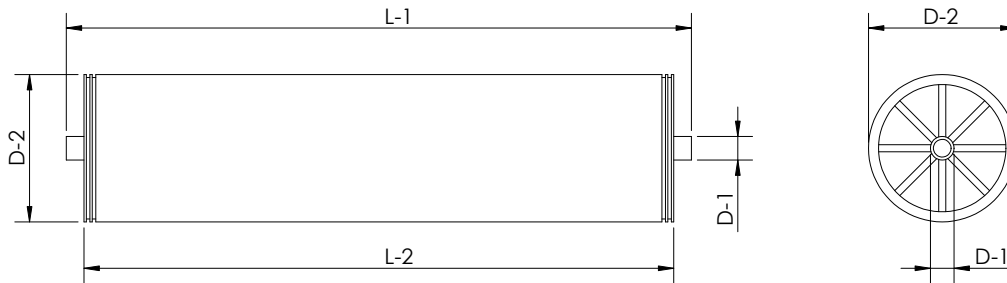
### Performance & Operating Parameters

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 <sup>3</sup> /h (150 gpm)
Max Pressure Drop Per Element:	0.35 bar (5 psi)
Feed Free Oil and 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)
Feed Spacer Thickness:	40 mil
Recommended Pre-Filter:	150 µm

Model Number Size	Titan 70XB-1812-UHF- TWM 1812	Titan 70XB-4040-UHF- TWM 4040	Titan 70XB-8040-UHF- FRF 8040
Active Area <i>m<sup>2</sup> (ft<sup>2</sup>)</i>	0.32 (3.4)	5.5 (60)	23.6 (254)
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>m<sup>3</sup>/h (gpm)</i>	1.1 (5)	5.7 (25)	34.1 (150)
Filtrate flowrate* <i>m<sup>3</sup>/h (gpm)</i>	0.06 (0.2)	0.95 (4.2)	4.1 (17.9)
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>	1.02 (40)	1.02 (40)	1.02 (40)

**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 & Chemical 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) @ $1 < \text{pH} \leq 10$ , 50°C (122°F) @ $10 < \text{pH} \leq 13.5$
Maximum cleaning pH:	1.0 < pH < 13.5 @ 50°C (122°F), 1.0 < pH < 10.0 @ 85°C (185°F)
Hydrochloric Acid:	$\leq 0.4\%$ or 1.0 Normal (pH > 1.0)
Citric Acid:	$\leq 20\%$ or 1.0 Normal (pH > 1.0)
Sodium Hydroxide:	$\leq 4\%$ 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

## Installation & Initial Use Guidelines

- ◇ Prior to use, soak element for 24 hours with DI 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 & 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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