

A large offshore oil rig is shown at sunset. The rig's complex steel structure is silhouetted against a sky filled with orange and red clouds. The rig is illuminated with warm yellow lights, and the scene is reflected in the dark water below. The overall atmosphere is industrial and dramatic.

POLYCERA[®]

PolyCera[®] Titan Off-Shore

Organic Metal Membranes

www.plyceramembranes.com

PolyCera® Titan Off-Shore Ultrafiltration

High Temperature, High Oil Tolerant and BTEX Resistant Spiral Monolith®

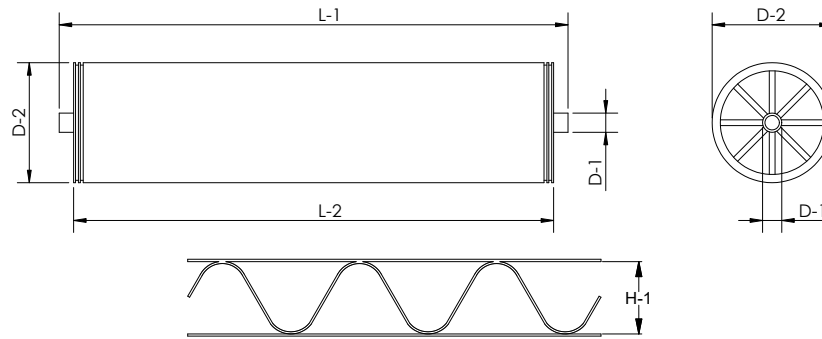
Made with organic metals, PolyCera Titan Off-Shore UF provides superior, cost-effective performance for applications that require high temperature and high oil tolerance. Fully backwashable, Titan Off-Shore Spiral Monolith Elements accommodate operating temperatures up to 90°C (194°F) and a pH operating range of 0-13.5, as well as free oil and grease up to 5,000 mg/L and total suspended solids up to 1,000 mg/L. In addition, they are resistant to organic solvents such as kerosene and BTEX (benzene, toluene, ethylbenzene and xylene, which are naturally-occurring compounds in crude oil). Titan Off-Shore offers stable operation and less cleaning, along with its light weight and low footprint.

ELEMENT SPECIFICATIONS

Performance & Operating Parameters		Cleaning & Chemical Exposure Guidelines	
Membrane Material:	PolyCera Titan	Max Backwash Pressure:	1.7 bar (25 psi)
Nominal Pore Size/MWCO:	5 nm/70 kDa	Backwash Flux:	40 - 240 LMH (24 - 144 GFD)
Operating pH Ranges:	1.0 – 10.0 @ T ≤ 90°C (194°F), 1.0 – 13.5 @ T ≤ 50°C (122°F)	Standard Backwash Duration:	30 seconds
Operating Temperature Ranges:	5°C – 90°C (41°F – 194°F)	Max Backwash Duration:	2 minutes
Max Inlet Pressure:	8.3 bar (120 psi)	Max Cleaning Temperature:	90°C (194°F) @ 1 < pH ≤ 10, 50°C (122°F) @ 10 < pH ≤ 13.5
Max Cross-Flow Per Element:	34.1 m³/h (150 gpm)		
Max Pressure Drop Per Element:	1.72 bar (25 psi)	Max Cleaning pH:	1.0 < pH < 13.5 @ 50°C (122°F), 1.0 < pH < 10.0 @ 85°C (185°F)
Max Free Oil & Grease:	≤ 5,000 mg/L		
Max Total Suspended Solids:	≤ 1,000 mg/L	Hydrochloric Acid:	≤ 0.4% or 1.0 Normal (pH > 1.0)
Max Combined O&G and TSS:	≤ 5,500 mg/L	Citric Acid:	≤ 20% or 1.0 Normal (pH > 1.0)
Max BTEX:	≤ 500 mg/L	Sodium Hydroxide:	≤ 4% or 1.0 Normal (pH < 13.5)
Continuous Free Chlorine:	≤ 5 mg/L	Free Chlorine Instantaneous/Total:	50 ppm/100,000 ppm hour @ pH 11
Typical Operating Flux:	20 - 200 LMH (12 - 118 GFD)	Peroxide/Ozone:	Not compatible
Recommended Pre-Filter:	100 µm		
Notes: 1) Increased crossflow during backwash enhances cleaning efficacy 2) Backwash flux should be 1.5 to 2 times of operating flux			

Model Number	70XB-4040-UHF-OS-TWM	Titan 70XB-8040-UHF-OS-FRF
Size	4040	8040
Active Area m² (ft²)	5.5 (60)	23.6 (254)
Weight kg (lb)	3.5 (8)	13 (29)
Outer Wrap	Tape	Fiberglass
Endcap	Male	Female
Recommend crossflow m³/h (gpm)	5.7 (25)	34.1 (150)
Filtrate flowrate* m³/h (gpm)	0.95 (4.2)	1.9 (8.3)
Permeate connection D-1** cm (in)	1.90 (0.75)	2.86 (1.13)
Element diameter D-2 cm (in)	10.2 (4.00)	20.3 (8.00)
Element length (Female) L-1 cm (in)	101.6 (40.00)	NA
Element length (Male) L-1 cm (in)	96.1 (37.93)	101.6 (40.00)
Feed channel height H-1 mm (mil)	1.02 (40)	1.02 (40)
Notes:	*Testing condition: synthetic produced water feed stream with 1000 ppm crude oil, 25°C, 1.9 bar (27 psi) transmembrane pressure, 10% recovery. Actual results will vary depending on feed water quality and operation conditions. **All element dimensions have specified tolerances of +0.00/-0.06".	

ELEMENT SPECIFICATIONS



Handling & Storage Instructions

New Element Handling & Storage Guidelines

- Recommended storage temperature: 5°C – 30°C (41°F – 86°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 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 & 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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