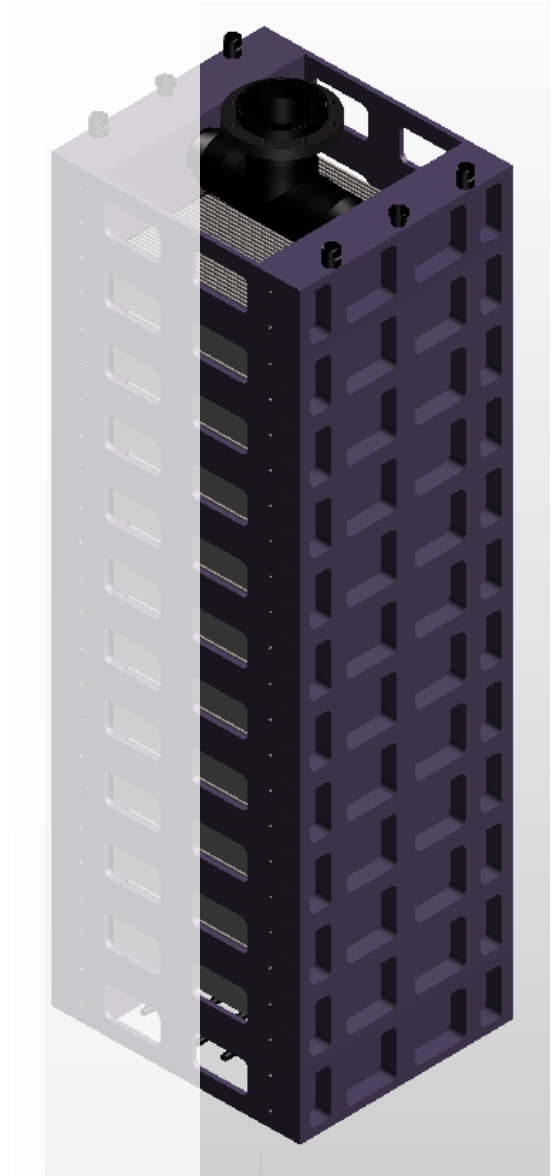


OVIVO[®] Filter Rack
SiC Ceramic
Flat Sheet Membranes

► **OVIVO SiC-FSM**



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Table of Contents

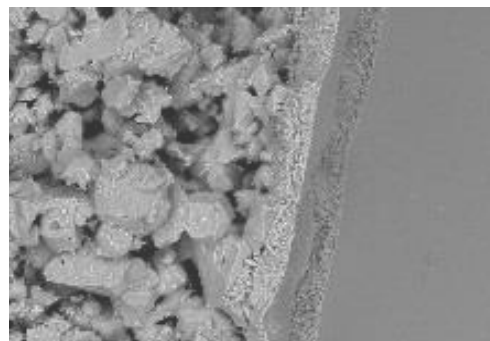
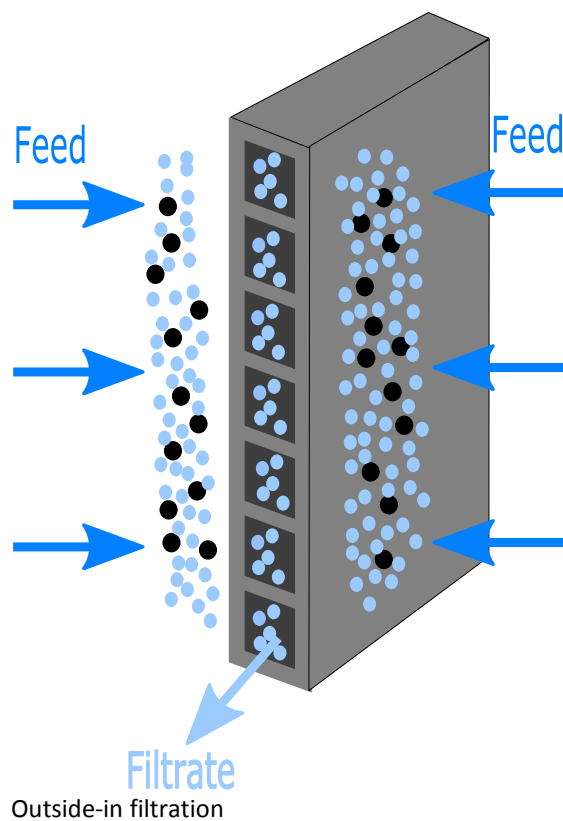
SIC FLAT SHEET MEMBRANES (FSM)	3
Your Benefits.....	4
Application Area	4
Performance	4
Membrane Material Comparison	5
Technical Data of the membrane	5
SIC-FSM MODULE	6
Technical Data.....	6
FILTRATION RACK	7
Advantage of OVIVO SiC-FSM-Filtration Rack.....	7
Technical Data.....	7
Typical setup for a Flat Sheet Membrane Filtration Rack.....	8
ORDERING INFORMATION	9
WHERE TO FIND US	10



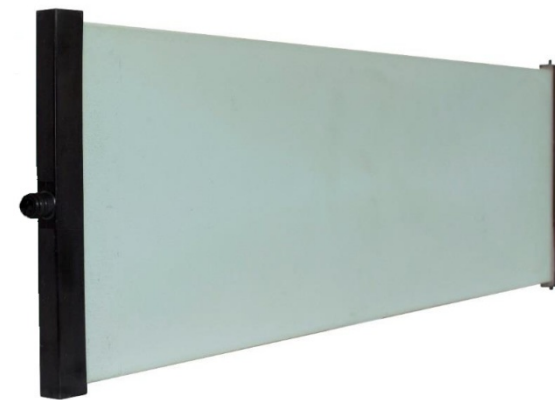
SIC FLAT SHEET MEMBRANES (FSM)

The FSM carrier and the selective layers are made of recrystallized silicon carbide which gives the product some unique advantages such as high flux, total chemical resistance (pH 1-13: constant exposure solvents / oxidizer) and long lifetime. The FSM is offered with pore sizes in the MF and UF range. The FSM is built into a submerged vacuum driven filtration rack, which consist of stacks of modules each with multiple FSM's. Cleaning can be performed by back flushing in place along with chemical reagents, if needed.

The high flux submersible silicon flat sheet membranes are designed for submerged outside-in filtration applications and provide an extremely high tolerance towards upstream upsets.



Membrane built up with different layers



SiC- FSM Membrane sheet with connections

Your Benefits

SiC-FSM Membrane Benefits

- Highly Hydrophilic ▶ clean water permeability up to 10.000 L/(h · m² · bar)
- Anti-clogging ▶ membrane repels negatively charged particles
- Chemically inert ▶ no degradation of membrane from any chemical
- Robustness ▶ 2nd hardest material (after Diamonds) endures temperature up to 800°C

Operation & Features Benefits

- Highly compact designs
- High recovery - close to 100% mass
- Minimal maintenance and simple operation
- Lifetime exceeding 5 years
- Resistant to solvents, oil, grease, high temperature and strong oxidizers (O₃, Cl₂, H₂O₂ ...)
- Low energy consumption

Application Area

- Clean water
- Wastewater Treatment
- Water and Wastewater Recycling
- Well water
- Surface water
- Sewage water
- MBR
- High TSS water
- Sludge thickening
- Tertiary water

Performance

- Bacteria: 4 log removal
- Flux: 50 – 1000 LMH
- SDI typical well below 3



Membrane Material Comparison

TYPE	SiC	Al ₂ O ₃	Polymer
LIFE TIME	+++	+++	+
FLUX	+++	++	+
CHEMICAL RESISTANCE	+++	++	+
ENERGY SAVINGS	+++	++	+
RECOVERY RATE	+++	+++	+
OPERATING TMP	+++	++	+
FOULING TENDENCY	+++	++	+
TEMPERATURE RESISTANCE	+++	+++	+

Technical Data of the membrane

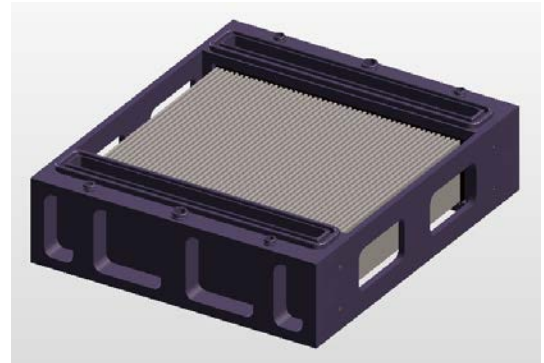
Membrane material	Recrystallized Silicon Carbide (SiC)
O-Ring material	EPDM *
Cap material	Fiberglass ; PPS
Active membrane surface area	0.155 m ² ; 1.67 ft ²
Cut off size	0.1 µm
Max. filtrate flow	155 L/h ; 5.47 cfh
Max. suction pressure	-700 mbar ; -20 inHg
Operating temperature	5 – 80 °C ; 41 – 176 °F
pH Resistance	1 - 13
Max. backwash pressure	2 bar ; 29 psi

* Other material on request

The membrane has NSF61 drinking water approval

SIC-FSM MODULE

A module consists of multiple numbers of membranes.
Each membrane can be replaced individually.



Technical Data

MODULE	SiC01-M
Number of SiC-FSM membranes	50
Active Membrane Surface Area	7.55 m ² ; 81.3 ft ²
Module Housing material	Polyethylene (PE500)
Gaskets material	EPDM *
Max. Operating Temperature	80°C / 176°F
pH Resistance	1-13
Operating Temperature	5 – 40 °C ; 41 – 104 °F **
Weight	60 kg ; 132 Lbs

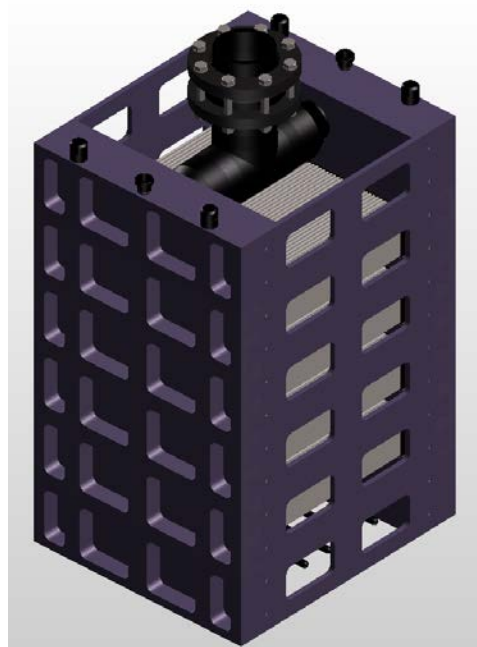
* Other material on request

** Applications with temperature above 40 °C / 104 °F to be confirmed by the supplier

FILTRATION RACK

Advantage of OVIVO SiC-FSM-Filtration Rack

- Modular design
- Wetted parts metallic free, suitable for corrosive waste water treatment
- Easy dismantling (4 sealed nuts)
- Fast replacement of individual membranes
- Integrated filtrate channel for maximal flow
- Rack equipped with integrated air scouring system
- Flexible design for easy add or removal of single module.

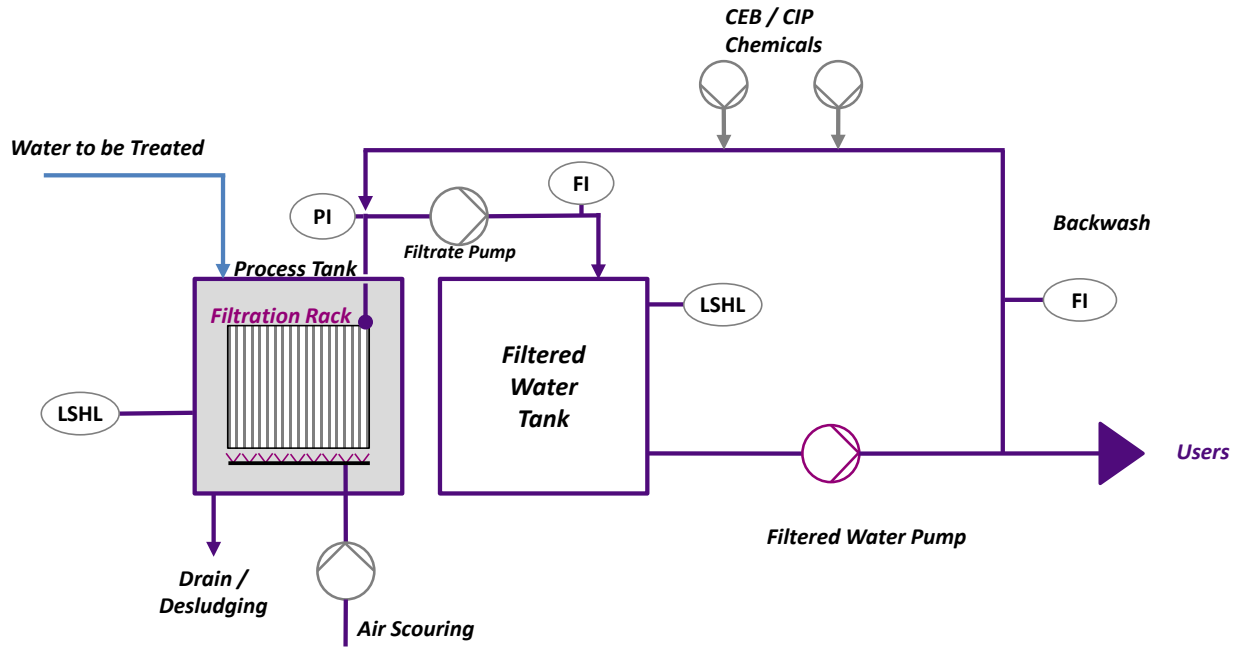


Technical Data

RACK SiC01-R		01	02	03	04	05	06	07	08	09	10
Rack Material		Polyethylene (PE500)									
Number of Filtrate Modules		1	2	3	4	5	6	7	8	9	10
Dimensions	Height ¹⁾	752	952	1152	1352	1552	1752	1952	2152	2352	2552
		mm									
	inch	29.6	37.5	45.4	53.2	61.1	69.0	76.9	84.7	92.6	100.5
Width	mm / inch	795 / 31.3									
Depth	mm / inch	698 / 27.1									
Membrane Area	m ² / ft ²	7.55	15.1	22.7	30.2	37.8	45.3	52.9	60.4	68.0	75.5
		81.3	163	244	325	406	488	569	650	731	813
Air Scouring	Nm ³ /h / cfm	30.0 / 17.7									
Dry Weight	kg	133	196	259	322	385	448	511	574	637	700
	lbs	300	442	584	725	867	1009	1150	1292	1433	1575
Filtrate Conn.	DN / inch	DN150 / 6"									
Air Connection	DN / inch	2 x DN25 / 1"									

1) Height includes filtrate connection flange

Typical setup for a Flat Sheet Membrane Filtration Rack



CEB: Chemical Enhanced Backwash
 CIP: Clean In Place

ORDERING INFORMATION

OVIVO SiC01-	↓	↓	
	R	↓	Complete Filter Rack ready to connect
		01	Rack with 1 Filter Module 7.55 m ² / 81.3 ft ² (Total 7.55 m ² / 81.3 ft ²)
		02	Rack with 2 Filter Module 7.55 m ² / 81.3 ft ² (Total 15.1 m ² / 163 ft ²)
		03	Rack with 3 Filter Module 7.55 m ² / 81.3 ft ² (Total 22.7 m ² / 244 ft ²)
		04	Rack with 4 Filter Module 7.55 m ² / 81.3 ft ² (Total 30.2 m ² / 325 ft ²)
		05	Rack with 5 Filter Module 7.55 m ² / 81.3 ft ² (Total 37.8 m ² / 406 ft ²)
		06	Rack with 6 Filter Module 7.55 m ² / 81.3 ft ² (Total 45.3 m ² / 488 ft ²)
		07	Rack with 7 Filter Module 7.55 m ² / 81.3 ft ² (Total 52.9 m ² / 569 ft ²)
		08	Rack with 8 Filter Module 7.55 m ² / 81.3 ft ² (Total 60.4 m ² / 650 ft ²)
		09	Rack with 9 Filter Module 7.55 m ² / 81.3 ft ² (Total 68.0 m ² / 731 ft ²)
		10	Rack with 10 Filter Module 7.55 m ² / 81.3 ft ² (Total 75.5 m ² / 813 ft ²)
	M	↓	Modules
		B	Bottom Module with Air Distribution System (incl. O-Rings and Gaskets)
		T	Top Module with Filtrate and Air Connections (incl. O-Rings)
		F	Filter Module with 50 Membranes (incl. O-Rings and Gaskets)
	K	↓	Installation & Seal Kits
		IK01	Installation Kit with Tie Rod M16; ø16 x 520 mm for 1 Filter Module
		IK02	Installation Kit with Tie Rod M16; ø16 x 720 mm for 2 Filter Module
		IK03	Installation Kit with Tie Rod M16; ø16 x 920 mm for 3 Filter Module
		IK04	Installation Kit with Tie Rod M16; ø16 x 1120 mm for 4 Filter Module
		IK05	Installation Kit with Tie Rod M16; ø16 x 1320 mm for 5 Filter Module
		IK06	Installation Kit with Tie Rod M16; ø16 x 1520 mm for 6 Filter Module
		IK07	Installation Kit with Tie Rod M16; ø16 x 1720 mm for 7 Filter Module
		IK08	Installation Kit with Tie Rod M16; ø16 x 1920 mm for 8 Filter Module
		IK09	Installation Kit with Tie Rod M16; ø16 x 2120 mm for 9 Filter Module
		IK10	Installation Kit with Tie Rod M16; ø16 x 2320 mm for 10 Filter Module
		SKMB	Seal Kit for Bottom Module (6 O-Rings, 4 Flat Gaskets, 8 PEEK Screws)
		SKMT	Seal Kit for Top Module (6 O-Rings, 8 PEEK Screws)
		SKMF	Seal Kit for Filter Module (6 O-Rings, 4 Flat Gaskets, 8 PEEK Screws)
	S	↓	Spare Parts
		FSMB	SiC Flat Sheet Membrane 00151
		ADSB	Air Distribution System for Bottom Module (incl. Connectors DN 25, O-Rings)
		FITM	Filtrate Collector for Top Module (incl. Loose Flange DN 150, O-Rings)
		ACTM	Air Connectors DN 25 for Top Module (incl. O-Rings)
		PEEK	Hex Socked Head Screw PEEK M6x20 ISO 4762 (8 pcs)
		RECP	Rod End Cap (incl. O-Ring)
		CRBR	Crane Bridge

Note: technical data are subject to changes without notice.

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