

# FG Module

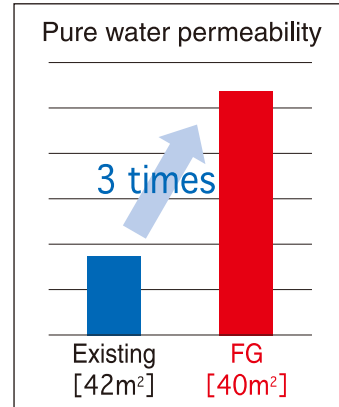
FG-0101-S4 (US02-125) / FG-0101-S6 (US02-125)



## High filtration performance with small footprint

### 1 High permeability

- Kuraray has developed a hollow fiber membrane module with three times higher permeability compared to its existing products. It has been observed that maximum 13m<sup>3</sup>/hr (or 8m<sup>3</sup>/m<sup>2</sup>/day) is possible in clear water filtration. With its lower transmembrane pressure difference, power cost (power for pumps) can be reduced.



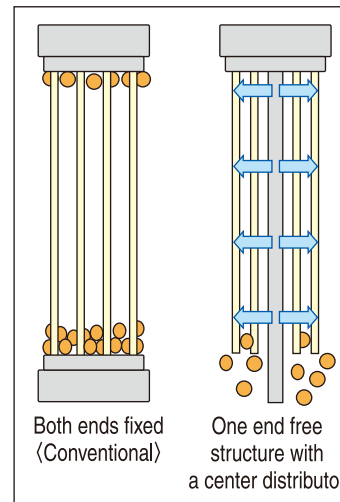
Compared to our existing product

### 2 High strength, high chemical resistance

- Kuraray's own hydrophilic PVDF enjoys excellent strength and chemical resistance, which enable prolonged use of the FG Module.

### 3 Applicable to higher turbidity

- Due to the one end free structure, suspended solids (SS) can be easily removed without accumulating between fibers.
- By ejecting air and water from the center distributor located at the center of the element, effective cleaning of the fibers can be achieved.



### 4 High water recovery

- The unique physical cleaning method (air backwashing) as well as the external pressure type filtration enable high water recovery with less wastewater generation\*1

\*1 Recovery rate (internal test result): 98%

Raw water: river-bed water with the turbidity of 0.7-10, Flow rate: 3.0m<sup>3</sup>/m<sup>2</sup>/day, Physical cleaning: every 30 min

### Physical cleaning procedure

The photos show PSF membrane.

<p>1 SS attaches to the membrane surface.</p>	<p>2 Attached SS is exfoliated with pressurized air.</p>	<p>3 SS is scrubbed off with air bubbles.</p>	<p>4 Membrane surface is cleaned, and the performance recovers.</p>

### 5 Small footprint, low cost

- The height of the housing is as low as about 1.4 m, enabling compact system design.
- Since stainless housing is used, the system can be installed outdoor.
- Reductions in space and system cost can be achieved because a tank and pumps for backwashing are not needed.



## Applications

- Bacteria, SS, Fe and Mn removal as well as drinking water production from surface and ground water
- Purification of process water for food manufacturing, precise cleaning and etc.
- Pretreatment for RO or NF, used for ultrapure water production and seawater desalination
- Recovery and recycle of pure water washing wastewater and sand-filter backwash wastewater
- Concentration, recovery and recycle of various abrasives and other valuables

## Model / Specifications

Product name		FG Module		
Module type		FG-0101-S4 (US02-125)	FG-0101-S6 (US02-125)	
Element	Type	FGE-0101 (US02-125)		
	Nominal pore size (90% cutoff)	0.02 $\mu$ m		
	Effective membrane surface area (m <sup>2</sup> )	40		
	Standard design flux (m <sup>3</sup> /hr)	13 or less		
	Material	Hollow fiber membrane	Hydrophilic PVDF <sup>*1</sup>	
		Potting material	Polyurethane	
		Sheath	PVC	
		Center distributor	PVC	
Net		Polyethylene		
O-ring/packing	Silicon rubber			
Filling liquid	NaClO solution <sup>*2</sup>			
Housing	Type	FGH-S4	FGH-S6	
	Material	SUS304	SUS316	
	Dimensions (Max. diameter x Height: mm)	$\phi$ 207x1,421		
	Inner volume (L)	39		
Operating conditions	Filtration type	External pressure type, dead-end		
	Allowable maximum operating pressure (MPa)	0.5		
	Allowable maximum transmembrane pressure difference (MPa)	0.3		
	Allowable maximum temperature (deg.C)	40		
	pH range	1 to 10 <sup>3</sup>		

\*1 Polyvinylidene fluoride (PVDF) mixed with Polyvinyl alcohol

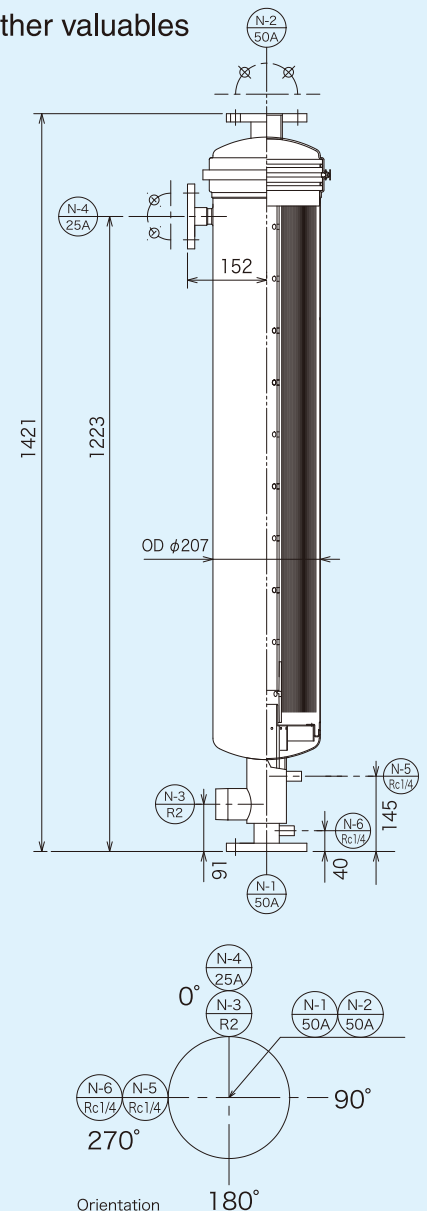
\*2 The concentration of the NaClO solution is as follows:

- Element: 25mg/L
- Module: 5mg/L

\*3 pH can exceed the above range during chemical cleaning. Contact us for details.

### List of nozzles

No.	Size	Applications
N-1	10K-50	Raw water inlet
N-2	10K-50	Treated water outlet
N-3	R2	Drain outlet
N-4	10K-25	Overflow port
N-5	Rc 1/4	Air inlet (aeration board)
N-6	Rc 1/4	Air inlet (Conduit tube)



### Notes:

- 1) Specifications and the type of the element and housing may be changed without prior notice.
- 2) Applications and basic data (in-house data) specified in this catalogues are standard examples. These depend on the influent to be treated, operating conditions and circumstances. Contact us before usage.
- 3) The nozzles shown in the above drawing are those conforming JIS.

Manufacturer

**KURARAY CO., LTD.**  
Environmental Business Development and Promotion Division

Ote Center Building, 1-1-3 Otemachi, Chiyoda-ku,  
TOKYO 100-8115, Japan

TEL: +81-3-6701-1550 FAX: +81-3-6701-1654

Distributor