

SL Module

SL-5101U-S4(M02-100) / SL-5101H-S4(M02-100)

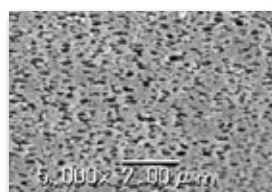


- **Applicable to higher turbidity water with unique fiber arrangement and module structure**
- **Higher strength and chemical stability**

1 0.02 μ m with sufficient permeability

- With the pore size of 0.02 μ m achieved by Kuraray's own technology, SL has both a UF^{*1}-like particle size cutoff and MF^{*2}-like water permeability.

^{*1} UF: Ultra Filtration, ^{*2} MF: Micro Filtration



Membrane surface (SEM)

SLE-5101U
(M02-100)

2 Suitable for higher turbidity

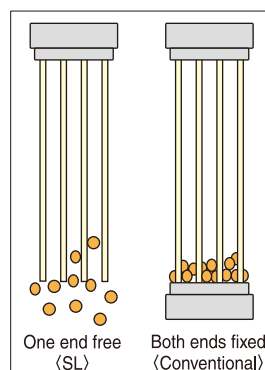
- As hollow fibers are divided into 8 bundles to make some space, SL is suitable for filtering higher turbidity water.



Divided arrangement

3 Fouling significantly prevented

- Membrane surface is coated with hydrophilic polyvinyl alcohol (PVA), so that less fouling occurs.
- As the lower end of hollow fibers is left free, suspended solids (SS) can be easily removed without accumulating between the fibers.
- Due to the unique physical cleaning method (backwashing using pressurized air and air scrubbing), SS attached to the membrane surface is effectively removed, resulting in filtration performance recovery.



Physical cleaning procedure

Photos of Polysulfone hollow fibers

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

4 Thermal resistance

- The thermal resistant type, SL-5101H-S4 (M02-100), can be used for the filtration of hot water up to 80 deg.C.

5 Small footprint, low cost

- With a housing height of about 1m, a compact system design is allowed for a limited space.
- Outside installation is possible as the housing is made of stainless steel.
- Equipment cost can be reduced because no tanks or pumps for backwashing are needed.

The material of the sheath is different between SLE-5101U (M02-100) for normal temperature operation and SLE-5101H (M02-100) with thermal resistance.



SLE-5101H(M02-100)



Applications

- Concentration, recovery and recycle of various abrasives and other valuables
- Recovery and recycle of pure water washing wastewater and sand-filter backwash wastewater
- Removal of suspended solids, including iron, manganese and etc. from surface and ground water
- Purification of process water for food manufacturing, precise cleaning, etc.



Sand-filter backwash wastewater recycling system using SL modules

Types and specifications

Product name			SL Module	
Module type			SL-5101U-S4 (M02-100)	SL-5101H-S4 (M02-100)
Element	Element type		SLE-5101U (M02-100)	SLE-5101H (M02-100)
	Thermal resistance		For normal temperature operation	For higher temperature operation
	Nominal pore size (90% cutoff)		0.02μm	
	Effective membrane surface area (m ²)		28	
	Standard design flux (m ³ /hr/module)		<2	
	Material	Hollow fiber membrane	Hydrophilic PVDF ³	
		Potting material	Polyurethane	Thermal resistant polyurethane
		Sheath	PVC	Thermal resistant PVC
		Center post	SUS304	
		Net	Polyethylene	
		O-ring	Silicon rubber	
	Filling liquid		NaClO ⁴	
Housing	Housing type		SLH-S4/SLH-S6	
	Dimensions (Max. diameter x Height: mm)		φ189×1,160	
	Material	Main unit	SUS304/SUS316	
		O-ring	Silicon rubber	
	Inner volume (L)		Approx. 30	
Operating conditions	Filtration type		External pressure type, dead-end filtration	
	Allowable maximum operating pressure (MPa)		0.5	
	Allowable maximum transmembrane pressure difference (MPa)		0.3	0.3 0.2 (@60-80 deg.C) 0.1 (@80-90 deg.C)
	Allowable maximum temperature (deg.C)		40	80
	pH range		1-10 ⁵	

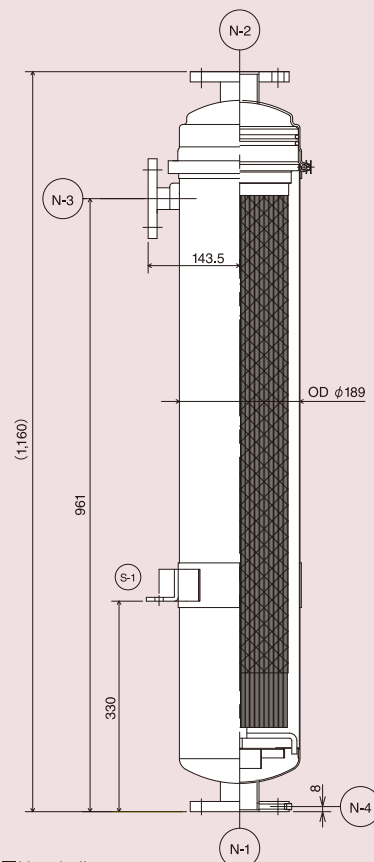
³ Polyvinylidene fluoride (PVDF) coated with Polyvinyl alcohol

⁴ The concentration of NaClO is as follows:

- Element --- 25mg/L

- Module --- 5mg/L

⁵ pH can exceed the above range during chemical cleaning. Contact us for details.



■ Nozzle list

NO.	Size(inch)	Name
N-1	2	Raw water inlet, Drain outlet
N-2	2	Effluent outlet
N-3	1	Air vent
N-4	1/8	Scrubbing air inlet
(S-1)	—	(Support band)

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 catalogue 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

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