



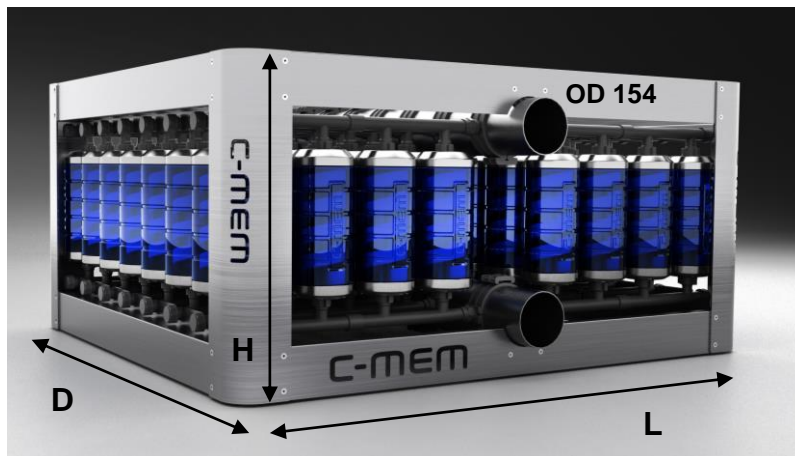
## Submerged Hollow Fibre Filtration Modules for Water and Wastewater Treatment

<b>VERSION</b>	<b>C-MEM modules:</b>	<b>March 2017</b>
<b>PRODUCT DESCRIPTION</b>	<b>Membrane Chemistry:</b>	<b>PE</b> (410-440µ, 740 mm +/- 15 mm, 1600 - 2000 fibres)
	<b>Housing Shell / End Caps:</b>	PE reinforced / PP reinforced / U-PVC / ABS
	<b>Permeate Collection Tube:</b>	U-PVC / SS 1.4301 (304)
	<b>Potting Material:</b>	Proprietary epoxy compound
	<b>Membrane Construction:</b>	Hollow fibre
	<b>Antifouling:</b>	Yes
	<b>Pre-Wetting:</b>	Yes
	<b>Support frame material:</b>	SS304 / 1.4301

<b>PRODUCT SPECIFICATION</b>	<b>C-MEM Model</b>	<b>Flow Range (m<sup>3</sup>/hr)</b>
	<b>8 x 8</b>	5.0 – 36.4

<b>OPERATING &amp; DESIGN INFORMATION</b>	Maximum Pressure (water, out-in):	3 bar (40°C)
	Temperature Range:	0°C to 40°C
	Maximum Production Transmembrane Pressure:	0.7 bar
	Maximum Backflush Transmembrane Pressure:	1.5 bar
	Air scouring, if applicable:	6 Nm <sup>3</sup> /h and cartridge – 4 hours/day max.
	Maximum Free Chlorine @ 25°C (77°F) or lower:	5000 ppm @ 9.5 pH during intermittent chemical backwash
	Maximum Total Chlorine Contact:	1.0 Mio ppm – hrs cumulative

<b>PRODUCT DIMENSIONS</b>	<b>Model</b>	<b>Fiber Diameter (ID)</b>	<b>Membrane Area [min.]</b>	<b>D (mm)</b>	<b>L (mm)</b>	<b>H (mm)</b>
	C-MEM 8 x 8	0.41-0.44 mm	~ 380 m <sup>2</sup>	1600	1800	835



### Start-up and commissioning:

C-MEM modules will be supplied integrity tested and are manufactured pre-wetted. They can be used for filtration without any pre-treatment. There may be some foam production immediately after starting filtration which shall disappear shortly.

### Module Storage Conditions:

New modules should be kept in their original shipping containers and crates until ready for installation. Modules should be stored as follows:

- Store the modules indoors and out of direct sunlight
- Store the modules at temperatures between 10 – 30°C
- Store the modules at relative humidity below 70%
- Store the modules in a horizontal position

### Module Cleaning Procedures:

General module cleaning procedure before initial use of the module and as required maintaining satisfactory cartridge productivity are outlined in this section. Different combinations of the flowing cleaning procedures, or custom-cleaning procedures that may call for proprietary chemical formulations, may be required to achieve satisfactory cleaning results.

#### Caustic Wash

- Use clean water (< 60 mg/litre CaCO<sub>3</sub> hardness) between 15 and 25 °C
- Circulate water through the system under standard pressure and flow conditions
- Add caustic (NaOH) slowly to achieve a pH of 12.0 (~ 0.5 wt% NaOH addition)
- Circulate caustic solution through the system for 20 to 30 minutes
- Drain and completely flush system with clean water at a water temperature between 10 and 30 °C

#### Caustic / Chlorine Wash

- Use clean water (< 60 mg/litre CaCO<sub>3</sub> hardness) between 15 and 25 °C
- Circulate water through the system under standard pressure and flow conditions
- Add caustic (NaOH) slowly to achieve a pH of 12.0 (~ 0.5 wt% NaOH addition)
- Add liquid sodium hypochlorite (NaOCl) to achieve a total chlorine concentration of 5000 mg/litre total chlorine (max.)
- Circulate caustic/chlorine solution for 20 to 30 minutes
- Check caustic/chlorine solution and add NaOCl as required to maintain total chlorine concentration
- Drain and completely flush system with clean water at a water temperature between 10 and 30 °C

#### Acid Wash

- Use clean water (< 60 mg/litre CaCO<sub>3</sub> hardness) between 15 and 25 °C
- Circulate water through the system under standard pressure and flow conditions
- Add citric acid (solid) slowly to achieve a pH of 2.5 (~ 0.5 wt% citric acid addition)
- Circulate acid solution through the system for 20 to 30 minutes
- Drain and completely flush system with clean water at a water temperature between 10 and 30 °C

#### **NOTE:**

**ALWAYS ADD CAUSTIC BEFORE CHLORINE. NEVER ADD CHLORINE TO A NEUTRAL OR ACID SOLUTION.**

**ALL PROCESS LINES MUST BE COMPLETELY FLUSHED BETWEEN EACH CAUSTIC, CHLORINE, AND ACID WASH.**

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