

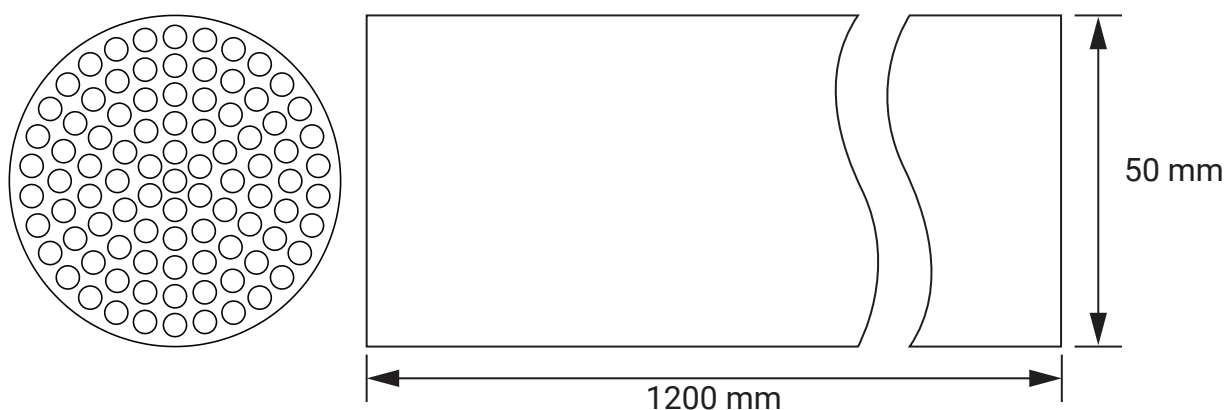


**Multichannel Ceramic Membrane**

**Model Code: NPC-M-5091**

<b>General Specification</b>	
<b>Model Code</b>	NPC-M-5091
<b>Outer Diameter (O.D)</b>	50 mm
<b>Channel Count</b>	91 (Circular cross-section)
<b>Channel Inner Diameter</b>	3.5 mm
<b>Membrane Length</b>	1200 mm (Maximum)
<b>Filtration Surface Area</b>	~1.2 m <sup>2</sup>
<b>Filtration Mode</b>	Inside-out (feed in channels)
<b>Flow Path</b>	Axial feed, rapid permeation
<b>Max. Operating Pressure</b>	Up to 10 bar (material/module-dependent)
<b>Operating Temperature</b>	Up to 300°C (material/module-dependent)
<b>pH Range</b>	0–14 (material/module-dependent)
<b>Porosity</b>	45 ± 5%

<b>Material &amp; Coating Combinations</b>		
<b>Support Material</b>	<b>Available Coatings</b>	<b>Key Features</b>
Silicon Carbide (SiC)	SiC (fine coating)	Excellent chemical and thermal resistance
Alumina (Al <sub>2</sub> O <sub>3</sub> )	Zirconia (ZrO <sub>2</sub> )	High mechanical stability, acid-resistant
Alumina (Al <sub>2</sub> O <sub>3</sub> )	Titania (TiO <sub>2</sub> )	Stable, biocompatible, suitable for bioseparations
Alumina (Al <sub>2</sub> O <sub>3</sub> )	Silica (SiO <sub>2</sub> )	High water flux, chemically inert, limited alkali resistance
Mullite	Zirconia (ZrO <sub>2</sub> )	Optional surface: superhydrophobic/superhydrophilic
Mullite	Silica (SiO <sub>2</sub> )	Cost-effective, surface-tunable, moderate mechanical /thermal performance





Separation Layer Options			
Membrane Type	Pore Size	Pure Water Permeability (Nominal, LMH/bar)	Typical Applications
<b>Microfiltration (MF)</b>	3 $\mu$	~2200-2500 LMH	Prefiltration, Coarse solids removal, wastewater clarification
<b>Microfiltration (MF)</b>	1 $\mu$	~1800-2200 LMH	Biomass separation, yeast recovery, food & beverage Prefiltration
<b>Microfiltration (MF)</b>	200 nm	~1200-1600 LMH	Bacteria removal, oil-water separation, suspended solids
<b>UF/MF</b>	100 nm	~800-1200 LMH	Cell harvesting, protein separation, microbial filtration
<b>Ultrafiltration (UF)</b>	50 nm	~400-800 LMH	Virus removal, enzyme separation, pharmaceutical clarification
<b>Tight UF</b>	20 nm	~200-400 LMH	Endotoxin removal, nanofiltration, biopolymer and viral clearance

*Imp: Values represent nominal conditions at 1 bar pressure and 25°C using deionized water.*

### Application

- **Food & Beverage:** Clarification, microbial control, protein recovery
- **Pharma & Biotech:** Cell broth filtration, enzyme separation
- **Petrochemical:** Oil-water separation, catalyst recovery
- **Water Treatment:** MBR polishing, RO pretreatment

### Advantages

- Highest surface area (1.20 m<sup>2</sup>) among standard sizes, ideal for high-throughput systems
- 91 precision-formed channels for efficient flow and performance
- Compatible with aggressive cleaning (CIP, backflush)
- Excellent mechanical, chemical, and thermal resistance
- Modular and scalable for diverse industrial applications
- Suitable for both new systems and retrofit upgrades

