

## Capillary Ultrafiltration Module

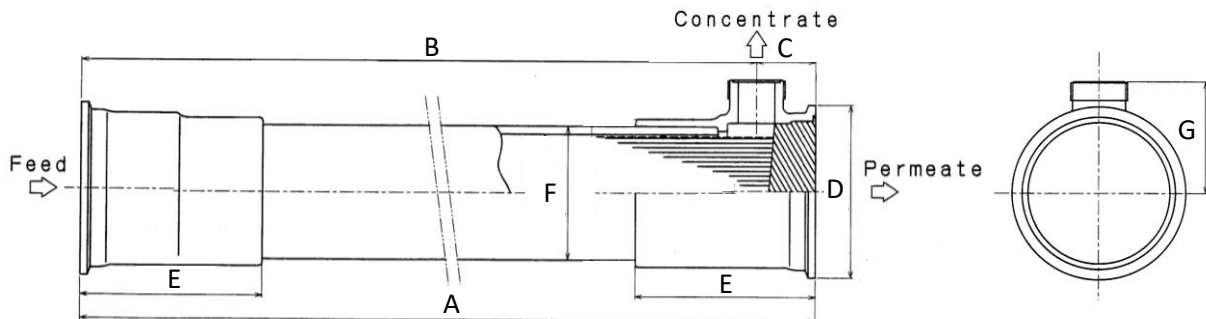
## K4R-PW1

The K4R-PW1 capillary ultra-filtration module is specially designed to produce bacteria and pyrogen free water for pharmaceutical, semiconductor, food, bioscience industries and to meet various global pharmacopeia standards for Endotoxins using Cold WFI process. The K4R-PW1 is a 6000 MWCO, Out to in ultra-filtration module which is compliant to FDA regulation CFR Title 21, Part 177 and certified to meet USP <88> Class VI requirements.

<b>Performance<sup>1</sup></b>	Initial permeate flow:	2.5 m <sup>3</sup> /h (11.0 GPM) (minimum)
	Test conditions:	1.0 bar (14.5 psi) (Trans membrane pressure) @25°C (77 °F)
	Nominal molecular weight cut off:	6,000 (protein)

<b>Type</b>	Configuration:	Capillary Ultrafiltration Module
	Membrane polymer:	Polysulfone
	Module diameter:	114±0.6 mm (4.488±0.024 inch)
	Module length:	1077±1.5 mm (42.40±0.059 inch)
	Preservative:	Hydrogen peroxide solution (0.3%)
	Pyrogen	Pyrogen-free <sup>2</sup>

<b>Application Data<sup>3</sup></b>	Temperature range:	5 - 40°C(41-104°F)	~ 70°C(~158°F)	~85°C(~185°F)	~ 98(~208°F)
	Max. transmembrane pressure	3.0 bar (43.5 psi)	2.0 bar (29.0 psi)	1.5 bar (21.8 psi)	1.0 bar (14.5 psi)
	Max. feed pressure	6.0 bar (87.0 psi)	3.0 bar (43.5 psi)	2.0 bar (29.0 psi)	1.5 bar (21.8 psi)
	Max. permeate pressure	6.0 bar (87.0 psi)	3.0 bar (43.5 psi)	2.0 bar (29.0 psi)	1.5 bar (21.8 psi)
	pH range	1 ~ 14			
	Operating mode:	Outside to inside filtration			



Dimensions

A	B	C	D	E	F	G
1077mm (42.40 inch)	1027mm (40.43 inch)	50mm (1.97 inch)	φ 147mm (5.79 inch)	153mm (6.02 inch)	φ 114mm (4.49 inch)	95mm (3.74 inch)

1) Typical module performance with UPW (Ultra-Pure Water).

2) Tested by Limulus test before ex-factory

3) The limitations shown here are for general use. The values may be more conservative for specific projects to ensure the best performance and longest life of the membrane.

Note: Hot water sanitization procedures

Transmembrane pressure:	0.2 bar (2.85 psi)
Heating rate:	Typically, 5°C (9°F) /min
Feed water temperature after heating:	85 to 95 °C (185 to 203 °F)
Circulatory cleaning time:	30 to 60 min
Cooling rate:	Typically, 5°C (9°F)/min

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7/29/2022

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