

ProCell large volume process-scale cartridges

CROSS FLOW FILTRATION

ProCell™ hollow fiber cartridges of 15 cm (6 in) diameter are intended for large, production-scale ultrafiltration (UF) and microfiltration (MF) applications (Fig 1). Containing up to 28 m² (300 ft²) of membrane area in a single, compact module with a 0.5 mm lumen inner diameter, these cartridges are well-suited for a wide range of bioprocessing operations.

ProCell cartridges are available in two path lengths, in a selection of ultrafiltration nominal molecular weight cut-offs and microfiltration pore sizes, as well as with several membrane fiber inner diameters.

ProCell hollow fiber cartridges are easily loaded into stainless steel housings, providing containment during operation. Each housing type is equipped with 2 in Tri-Clamp™ end fittings and 1.5 in Tri-Clamp permeate ports. O-ring seals at each cartridge end provide an integral, leak-proof connection of the cartridge within the housing.

ProCell UF cartridges can withstand up to 3.4 barg (50 psig) transmembrane pressure. The combination of large surface area and high pressure capability provides extremely high productivity for a variety of large-scale bioprocessing applications.

Cytiva can provide standard or custom engineered systems to incorporate our ProCell cartridges. Complete process automation using our UNICORN™ control system and clean-in-place options is available.



Fig 1. ProCell cartridges are fitted into stainless steel housings for strength and durability in handling and operation.

Key benefits of ProCell cartridge

- Sanitary design for production-scale applications
- Choice of two cartridge path lengths for optimized performance
- Efficient processing of thousands of liters
- Compact design with low hold-up volume
- Multiple cartridges can be assembled into compact production systems

Specifications

Housing dimensions for ProCell cartridges are listed in Table 1.

Table 1. ProCell cartridge housing dimensions

ProCell housing physical dimensions*

Housing size	Diameter**		Length**		Endfitting connections	Permeate connections
	cm	in	cm	in		
152	16.8	6.6	81	32	2-in TC	1.5-in TC
154	16.8	6.6	139	55	2-in TC	1.5-in TC

* Stainless steel housing dimensions. ** Nominal, not for design purposes.

Applications

Typical applications for ProCell hollow fiber cartridges are:

- Concentration, purification, or diafiltration of monoclonal antibodies, proteins, vaccines, viruses, plasma, liposomes, or plasmids
- Colloidal suspension concentration or diafiltration
- Cell harvesting or clarification
- Continuous buffer exchange
- Removal of suspended solids, viruses, bacteria, or pyrogens
- Harvesting or clarification of cell cultures
- Lysate clarification
- Continuous cell culture perfusion

Ordering information

Ultrafiltration

Model number	Pore size (NMWC)	Fiber i.d. (mm)	Membrane area		Nominal flow path length (cm)	Code number
			m ²	ft ²		
UFP-30-E-152M	30 000	1	8.3	89	60	11-0005-74
UFP-500-E-152M	500 000	1	8.3	89	60	56-4105-11
UFP-750-C-152M	750 000	0.5	14	150	60	29-0110-49
UFP-10-C-154M	10 000	0.5	28	300	110	56-4105-13
UFP-500-E-154M	500 000	1	16.6	179	110	56-4105-14
UFP-750-C-154M	750 000	0.5	28	300	110	29-0110-50

Microfiltration

Model number	Pore size (µm)	Fiber i.d. (mm)	Membrane area		Nominal flow path length (cm)	Code number
			m ²	ft ²		
CFP-2-E-152M	0.2	1	8.3	89	60	56-4105-12
CFP-2-E-154M	0.2	1	16.6	179	110	56-4105-15

ProCell stainless steel housings (one housing required per cartridge)

Model number	Description	Code number
SS-152TC	Housing assembly for ProCell 152M cartridges, 316L SS with 2 gaskets and 2 clamps	56-4106-35
SS-154TC	Housing assembly for ProCell 154M cartridges, 316L SS with 2 gaskets and 2 clamps	56-4106-36

ProCell cartridge and housing accessories

Model number	Description	Code number
CL12	1.5 in TC quick disconnect clamp, 304 SS	56-4106-67
CL16-LT	2 in TC quick disconnect clamp, 304 SS	56-4106-70
CL48	6 in TC [schedule 5 pipe] clamp, 304 SS	56-4106-74
KG12S	1.5 in TC gasket, silicone, pack of 4	56-4109-96
KG12B	1.5 in TC gasket, Buna-N, pack of 4	56-4109-97
KG16S	2 in TC gasket, silicone, pack of 4	56-4109-98
KG16B	2 in TC gasket, Buna-N, pack of 4	11-0005-24
KG48S	6 in TC [schedule 5 pipe] gasket, silicone, pack of 4	11-0005-28
K06ORS	ProCell cartridge O-ring set, silicone, pack of 2	56-4106-96

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CY14299-11Sep20-DF

