

Masterfilter DFSM Depth Filtration Cassettes

The Masterfilter DFSM series depth filter modules are composed of high-purity cellulose fibers and inorganic filter aids and with activated carbon powder through a special process. The internal interwoven three-dimensional structure delivers excellent filtration efficiency and high contaminant holding capacity in depth filtration applications. The production of these cassettes utilizes advanced and highly automated manufacturing process. All raw materials undergo rigorous quality control inspection to ensure consistent product quality and filtration performance.



Applications

- Clarification filtration of fermentation broth and cell culture fluids
- Filtration of serums and blood products
- Filtration of enzyme preparation
- Impurity removal and decolorization filtration of pharmaceuticals
- Filtration of colloidal or viscous liquids

Features and Benefits

- Excellent retention efficiency
- High contaminant holding capacity
- Single- and double-layer versions
- Longer lifetime

Materials of Construction

- Filter media: Cellulose, diatomite filter aid and ionic wet-strength resin (positive or negative charged) or Cellulose, activated carbon powder, ionic wet-strength resin (positive charged)
- Housing material: Glass fiber-reinforced polypropylene
- Accessory material: Polypropylene, Glass fiber-reinforced polypropylene

Operating Parameters

- Max. Operating Pressure: 3.5 bar at 40 °C
- Max. Differential Pressure (forward): 2.1 bar at 40 °C
- Max. Differential Pressure (reverse): 1.0 bar at 40 °C
- Sterilization: 2 autoclave cycles for 60 minutes at 123 °C

Biological Standards

- Bacterial Endotoxin: Aqueous extraction of autoclaved filter contains < 0.25 EU/ml as determined by Limulus Amebocyte Lysate (LAL), USP <85>
- Meet the requirement of USP<87> In Vitro Cytotoxicity Test
- Meet the criteria of the USP<88> Biological Reactivity Test for Class VI-121°C plastics
- Indirect Food Additives: All components comply with FDA 21 CFR requirements

Technical Parameters

Parameters	DFSM series									
EFA	23 cm ²	23 cm ²	270 cm ²	540 cm ²	0.11 m ²	0.11 m ²	0.55 m ²	0.77 m ²	1.1 m ²	1.43 m ²
Layer	Single	Double	Single	Double	Single	Double	Double	Single	Double	Single
Filter media and availability	Diatomaceous earth, cellulose, synthetic resin (LCMZ)									
	x	x	x	x	x	x	x	x	x	x
Filter media and availability	Cellulose, activated carbon powder, ionic wet-strength resin (LCMK)									
	x	-	x	-	-	-	-	-	-	-
Housing material	Polypropylene				Glass fiber-reinforced polypropylene					
Sealing material	-				Silicone					
Connector	Luer lock		6 mm Hose barb		Flat seal (cassette) and 50 mm Tri-clamp (adaptor)					
Length	28 mm		215 mm		620 mm					
Height	71 mm		135 mm		320 mm					
Thickness	28 mm	33 mm	55 mm	75 mm	30 mm	71 mm	71 mm	77 mm	122 mm	132 mm
Max. operating Pressure	3.5 bar (50 psi) at ≤ 40 °C				3.5 bar (50 psi) at 25 °C, 1.0 bar (15 psi) at 80 °C					
Max. differential pressure forward	2.1 bar (30 psi) at 40 °C				2.1 bar (30 psi) at 25 °C, 1.0 bar (15 psi) at 80 °C					
Max. differential pressure reverse	1.0 bar (15 psi) at 40 °C				2.1 bar (30 psi) at 25 °C					
Sterilization	2 autoclave cycles of 60 minutes at 123 °C				1 autoclave cycles of 60 minutes at 123 °C					

Part Numbers Single Layer – LCMZ (Diatomaceous earth, cellulose, synthetic resin)

DFSM-LCMZ 080 - P - 140 - T

Removal Rating [µm]	Charge	Filtration area EFA	Connector
002 = 0.02-0.2	P = Positive	002 = 23 cm ²	L = Luer (female)
004 = 0.04-0.2		003 = 270 cm ²	B = 6 mm Hose barb
020 = 0.2-0.4		005 = 540 cm ²	B = 6 mm Hose barb
040 = 0.4-0.6		011 = 0.11 m ²	T = 50 mm Tri-clamp
060 = 0.6-0.8		077 = 0.77 m ²	T = 50 mm Tri-clamp
080 = 0.8-1.5		143 = 1.43 m ²	T = 50 mm Tri-clamp
150 = 1.5-3.0			
300 = 3.0-6.0			
400 = 4.0-9.0			
500 = 5.0-12			
600 = 6.0-15			
700 = 7.0-18			
800 = 8.0-20			
900 = 9.0-30			

e.g. part number: DFSM-LCMZ080-P-140-T

Part Numbers Double Layer – LCMZ (Diatomaceous earth, cellulose, synthetic resin)

DFSM-LCMZ	004004	-	P	-	110	T																										
<table><tr><th>Removal Rating [µm]</th></tr><tr><td>001001 = 0.01-0.1</td></tr><tr><td>001002 = 0.01-0.2</td></tr><tr><td>002002 = 0.02-0.2</td></tr><tr><td>004004 = 0.04-0.4</td></tr><tr><td>004090 = 0.04-9.0</td></tr><tr><td>010090 = 0.1-9.0</td></tr><tr><td>010180 = 0.1-18</td></tr><tr><td>400180 = 4.0-18</td></tr><tr><td>600300 = 6.0-300</td></tr></table>		Removal Rating [µm]	001001 = 0.01-0.1	001002 = 0.01-0.2	002002 = 0.02-0.2	004004 = 0.04-0.4	004090 = 0.04-9.0	010090 = 0.1-9.0	010180 = 0.1-18	400180 = 4.0-18	600300 = 6.0-300	<table><tr><th>Charge</th></tr><tr><td>P = Positive</td></tr></table>		Charge	P = Positive	<table><tr><th>Filtration area EFA</th></tr><tr><td>002 = 23 cm²</td></tr><tr><td>003 = 270 cm²</td></tr><tr><td>005 = 540 cm²</td></tr><tr><td>011 = 0.11 m²</td></tr><tr><td>055 = 0.55 m²</td></tr><tr><td>110 = 1.10 m²</td></tr></table>		Filtration area EFA	002 = 23 cm²	003 = 270 cm²	005 = 540 cm²	011 = 0.11 m²	055 = 0.55 m²	110 = 1.10 m²	<table><tr><th>Connector</th></tr><tr><td>L = Luer (female)</td></tr><tr><td>B = 6 mm Hose barb</td></tr><tr><td>B = 6 mm Hose barb</td></tr><tr><td>T = 50 mm Tri-clamp</td></tr><tr><td>T = 50 mm Tri-clamp</td></tr><tr><td>T = 50 mm Tri-clamp</td></tr></table>	Connector	L = Luer (female)	B = 6 mm Hose barb	B = 6 mm Hose barb	T = 50 mm Tri-clamp	T = 50 mm Tri-clamp	T = 50 mm Tri-clamp
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e.g. part number: DFSM-LCMZ004004-P-110-T

Part Numbers Single Layer – LCMK (Cellulose, activated carbon powder, ionic wet-strength resin)

DFSM-LCMK	050	-	P	-	002	L
	Removal Rating [µm]		Charge		Filtration area EFA	Connector
	030 = 0.3-1.0		P = Positive		002 = 23 cm²	L = Luer (female)
	050 = 0.5-1.0				003 = 270 cm²	B = 6 mm Hose barb
	100 = 1.0-2.0					
	200 = 2.0-4.0					

e.g. part number: DFSM-LCMK050-P-002-L