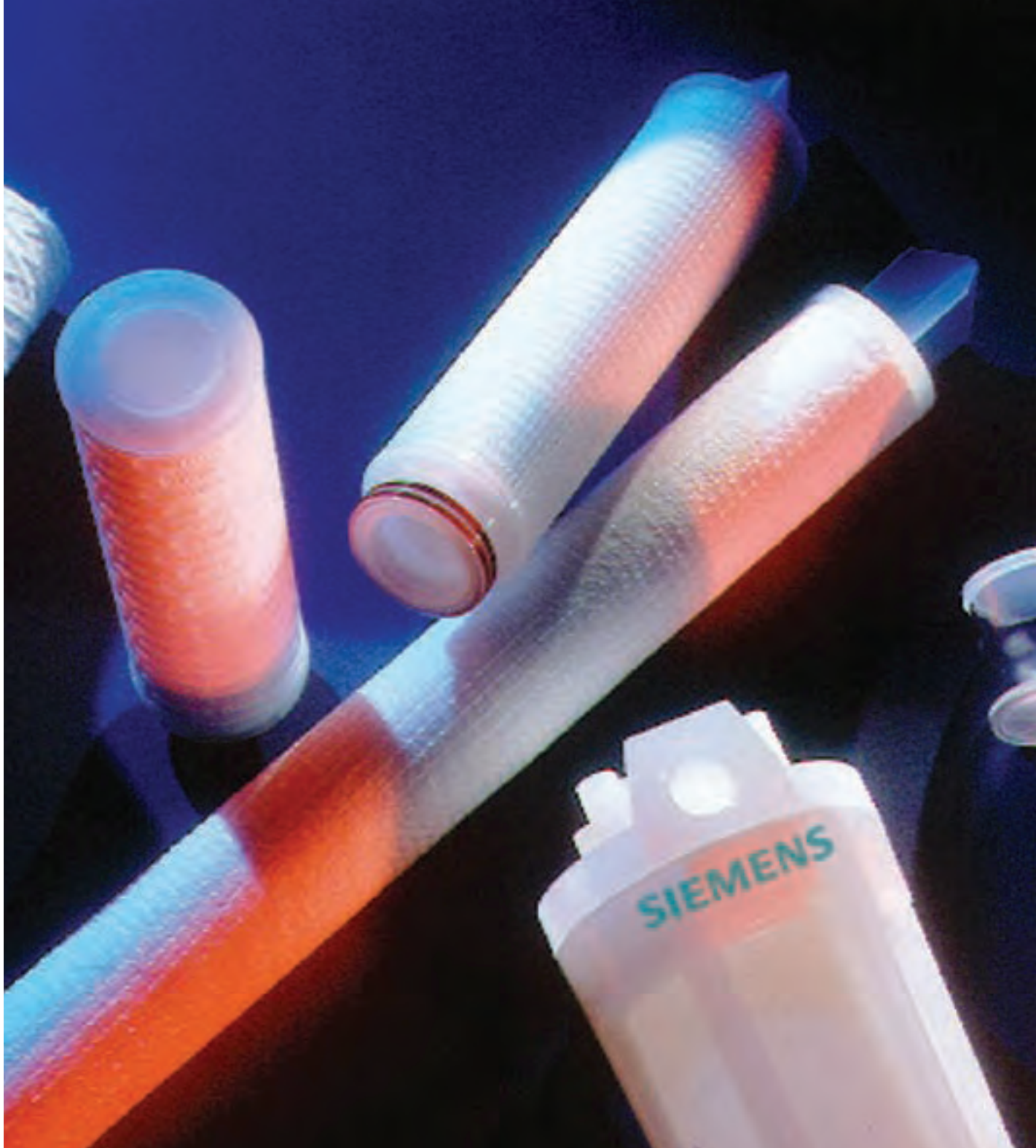




Cartridge Filters and Accessories

Water Technologies

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At Siemens Water Technologies, our mission is to provide products and services to meet your water treatment needs, any time, any place. As one of the world's largest water treatment companies, we offer a wide range of products and services, combined with experience and technical knowledge you can trust. We will deliver a solution that meets even the most stringent specifications. And, because your satisfaction is important to us, we stand behind the quality of our products and services.

Products

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Cartridge End Caps

The following table is presented as reference when ordering filter cartridges. For more detailed information, please contact our Technical Support Team at 800-875-7873 ext. 5000.

CARTRIDGE DESIGN	DESCRIPTION	CODE
 Code F Style Cartridges Double open end with flat gasket	Gaskets compressed on knife edge seal of housing	F
 Code 10 Style Cartridges Single Open End with 1-120 Internal O-Ring at Open End	Single O-ring located inside the cartridge	10
 Code O Style Cartridges Single Open End with 2-222 O-Ring with Seal	O-rings are located externally on the cartridge	0
 Code 5 Style Cartridges Single Open End 2-222 O-Ring Seal and Spear End Assembly	O-rings are located externally on the cartridge	5
 Code 7 Style Cartridges Single Open End with 2-226 O-Ring Locking Seal and Spear End Assembly	O-rings are located externally on the cartridge. The adapter locks into the housing with spear assembly	7
 Code K SOE plastic spring assembly, saw cut end	Knife edge SOE with spring seal	K





Granular Activated Carbon Filter Cartridge

- Composed of lignite-based granular activated carbon in an upflow cartridge design for removing chlorine feed water
- Cartridge is designed to allow water to enter the bottom of the cartridge, then filtered through the entire carbon bed before exiting at the top to maximize the contact time and therefore the adsorption
- Internal expansion pad maintains a tight, compact column to minimize channeling or bypass
- Nominal 20 micron post-filter reduces carbon fines as well as other suspended particles

SPECIFICATIONS

10" Cartridge		20" Cartridge
Dimensions		
Diameter (OD)	2.875" (7.3 cm)	2.875" (7.3 cm)
Length (in)	9.75" (24.8 cm)	20" (50.8 cm)
Recommended Water Flow Rates		
10" Cartridge Maximum	1.0 gpm (3.8 lpm)	2.0 gpm (7.6 lpm)
Materials		
Filter Media	Granular, Activated Carbon	
Post filter	Spun Polypropylene	
Expansion Pad Foam	Polyether/Polyurethane	
Outer Casing	Polystyrene	
End Caps	Polystyrene	
Gaskets	Buna-N	
Operating Parameters		
Temperature Range	32 to 125°F (0 – 52°C)	
Carbon Volume	12 ounces of granular carbon per 10" length	

ORDERING INFORMATION

Catalog Number	Description
FCGC	Filter cartridge granular carbon
F	Cartridge Code: F = flat gasket seal
XX	Length (in): 10 = 10, 20 = 20
20	Nominal micron retention rating

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it.

Pulverized Activated Carbon Filter Cartridge

- Composed of pre-washed, finely pulverized activated carbon, encapsulated in a depth filtration media of highly purified alpha-cellulose and synthetic fibers for removing chlorine
- Depth-type cartridge ensures superior dirt holding capacity in sediment-laden waters to minimize premature exhaustion while it is being carbon treated
- Design includes a thermally bonded outer, nominal 10 micron pre-filtration layer that provides for depth filtration in one pass without carbon channeling or media migration



SPECIFICATIONS

	10" Cartridge	20" Cartridge
Dimensions		
Diameter (OD)	2.75" (7.0 cm)	2.75" (7.0 cm)
Length (in)	9.75" (24.8 cm)	20" (50.8 cm)
Recommended Water Flow Rates		
Maximum	1.0 gpm (3.8 lpm)	2.0 gpm (7.6 lpm)
Materials		
Primary filter media	Pulverized, Activated Carbon	
Inner Layer Media	Alpha Cellulose and Synthetic Fibers	
Inner Core	Polypropylene	
Outer Netting	Polyolefin	
End Caps	Low Durometer Polyethylene	
Operating Parameters		
Temperature Range . . .	32 to 125°F (0 – 52°C)	
Carbon Volume		
.	3.7 ounces of pulverized carbon per 10" length	

ORDERING INFORMATION

Catalog Number	Description
FCPC	Filter cartridge pulverized carbon
F	Cartridge Code: F = double open end w/flat gasket seal
XX	Length (in): 10 = 10, 20 = 20
10	Nominal micron retention rating

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it.



DI GARD™ String Wound Prefiltration Cartridges

- Designed for a variety of prefiltration applications such as SDI (service deionization), reverse osmosis, and CDI® (Continuous Deionization) systems
- String wound type filter with your choice of cotton, industrial or surfactant-free polypropylene string over a polypropylene core
- Large void volume design for low-cost, reliable filtration performance with high contaminant holding capacity
- Continuous filter winding in 20-, 30-, and 40-inch lengths prevents by-passing or excessive pressure drops at the seams
- Gasketed end caps on 0.5 µm rated filters for positive sealing that eliminates by-passing
- Surfactant-free FCPX style filter meets USP Class VI Biological Tests for Plastics requirements

SPECIFICATIONS

Dimensions

Diameter (OD)
Length (in)

2.5" (6.5 cm)
9.75, 10, 19.5, 20, 29.25, 30, 40

Materials

FCCS
FCPS
FCPX

FDA-Listed bleached white cotton fiber string media with polypropylene core
FDA-Listed polypropylene fiber string media with polypropylene core
Surfactant-free polypropylene fiber string media with polypropylene core
NOTE: Code F cartridges (0.5 µm) have santophrene end seals.

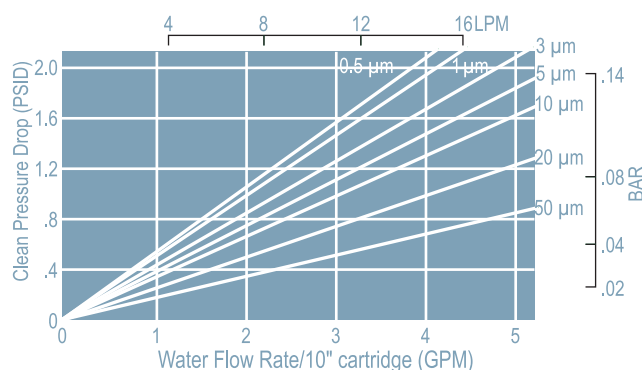
Operating Parameters

Maximum Temperature
Maximum Differential Pressure @ 25°C
Micron Ratings
Filtration Efficiency

140°F (60°C)
50 psi (3.4 bar)
0.5, 1, 3, 5, 10, 20, 50 Microns
Nominal 90%
5.0 gpm/10" length (18.9 lpm/10" length)

Recommended Water Flow Rates . .

FLOW RATE vs. INITIAL CLEAN PRESSURE DROP



ORDERING INFORMATION

Catalog Number	Description
FCXX	FCCS = FDA-Listed bleached cotton string fiber FCPS = FDA-Listed polypropylene string fiber FCPX = surfactant-free polypropylene string fiber cartridge
F	Cartridge Code: F = double open end
XX	Length (in): 09 = 9.75, 10 = 10, 19 = 19.5, 20 = 20, 29 = 29.25, 30 = 30, 40 = 40
XX	Micron Rating: S5 = 0.5µm, 01 = 1 µm, 03 = 3 µm, 05 = 5 µm, 10 = 10 µm, 20 = 20 µm, 50 = 50 µm

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.



ROGARD™ Graded Density Polypropylene Media Filter Cartridge

- Designed for a variety of prefiltration applications such as SDI (service deionization), reverse osmosis and CDI® (Continuous Deionization) systems
- Graded density melt spun polypropylene media design for exceptional throughput, with high contaminant holding capacity
- Gasketed end caps on 1, 3 and 5 µm rated filters for positive sealing that eliminates bypass contamination
- Manufactured from materials which are listed for food contact applications in Title 21 of the U.S. Code of Federal Regulations. Product in compliance with EU Directive 2002/72/EC for plastic in food contact (in simulants A, B, C, and D).
- All polypropylene components meet the specifications for biological safety as per the USP for Class VI-121 °C plastics (gaskets/O-rings excluded).
- FCRO Series filter cartridges are free of surfactants, anti-static agents, binders, and adhesives
- NSF Certified



SPECIFICATIONS

Dimensions

Diameter (OD)	2.5" (6.5 cm)
Length (in)	9.75, 10, 12, 19.5, 20, 30, 31, 40

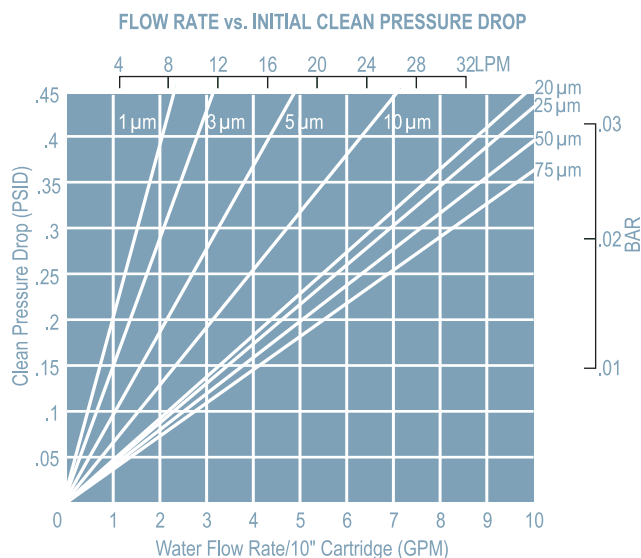
Materials

Media	Melt blown polypropylene
Core	Integral polypropylene core
O-Rings	Silicone o-rings
Gaskets	Santoprene end seals

Operating Parameters

Maximum Temperature	140°F @ 25 psid
Maximum Differential Pressure @ 25°C	50 psi (3.4 bar)
Micron Ratings	1, 3, 5, 10, 20, 25, 50, 75 microns
Filtration Efficiency	Nominal 90%

Recommended Water Flow Rate 5.0 gpm/10" length (18.9 lpm/10" length)



ORDERING INFORMATION

Catalog Number and Description

FCRO	Rogard II all polypropylene depth cartridge
X	Cartridge Code: F = double open end (1&5 µm w/gasket) K = knife edge seal with spring seal O = 2-222 o-rings (12&20", 1&5 µm only) N = double open end (1, 3 & 5 µm – no gasket)
XX	Length (in): 09 = 9.75, 10 = 10, 12 = 12, 19 = 19.5, 20 = 20, 30 = 30, 31 = 31, 40 = 40
XX	Micron Rating: 01 = 1 µm, 03 = 3 µm, 05 = 5 µm, 10 = 10 µm, 20 = 20 µm, 25 = 25 µm, 50 = 50 µm, 75 = 75 µm

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.



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Prepure DP™ Graded Density Polypropylene Depth Media Filter Cartridge

- Composed of graded density melt blown polypropylene depth media for high efficiency prefiltration and post-filtration of DI resin applications
- Prepure DP™ filtration cartridges feature high contaminant loading due to graded density depth filtration media construction
- FDA Listed Materials - Manufactured from materials which are listed for food contact applications in Title 21 of the U.S. Code of Federal Regulations
- All components meet the specifications for biological safety as per the USP for Class VI-121 °C plastics (gaskets/O-rings excluded).
- Virgin polypropylene construction with fusion welding minimizes extractables

SPECIFICATIONS

Dimensions

Diameter (OD).....	2.6" (6.6 cm)
Length (in).....	9.75, 10, 20, 30, 40

Materials

Cartridge.....	Polypropylene caps, core and cage
Media.....	Non-woven melt blown polypropylene
Seals.....	Silicone o-rings and gaskets

Operating Parameters

Maximum Temperature.....	180°F (82°C) @ 15 psid
Maximum Differential Pressure @ 20°C.....	75 psid (5.2 bard)
Filtration Efficiency.....	Nominal 90%

Recommended Water Flow Rates

0.5 – 5 micron.....	2.0 gpm/10" length (7.6 lpm/10" length)
10 – 50 micron.....	5.0 gpm/10" length (18.9 lpm/10" length)

Sanitizing Agents.....

Chlorine or hydrogen peroxide

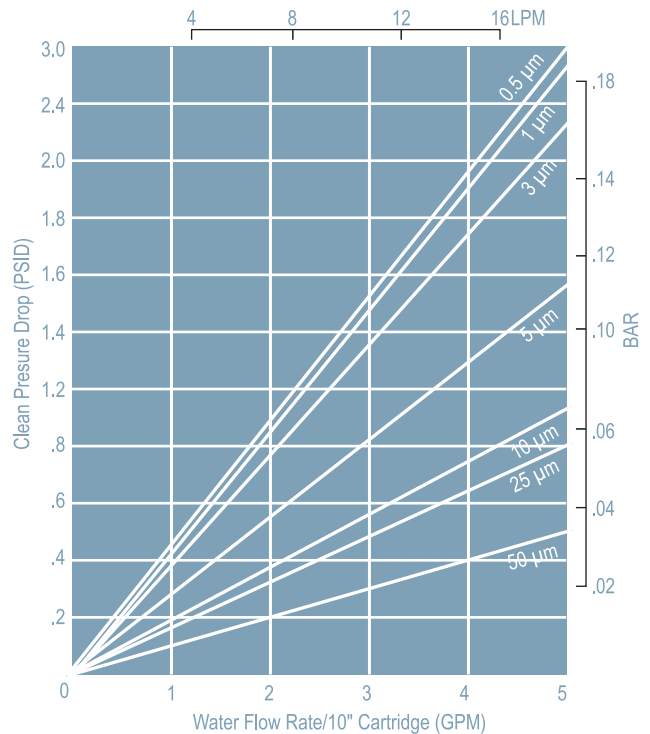
ORDERING INFORMATION

Catalog Number and Description

FCDP.....	All polypropylene depth filter cartridge
X.....	Cartridge Code: 0 = 2-222 o-rings 7 = 2-226 o-rings w/spear 1 = single open end w/internal o-ring F = double open end w/flat gasket seal
XX.....	Length (in): 09 = 9.75, 10 = 10, 20 = 20, 30 = 30, 40 = 40
XX.....	Micron Rating: S5 = 0.5 µm, 01 = 1 µm, 03 = 3 µm, 05 = 5 µm, 10 = 10 µm, 25 = 25 µm, 50 = 50 µm

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.

FLOW RATE vs. INITIAL CLEAN PRESSURE DROP

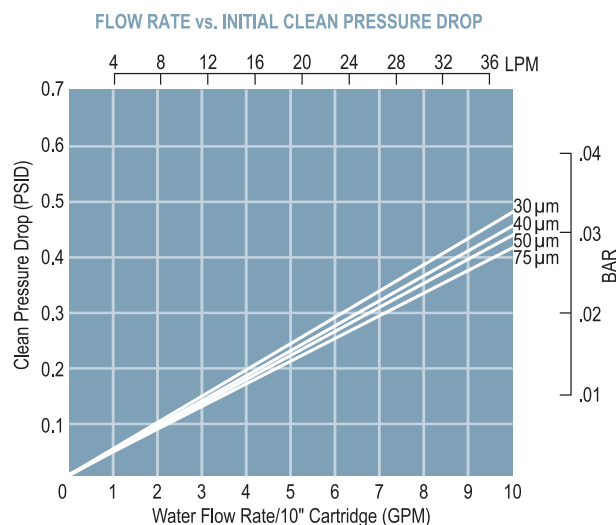
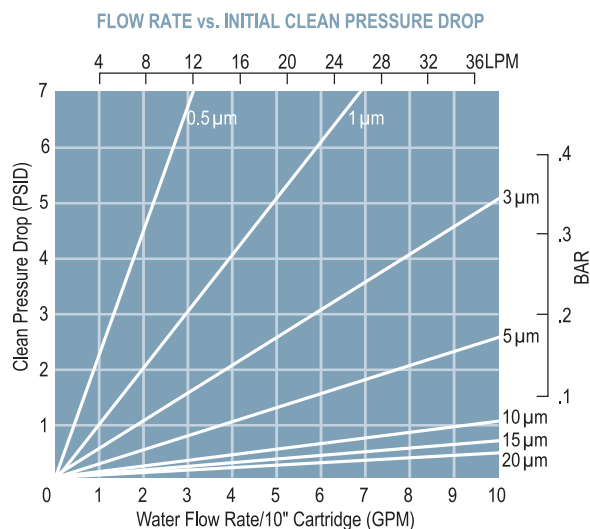


Media Grade	Nominal	99.9% Abs
S5	.5	1
1	1	3
3	3	5
5	5	10
10	10	20
25	25	40
50	50	70



NT Series Graded Pore Polypropylene Depth Filter Cartridge

- Designed to deliver precision prefiltration through the patented advanced melt blown structure that incorporates large diameter fibers for strength while maintaining small fibers for filtration
- High purity, 100% polypropylene construction is free of surfactants, binders and adhesives
- FDA Listed Materials - Manufactured from materials listed for food contact applications in Title 21 of the U.S. Code of Federal Regulations. Product (3 micron and higher) in compliance with EU Directive 2002/72/EC for plastic in food contact (in simulants A, B, C, and D).
- Toxicity - All polypropylene components meet the specifications for biological safety as per the USP for Class VI-121°C plastics (gaskets/O-rings excluded).



SPECIFICATIONS

Dimensions

Diameter (OD)
Length (in)

2.5" (6.5 cm)
9.75, 10, 20, 30, 40

Materials

Cartridge
Media
Seals

Polypropylene caps and core
CoLD® fiber melt blown polypropylene
Silicone o-rings and Santoprene® gaskets

Operating Parameters

Maximum Temperature

0.5-10 µm:

15 psid (1.03 bard) @ 180°F (82°C)
25 psid (1.72 bard) @ 150°F (66°C)
60 psid (4.14 bard) @ 86°F (30°C)
25 psid (1.72 bard) @ 140°F (60°C)
50 psid (3.45 bard) @ ambient
60 psi (4.1 bar)
Nominal 90%

15-120 µm:

Maximum Differential Pressure @ 30°C
Filtration Efficiency

Recommended Water Flow Rates

0.5 – 3 micron

5 – 75 micron

2.0 gpm/10" length (7.6 lpm/10" length)
5.0 gpm/10" length (18.9 lpm/10" length)

Sanitizing Agents

Chlorine, hydrogen peroxide

Autoclaving:

Single open end FCNT Series filter cartridges can be autoclaved for 30 minutes at 250°F (121°C) under no end load conditions. However, filter cartridges should be allowed to cool to normal system operating temperatures prior to use.

Steam Sterilization:

Not recommended.

ORDERING INFORMATION

Catalog Number and Description

FCNT	Polypropylene CoLD® depth filter cartridge
X	Cartridge Code: 0 = 2-222 o-rings 7 = 2-226 o-ring locking tabs w/spear 1 = single open end w/internal o-ring N = double open end (0.5 – 5 mm – no gasket)
XX	Length (in): 09 = 9.75, 10 = 10, 20 = 20, 30 = 30, 40 = 40
XX	Micron Rating: S5 = 0.5 µm, 01 = 1 µm, 03 = 3 µm, 05 = 5 µm, 10 = 10 µm, 15 = 15 µm, 20 = 20 µm, 30 = 30 µm, 40 = 40 µm, 50 = 50 µm, 75 = 75 µm

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.



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Postpure PP™ Graded Density Pleated Polypropylene Depth Media Filter Cartridge

- Composed of graded-density, pleated, polypropylene depth media for high efficiency postfiltration of DI resin applications
- FDA Listed Materials - Manufactured from materials which are FDA listed for food contact applications in Title 21 of the U.S. Code of Federal Regulations.
- Toxicity - All polypropylene components meet the specifications for biological safety as per the USP for Class VI-121 °C plastics (gaskets/O-rings excluded).
- Cartridges are free of resins, binders and adhesives.

SPECIFICATIONS

Dimensions

Diameter (OD)	2.6" (6.6 cm)
Length (in)	10, 20, 30

Materials

Cartridge	Polypropylene caps, core and cage
Media	Pleated, non-woven melt blown polypropylene
Seals	Silicone o-rings and gaskets

Operating Parameters

Maximum Temperature	150°F (65°C) @ 40 psid (2.8 bard)
Maximum Differential Pressure @ 20°C	75 psid (5.1 bard)
Filtration Efficiency	nominal 90%

Recommended Water Flow Rates

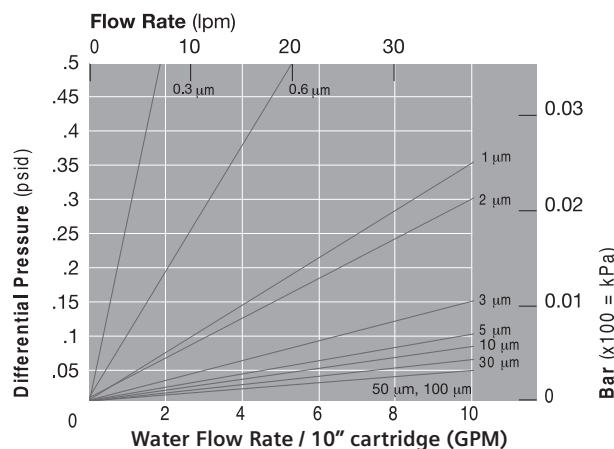
0.3 – 1 micron	2.0 gpm/10" length (7.6 lpm/10" length)
3 – 30 micron	8.0 gpm/10" length (30.1 lpm/10" length)

Sanitizing Agents

Chlorine, hydrogen peroxide, in-line with hot water (82°C) for one hour, autoclaved for 20 minutes at 121°C under no load conditions.

Sterilization

Multiple autoclaving for 30 minutes at 250°F (121°C) under no end load conditions. In-line steam sterilization is not recommended. May be in-line sanitized with hot water at 180°F (82°C) for 1 hour.



ORDERING INFORMATION

Catalog Number and Description

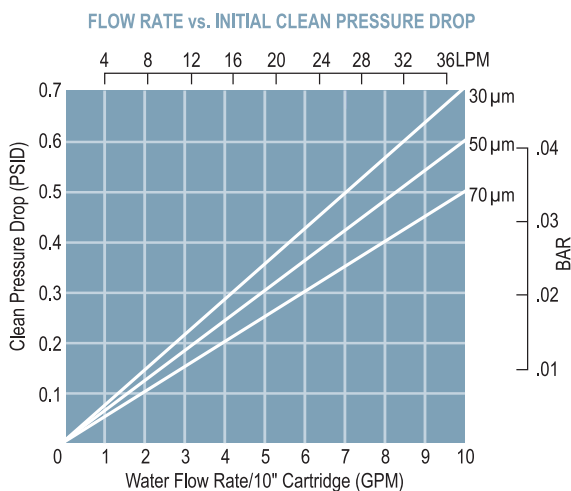
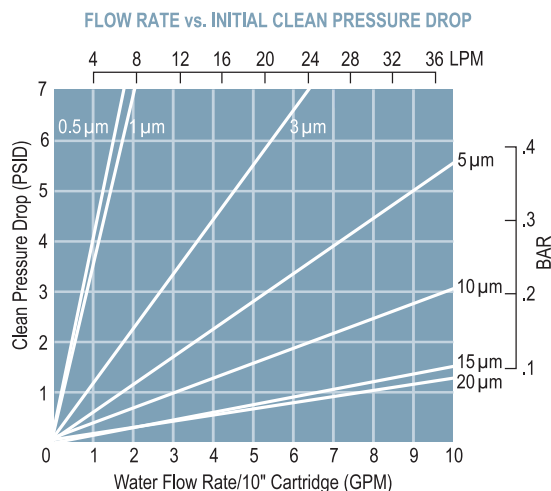
FCPP	All polypropylene, pleated, nominal depth filter cartridge
X	Cartridge Code: 0 = 2-222 o-rings 5 = 2-222 w/spear 7 = 2-226 o-rings locking tabs w/spear 1 = single open end w/internal o-ring F = double open end w/flat gasket seal
XX	Length (in): 10 = 10, 20 = 20, 30 = 30
XX	Micron Rating: S3 = 0.3 μm, S6 = 0.6 μm, 01 = 1 μm, 03 = 3 μm, 05 = 5 μm, 10 = 10 μm, 30 = 30 μm

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.



NA Series Absolute Rated Polypropylene Depth Filter Cartridge

- Absolute filtration with sharp particle cutoffs deliver precise removal efficiencies
- Patented melt blown structure provides outstanding retention efficiency, mechanical strength, and long on-stream life
- High purity, 100% polypropylene construction is free of surfactants, binders and adhesives making these cartridges ideal for use in food and beverage applications
- FDA Listed Materials - Manufactured from materials which are listed for food contact applications in Title 21 of the U.S. Code of Federal Regulations. Product (5 micron and higher) in compliance with EU Directive 2002/72/EC for plastic in food contact (in simulants A, B, C, and D).
- Toxicity - All polypropylene components meet the specifications for biological safety as per the USP for Class VI-121 °C plastics (gaskets/O-rings excluded).



SPECIFICATIONS

Dimensions

Diameter (OD)
Length (in)

2.5" (6.5 cm)
9.75, 10, 20, 30, 40

Materials

Cartridge
Media
Seals

Polypropylene caps and core
CoLD® fiber melt blown polypropylene
Silicone o-rings and gaskets

Operating Parameters

Maximum Temperature
0.5-20 µm:

30-120 µm:

15 psid (1.03 bard) @ 180°F (82°C)
25 psid (1.72 bard) @ 150°F (66°C)
60 psid (4.14 bard) @ 86°F (30°C)
25 psid (1.72 bard) @ 140°F (60°C)
50 psid (3.45 bard) @ ambient

Maximum Differential Pressure @ 30°C

60 psi (4.1 bar)

Filtration Efficiency

Absolute (> 99.9% Retention Rating by ASTM F-795 Test)

Recommended Water Flow Rates

0.5 – 5 micron
10 – 70 micron

2.0 gpm/10" length (7.6 lpm/10" length)
5.0 gpm/10" length (18.9 lpm/10" length)

Sanitizing Agents

.

Chlorine, hydrogen peroxide

Autoclaving

Single open end Nexis® Series filter cartridges can be autoclaved for 30 minutes at 250°F (121°C) under no end load conditions. However, filter cartridges should be allowed to cool to normal system operating temperatures prior to use.

Steam Sterilization

Not recommended

ORDERING INFORMATION

Catalog Number and Description

FCNA	Absolute rated CoLD depth filter cartridge
X	Cartridge Code: 0 = 2-222 o-rings 7 = 2-226 o-rings w/spear 1 = single open end w/ internal o-ring F = double open end w/flat gasket seal 5 = 2-222 o-rings w/spear
XX	Length (in): 09 = 9.75, 10 = 10, 20 = 20, 30 = 30, 40 = 40
XX	Micron Rating: S5 = 0.5 µm, 01 = 1 µm, 03 = 3 µm, 05 = 5 µm, 10 = 10 µm, 15 = 15 µm, 20 = 20 µm, 30 = 30 µm, 50 = 50 µm, 70 = 70 µm



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To determine your catalog order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.



WN Series Pleated Polysulfone Membrane Filter Cartridge

- Composed of pleated highly asymmetric polysulfone membrane over a non-woven polypropylene support layer
- For high flow rates and low pressure drops, absolute rated filters are designed for postfiltration in high purity water applications
- High-purity construction materials are factory rinsed with DI water for quick on-stream rinse up with a minimum of throughput
- Meets criteria for USP Class VI Biological tests for plastics, ensuring that no surfactants or coatings interfere with the application
- FDA listed materials - manufactured from materials which are FDA listed for food contact applications in Title 21 of the U.S. code of Federal Regulations

SPECIFICATIONS

Dimensions

Diameter (OD)	2.6" (6.6 cm)
Length (in)	9.75, 10, 20, 30, 40

Materials

Cartridge	Polypropylene caps, core and cage
Media	Single layer asymmetric hydrophilic polysulfone
Seals	Silicone o-rings and gaskets

Operating Parameters

Maximum Temperature	180°F (82°C) @ 50 psid (3.4 bard)
Maximum Differential Pressure @ 20°C	80 psi (5.5 bar)
Filtration Efficiency	Absolute (> 99.9% Retention Rating by Latex Bead Challenge)

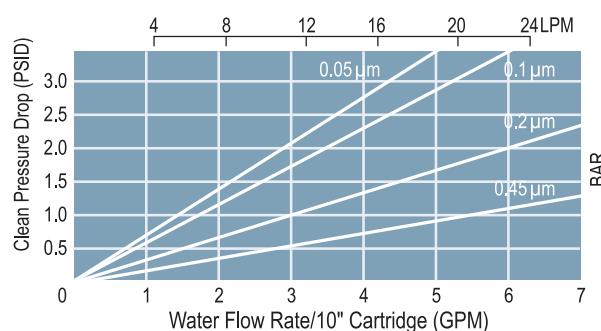
Recommended Water Flow Rates

0.05 micron	1.3 gpm/10" length (4.9 lpm/10" length)
0.1 micron	1.7 gpm/10" length (6.4 lpm/10" length)
0.2 micron	3.0 gpm/10" length (11.3 lpm/10" length)
0.45 micron	5.5 gpm/10" length (20.8 lpm/10" length)

Sanitizing Agents

	5% Chlorine, 3% hydrogen peroxide
--	-----------------------------------

FLOW RATE vs. INITIAL CLEAN PRESSURE DROP



ORDERING INFORMATION

Catalog Number and Description

FCWN	Filter cartridge single layer polysulfone
X	Cartridge Code: 0 = 2-222 o-rings 5 = 2-222 o-rings w/spear 1 = single open end w/ internal o-ring 7 = 2-226 o-rings w/locking tabs/spear end F = double open end w/flat gasket seal
XX	Length (in): 09 = 9.75, 10 = 10, 20 = 20, 30 = 30, 40 = 40
XX(X)	Micron Rating: S05 = 0.05 μm, S1 = 0.1 μm, S2 = 0.2 μm, S4 = 0.45 μm

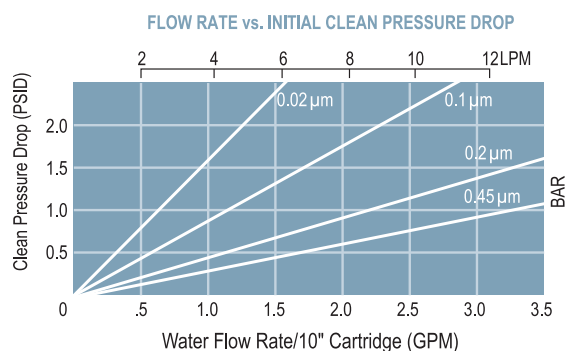
To determine your catalog order number, replace the X with one of the numbered or lettered options beside it.

Note: Not all part number combinations are available; consult Technical Support for assistance.



WE Series Pleated Polysulfone Membrane Filter Cartridge

- Composed of a double layer of integrity testable, highly asymmetric polysulfone membrane. These absolute rated filters offers superior bacteria and particle removal for high efficiency postfiltration for critical high purity water applications
- Long on stream life, high flow rates and low pressure drops result from the membrane asymmetry
- High-purity construction materials are factory flushed with DI water for quick on-stream rinse-up with a minimum of throughput
- All polypropylene hardware and thermal welding minimizes extractables
- All materials are FDA listed for contact with food and beverages



(Rinse in @ 5-6 gpm per 10" to ensure removal of air and microbubbles between the membrane layers, especially with 0.02 μm . Recommend flow per 10" is 2 gpm.)

SPECIFICATIONS

Dimensions

Diameter (OD)

Length (in)

Materials

Cartridge

Media

polysulfone

Seals

Operating Parameters

Maximum Operating Temperature

Maximum Forward Differential Pressure

.

.

Filtration Efficiency

Sanitizing Agents

.

Integrity Test

Pore Size

Diffusional Flow Values (100% H₂O) (cc/min) @ Test pressure per 10" length

0.02 μm

0.1 μm

0.2 μm

0.45 μm

2.6" (6.6 cm)

9.75, 10, 20, 30, 40

Polypropylene caps, core and cage

Double layer asymmetric hydrophilic

Silicone o-rings and gaskets

86°F / 30°C (158°F / 70°C)

80 psid @ 68°F / 5.5 bar @ 20°C

20 psid @ 158°F / 1.4 bar @ 70°C

99.9% Absolute

5% Chlorine or 3% hydrogen peroxide

Diffusional Flow (cc/min) @ Test Pressure per 10" length

< 30 cm³/min @ 50 psig / 3.4 bar

< 24 cm³/min @ 25 psig / 1.7 bar

< 20 cm³/min @ 20 psig / 1.4 bar

< 15 cm³/min @ 15 psig / 1.0 bar

ORDERING INFORMATION

Catalog Number:

FCWE Filter cartridge double layer polysulfone

X

Cartridge Code:

0 = 2-222 o-rings

5 = 2-222 o-rings w/spear

1 = single open end w/ internal o-rings

7 = 2-226 o-rings w/locking tabs/spear end

F = double open end w/flat gasket seal

XX

Length (in): 09 = 9.75, 10 = 10, 20 = 20, 30 = 30, 40 = 40

XX(X)

Micron Rating: S02 = 0.02 μm , S1 = 0.1 μm , S2 = 0.2 μm , S4 = 0.45 μm

Note: Not all part number combinations are available; consult Technical Support for assistance.

To determine your catalog order number, replace the X with one of the numbered/lettered options beside it.



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LENNTECH



DI Series Pleated Hydrophilic PVDF Media Pharmaceutical/Biotech Grade Filter Cartridge

- Composed of a validatable, hydrophilic, PVDF membrane. Offering a high velocity DI water flush for quick rinse-up with no downstream contamination.
- These absolute rated filters offer superior bacteria and particle removal for critical high purity postfiltration applications
- Filters have single PVDF membrane with two layers of polypropylene support media to ensure absolute bacteria retention with typical LRV >8
- The all PVDF membrane can be sanitized with chlorine, hydrogen peroxide or steam
- Virgin polypropylene construction with fusion welding minimizes extractables
- Cartridges are 100% integrity tested to verify absolute sub-micron particle retention

SPECIFICATIONS

Dimensions

Diameter (OD)	2.75" (7.0 cm)
Length (in)	10, 20, 30, 40

Materials

Cartridge	Polypropylene caps, core and cage
Media	Hydrophilic PVDF
Seals	Silicone o-rings and gaskets

Operating Parameters

Maximum Temperature	176°F (80°C) @ 25 psid (1.7 bar)
Maximum Differential Pressure @ 25°C ..	50 psi (3.4 bar)
Filtration Rating	100% Absolute

Recommended Water Flow Rates

0.1 micron	0.5 gpm/10" length (1.9 lpm/10" length)
0.2 micron	1.0 gpm/10" length (3.8 lpm/10" length)

Sanitizing Agents

Chlorine, hydrogen peroxide

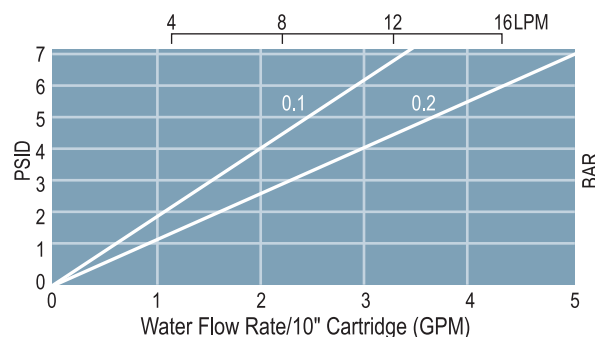
Sterilization

30 SIP cycles of 30 min @ 121°C; 30 autoclave cycles of 60 min @ 121°C

Integrity Test

Pore Size	Minimum Water Bubble Point @ 23°C	Diffusional Flow (cc/min) @ Test Pressure per 10" length in water
0.1 µm	≥ 70 psig (≥ 4.8 bar)	≤ 20 @ 56 psig (3.8 bar)
0.2 µm	≥ 45 psig (≥ 3.1 bar)	≤ 13.3 @ 40 psig (2.8 bar)

FLOW RATE vs. INITIAL CLEAN PRESSURE DROP



ORDERING INFORMATION

Catalog Number and Description

FCDI	Filter cartridge Water DI
X	Cartridge Code: 0 = 2-222 o-rings 5 = 2-222 o-rings w/spear 7 = 2-226 o-rings w/locking tabs/spear end F = double open end w/flat gasket seal
XX	Length (in): 10 = 10, 20 = 20, 30 = 30, 40 = 40
XX	Micron Rating: S1 = 0.1 µm, S2 = 0.2 µm

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.



PV Series Pleated Hydrophilic PVDF Media Pharmaceutical Grade Filter Cartridge



- Cartridge is a validated, pleated hydrophilic PVDF membrane over a non-woven polypropylene support layer
- Code 0, Code 5, and Code 7 configurations are available in 10, 20, 30, and 40-in lengths that are 100% tested in manufacturing to ensure absolute bacteria retention with typical titre reduction of $>10^7/\text{cm}^2$
- Quantitative retention of 10^7 CFU/cm² *Brevundimonas diminuta* ATCC® 19146 per ASTM methodology
- Component materials meet the criteria of the USP <88> Reactivity Test for Class VI Plastics. These products meet the requirements of the USP <88> Safety Test, utilizing a 0.9% sodium chloride extraction
- Component materials meet the “non-fiber releasing” criteria as defined in 21 CFR 210.3 (b) (6)
- Will meet the USP Oxidizable Substances Test requirements after a water flush of ≤ 1 L

SPECIFICATIONS

Dimensions

Diameter (OD)	2.75" (7.0 cm)
Length (in)	10, 20, 30, 40

Materials

Cartridge	Polypropylene caps, core and cage
Media	PVDF
Seals	Silicone o-rings

Operating Parameters

Maximum Temperature	176°F (80°C) @ 25 psid (1.7 bar)
Maximum Differential Pressure @ 25°C	80 psi (5.5 bar)
Filtration Rating	100% Absolute
Toxicity	Non-toxic by USP Class VI biological test for plastics
Validation	Quantitative Retention of 10^7 CFU/cm ² per ASTM methodology

Recommended Water Flow Rates

0.2 μm	1.0 gpm/10" length (3.8 lpm/10" length)
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Sanitizing Agents

.	Chlorine, hydrogen peroxide
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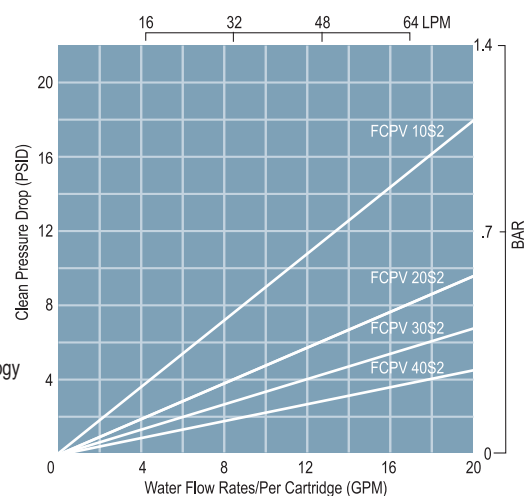
Sterilization

.	30 SIP cycles of 30 min @ 135°C; 30 autoclave cycles of 60 min @ 126°C
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Integrity Test

Pore Size	Minimum Water	Diffusional Flow (cc/min)
0.2 μm	Bubble Point @ 23°C	@ Test Pressure per 10" length
	≥ 50 psig (≥ 3.45 bar)	≤ 13.3 @ 40 psig (3.1 bar)

FLOW RATE vs. INITIAL CLEAN PRESSURE DROP



ORDERING INFORMATION

Catalog Number and Description

FCPV	Filter cartridge pharmaceutical/validated
X	Cartridge Code: 0 = 2-222 o-rings 5 = 2-222 o-rings w/spear end 7 = 2-226 o-rings w/locking tabs/spear end
XX	Length (in): 10 = 10, 20 = 20, 30 = 30
S2	Micron Rating: S2 = 0.2 μm

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it.
Note: Not all part number combinations are available; consult Technical Support for assistance.



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VH Series Pleated PES Media Pharmaceutical Grade Filter Cartridge

- Cartridge is a validated, pleated polyethersulphone membrane over a non-woven polyester support layer
- Code 0, Code 5, Code 7 and Code 10 configurations are available in 10, 20 30, and 40-in lengths that are 100% tested in manufacturing to ensure absolute bacteria retention
- Materials conform to the relevant requirements of 21CFR Part 177 and current USP Plastics Class VI-121 °C and ISO10993 equivalents
- FCVH Series Sterilizing Grade 0.2 micron filters are validated by bacterial challenge testing to methods specified in ASTM F838-83 (10^7 organisms/cm² minimum) with typical in-house challenge levels being 10^{11} per 10 inch module for *Brevundimonas diminuta*
- Contain no surfactants or coatings to interfere with your application, and the thermo-plastic construction process minimizes extractables.

SPECIFICATIONS

Dimensions

Diameter (OD)
Length (in)

2.75" (7.0 cm)
10, 20, 30, 40

Materials

Cartridge

Polypropylene, core and cage, nylon endcaps
with 316LSS insert
Polyester
Polyethersulphone
Silicone o-rings

Support
Media
Seals

Operating Parameters

Maximum Temperature
Maximum Differential Pressure @ 25°C
Filtration Rating
Toxicity
Validation

176°F (80°C) @ 29 psid (2.0 bard)
72 psi (5.0 bar)
100% Absolute
Non-toxic by USP Class VI biological test for plastics
Microbially retentive and validated to ASTM F838-83
methodology

Recommended Water Flow Rates

0.1 µm
0.2 µm
0.45 µm

1.8 gpm/10" length (2.3 lpm/10" length)
2.0 gpm/10" length (7.6 lpm/10" length)
3.0 gpm/10" length (11.4 lpm/10" length)

Sanitizing Agents

Chlorine, hydrogen peroxide, autoclaved for 20 minutes at 121°C under no load conditions.

Sterilization

FCVH cartridges can be repeatedly in-situ steam sterilized or autoclaved up to 130°C (266°F). They can be sanitized with hot water at up to 90°C (194°F) and are compatible with a wide range of chemicals.

Integrity Test

Pore Size	Minimum Water Bubble Point	Diffusional Flow (cc/min) @ Test Pressure per 10" length
0.1 µm	≥ 34.2 psig*	≤ 27 @ 70 psig (4.9 bar)
0.2 µm	≥ 49 psig	≤ 16 @ 40 psig (2.7 bar)
0.45 µm	≥ 36 psig	≤ 16 @ 25 psig (1.7 bar)

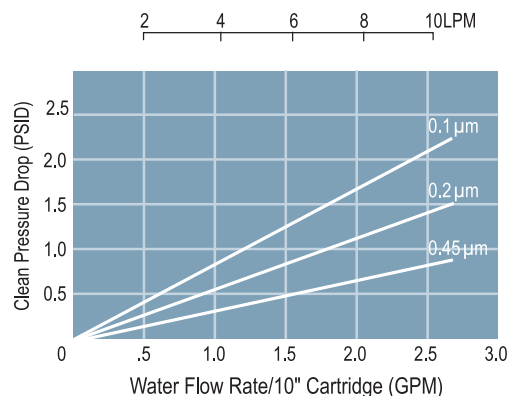
* 60/40 IPA water test solution

ORDERING INFORMATION

Catalog Number and Description

FCVH	Filter cartridge pharmaceutical/validated
X	Cartridge Code: 0 = 2-222 o-rings 1 = single open end w/internal o-ring 5 = 2-222 o-rings w/spear end 7 = 2-226 o-rings w/locking tabs/spear end
XX	Length (in): 10 = 10, 20 = 20, 30 = 30, 40 = 40
XX	Micron Rating: S1 = 0.1 µm, S2 = 0.2 µm, S4 = 0.45 µm

FLOW RATE vs. INITIAL CLEAN PRESSURE DROP



LENNTECH

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it.
Note: Not all part number combinations are available; consult Technical Support for assistance.



UF Series Hollow Fiber Polysulfone Media Filter Cartridge

- Composed of validatable hollow fiber polysulfone media with polypropylene hardware
- These absolute rated filters offer excellent bacteria, particle and pyrogen removal for critical pharmaceutical and life science applications, at economical costs
- Code 0, Code 5, and Code 7 configurations are available in 10, 20, 30 and 40-in lengths
- Meet current USP Class VI biological test for plastics, with a validation certificate available
- Contain no surfactants or coatings to interfere with your application, and thermo-plastic construction process minimizes extractables
- Hollow fiber construction ensures strength, while exhibiting low pressure drop and exceptionally high flow rates
- Multi-tube applications require special housings - contact Technical Support



SPECIFICATIONS

Dimensions

Diameter (OD)	2.9" (7.4 cm)
Length (in)	10, 20, 30, 40

Materials

Cartridge	Polypropylene caps and cage, polyurethane end sealant
Media	Polysulfone fibers
Seals	Silicone o-rings

Operating Parameters

Maximum Temperature	185°F (85°C) @ 10 psid (.7 bar)
Maximum Differential Pressure	30 psi (2 bar) @ 25°C
Filtration Rating	100% Absolute
Toxicity	Non-toxic by USP Class VI biological test for plastics
Validation	Diffusive flow test methods

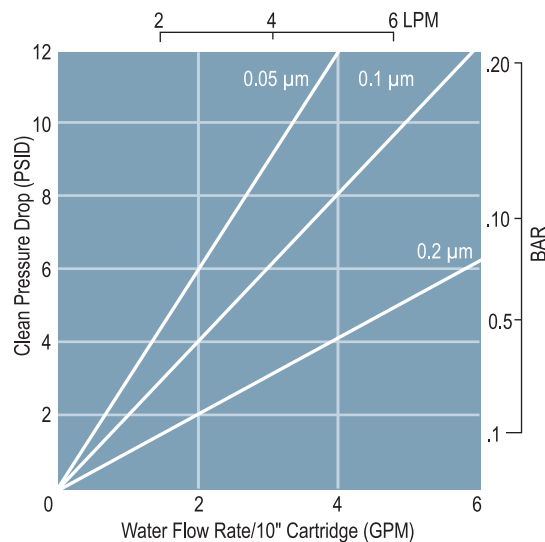
Recommended Water Flow Rates

0.05 micron	2.0 gpm/10" length (7.6 lpm/10" length)
0.1 and 0.2 micron	3.0 gpm/10" length (11.4 lpm/10" length)

Sanitizing Agents

.	Chlorine, hydrogen peroxide, autoclaved for 20 minutes at 121°C under no load conditions
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FLOW RATE vs. INITIAL CLEAN PRESSURE DROP



ORDERING INFORMATION

Catalog Number and Description

FCUF	Filter cartridge ultra filter
X	Cartridge Code: 0 = 2-222 o-rings 5 = 2-222 o-rings w/spear end 1 = single open end w/ internal o-ring 7 = 2-226 o-rings w/locking tabs/spear end
XX	Length (in): 10 = 10, 20 = 20, 30 = 30, 40 = 40
XX(X)	Micron Rating: S05 = 0.05 µm, S1 = 0.1 µm, S2 = 0.2 µm

To determine your catalog order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.



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LENNTECH



316 Stainless Steel, Single-Tube Filter Housing

For Code F

This single-tube cartridge filter housing is made of cast 316 stainless steel and includes 316 stainless steel shell. Housings are available to accommodate 10, 20 or 30-in Code F filter cartridges. The inlet and outlet are 3/4" NPT, and the bowl of each housing is fitted with a 1/4" NPT drain plug. This cartridge filter housing is ideal for a wide variety of low flow applications requiring a high quality prefilter housing or for applications where an industrial pre-filter is used.

- Single tube housings accommodate 10", 20" and 30" Code F filter cartridges
- Housing uses 316SS for construction of the head, bowl and port plug
- Inlet and outlet connections are made to the housing head, allowing cartridges to be replaced without disconnecting the inlet/outlet piping
- Housing can be autoclaved or hot-water sanitized with the cartridges in place for your convenience

SPECIFICATIONS

Dimensions

	Length (A)	Width (B)
10-in Housing.....	13.5" (34.3 cm)	4.75 (12.1 cm)
20-in Housing.....	23.5" (59.7 cm)	4.75 (12.1 cm)
30-in Housing.....	33.5" (85.1 cm)	4.75 (12.1 cm)

Materials

Bowl and Head	316 stainless steel
Port Plugs	316 stainless steel
O-ring	Ethylene Propylene

Operating Parameters

Max Operating Pressure	175 psi (12.1 bar) @ 200°F (93°C)
Max Housing Flow Rate	12 gpm (45.4 lpm)

Note: Housing rating only, safe operating pressure will depend on filter cartridge and gaskets used.

Connections

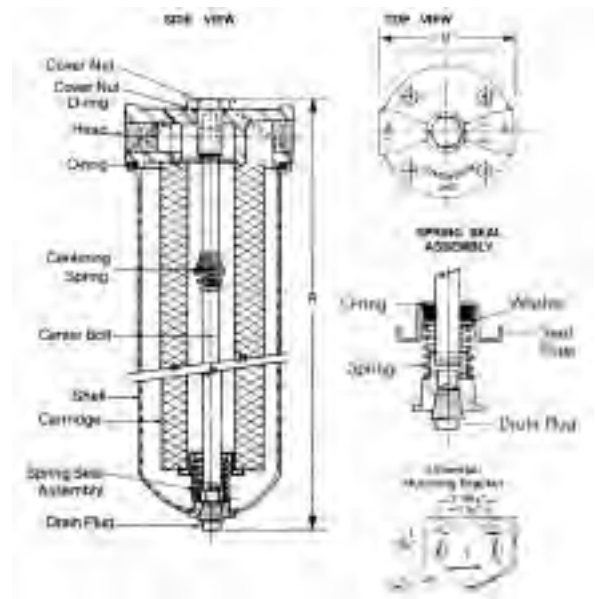
Inlet/Outlet	3/4" NPT
Drain	1/4" NPT

Mounting

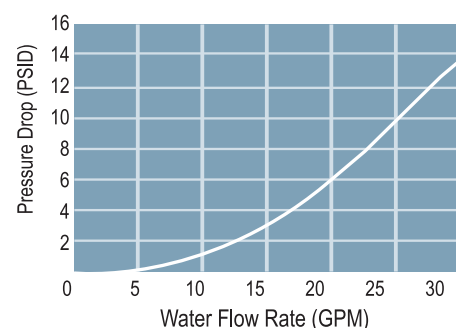
Should be mounted by rigid pipe connections or with optional mounting bracket. Allow enough clearance below bottom of housing to allow cartridge to be changed.

Flow Direction

"Inlet" and "Outlet" are cast on the housing head for user convenience.



HOUSING PRESSURE DROP vs. LIQUID FLOW RATE



ORDERING INFORMATION

Catalog Number and Description

ZHDFD1001	10" housing
ZHDFD2001	20" housing
ZHDFD3001	30" housing
ZHDXDB001	Mounting Bracket
B10015866	Shell O-ring EPDM

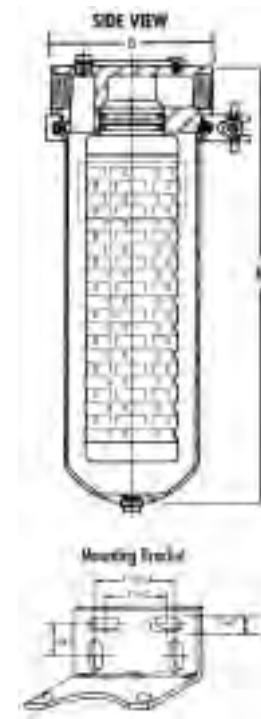


316L Stainless Steel, Single-Tube Filter Housing

For Code 0

This single-tube cartridge filter housing is made of 316L stainless steel and includes 316 stainless steel port plugs. Housings are available to accommodate 10, 20 or 30-in Code 0 filter cartridges. The inlet and outlet are 3/4" NPT, and the bowl of each housing is fitted with a 1/4" NPT drain plug. This cartridge filter housing is ideal for a wide variety of low flow applications requiring a high quality prefilter housing or for applications where an industrial pre-filter is used.

- Inlet and outlet connections are made to the housing head, allowing cartridges to be replaced without disconnecting the inlet/outlet piping
- Bowl incorporates a satin finish to help prevent bacterial build-up
- Housing can be autoclaved or hot-water sanitized with the cartridges in place for your convenience
- Two vent ports are included in the head for venting, or for the installation of pressure gauges



SYSTEM SPECIFICATIONS

Dimensions

	Length (A)	Width (B)
10-in Housing	14.8" (37.5 cm)	4.2 (10.5 cm)
20-in Housing	24.8" (62.9 cm)	4.2 (10.5 cm)
30-in Housing	34.8" (88.4 cm)	4.2 (10.5 cm)

Materials

Head	316L stainless steel
Bowl and Plugs	316 stainless steel
O-ring	EPDM

Surface Finish

Head	Sand Blasted Finish
Cartridge Sealing Surface	32 RMS Finish
Bowl	Satin Finish

Operating Parameters

Max Inlet Pressure	175 psi (12.1 bar) @ 150°F(66°C)
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Note: Housing rating only, safe operating pressure will depend on filter cartridge and gaskets used.

Connections

Inlet/Outlet	3/4" NPT
Drain and Vent	1/4" NPT

Mounting

Should be mounted by rigid pipe connections or optional mounting bracket. Allow enough clearance below bottom of housing to allow cartridge to be changed.

Flow Direction

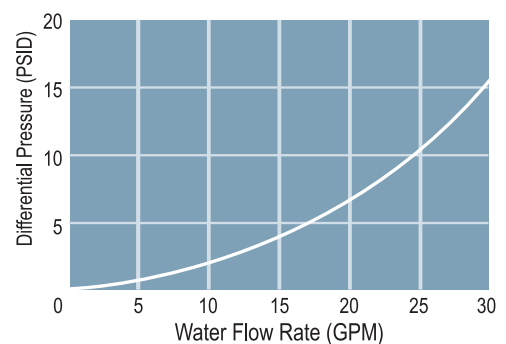
"Inlet" and "Outlet" are electroetched on the housing head for user convenience.

ORDERING INFORMATION

Catalog Number and Description

ZHD0D1001	10" housing
ZHD0D2001	20" housing
ZHD0D3001	30" housing
ZHDXDB001	Mounting Bracket
B10015866	Shell O-ring EPDM

HOUSING PRESSURE DROP vs. LIQUID FLOW RATE





316L Electropolished Stainless Steel, Multi-Tube Filter Housing

For Code 5 or Code 0

This multi-tube cartridge filter housing is made of electropolished 316L stainless steel. Housings are available to accommodate 7 cartridges in 10, 20, 30 or 40" length, Code 5 or Code 0 configurations with two 222 o-rings. The bottom of each housing is fitted with a 3/4" NPTF drain plug. And each housing is equipped with a NPTF vent at the top of the housing. A V-band clamp closure allows cartridges to be changed quickly and easily.

- Housing uses electropolished 316L stainless steel construction that is easy to clean and provides maximum corrosion resistance
- Predrilled support stand allows the housing to be secured to floor or some mounting surface
- A 1/4" NPTF air vent plug on the cover allows venting before start-up

FILTER HOUSING SPECIFICATIONS

Dimensions (inches (cm))	Inlet/Outlet	Housing Dimensions				Flange Option E	Max. Flow Rate*/gpm (lpm)
		A	B	C	D		
7-round 10"	2" NPTM (5.1)	25 (64)	11.5 (29)	5.5 (14)	12 (30)	12.8" (32)	35 (132)
7-round 20"	2" NPTM (5.1)	33.5 (85)	11.5 (29)	5.5 (14)	12 (30)	12.8" (32)	70 (264)
7-round 30"	2" NPTM (5.1)	44 (112)	11.5 (29)	5.5 (14)	12 (30)	12.8" (32)	105 (398)
7-round 40"	2" NPTM (5.1)	54.5 (138)	11.5 (29)	5.5 (14)	12 (30)	12.8" (32)	140 (530)

Materials

Head and Shell	316L Stainless Steel electropolished
Vent and Drain Plug	316 Stainless Steel
Seat Cups	316L Stainless Steel
O-Ring	Ethylene Propylene

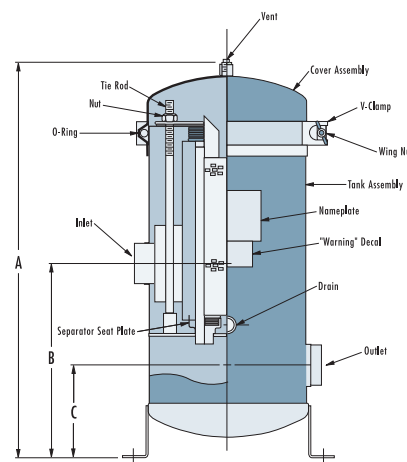
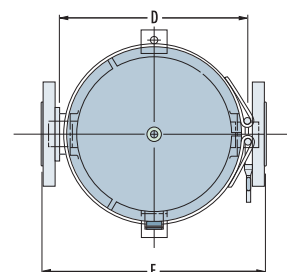
Operating Parameters

Maximum Operating Pressure	150 psi (10.3 bar) @ 200°F (93°C)
Maximum Water Flow Rate*	140 gpm (528 Lpm)

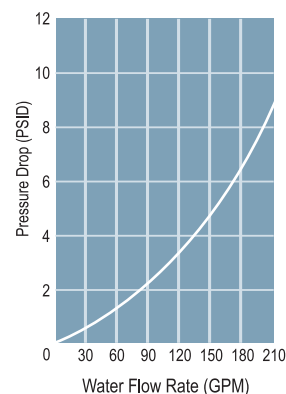
*Housing rating only, cartridge length and type will effect maximum flow rates

ORDERING INFORMATION

Catalog Number	Description	Inlet/Outlet
ZHH000710	7-round 10"	2" NPTM
ZHH000720	7-round 20"	2" NPTM
ZHH000730	7-round 30"	2" NPTM
ZHH000740	7-round 40"	2" NPTM
ZHH000710F	7-round 10"	2" flange
ZHH000720F	7-round 20"	2" flange
ZHH000730F	7-round 30"	2" flange
ZHH000740F	7-round 40"	2" flange
B10016248	Spare Housing O-Ring EPDM	



FLOW RATE vs. INITIAL CLEAN PRESSURE DROP

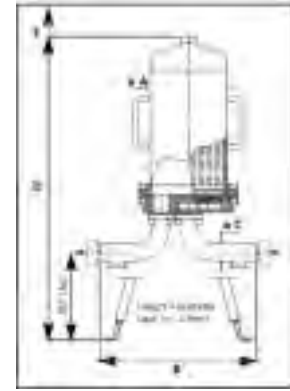


316L Stainless Steel, Multi-Tube High Purity Housing

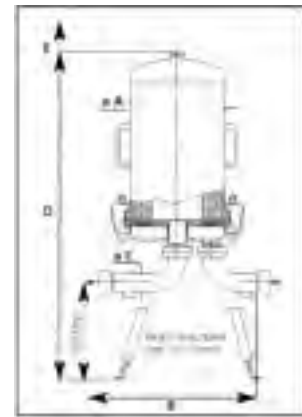
For Code 0 and Code 5, option for Code 7

This multi-tube cartridge filter housing is made of 316L stainless steel, and suited to high purity and sanitary applications. These housings include options to accommodate Code 0 and 5 or Code 7 filter cartridges.

- High quality, crevice free construction
- External mirror polished, internally polished to 32 Ra–EP option
- Steam sterilizable
- Sanitary Tri-Clamp, vent and drain connections
- Band clamp or Rathmann style screw clamp (used on 12, 18, 24 and 30 round vessels) body closure as standard for additional security
- Inlet/outlet available with Tri-Clamp (below) or ANSI flange connections
- Available in Code 0 and 5 (below) or optional Code 7 end cap configuration



ZHHP 3/5/8 Round



ZHHP 12 Round

PRODUCT SPECIFICATIONS

Head and Shell	316L Stainless Steel
Seals	Silicone
Surface Finish	Internal: mechanical polish 32Ra External: mechanical polish, EP option
Cartridge Configuration	Code 0 and 5, Code 7 option
Maximum Operating Pressure	3–8 Round: 145 psig @ 104°F 12 Round: 130.5 psig @ 104°F
Maximum Operating Temperature	3–8 Round: 302°F @ 108.75 psig 12 Round: 302°F @ 101.50 psig

ORDERING INFORMATION

Part Number	Cartridge No.	Cartridge Length	A (in) Dia.	B (in) X-port	C (in) Pipe Dia.	D (in) Overall Height	E (in) Required Clearance	Total Volume (L)	Total Net Weight (kg)
ZHHPON0320T	3	20	6.6	14.2	1-1/2"	41.3	21.3	12.6	19.4
ZHHPON0330T	3	30	6.6	14.2	1-1/2"	51.2	31.1	17.8	21.4
ZHHPON0520T	5	20	8.6	16.5	2"	41.3	21.3	20	20
ZHHPON0530T	5	30	8.6	16.5	2"	51.2	31.1	29.1	22
ZHHPON0820T	8	20	10.7	17.6	2"	41.3	21.3	35.5	30
ZHHPON0830T	8	30	10.7	17.6	2"	51.2	31.1	49.7	33
ZHHPON1220T	12	20	13.8	26.9	3"	47.2	21.3	65	14.5
ZHHPON1230T	12	30	13.8	26.9	3"	57.1	31.1	88	19

Vessel Size	Tri-Clamp Size (in)	Flange Size (in)
3 round	1-1/2"	1-1/4"
5 round	2"	1-1/2"
8 round	2"	1-1/2"
12 round	3"	3"



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LENNTECH



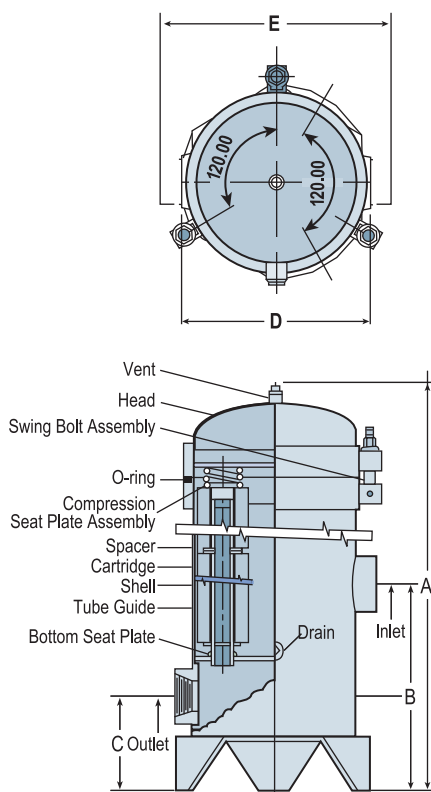
316 Stainless Steel, Multi-Tube Filter Housing

For Code F

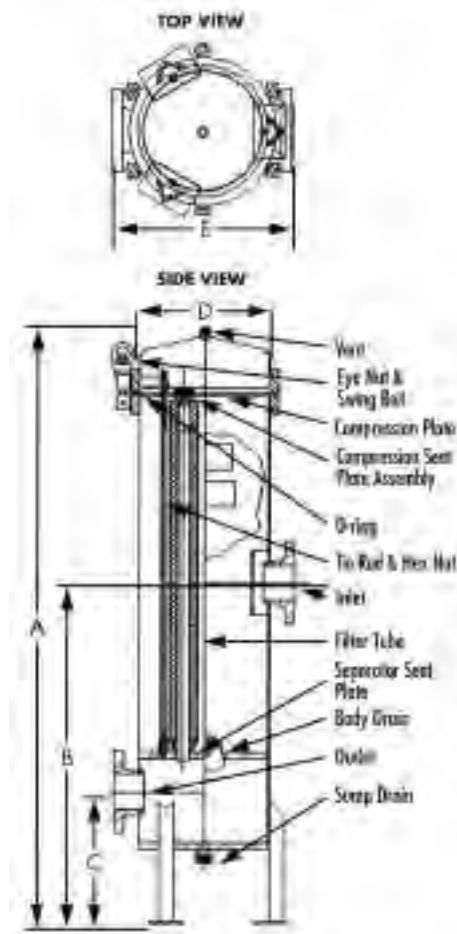
This multi-tube cartridge filter housing is made of 316 stainless steel, and is suited for general-purpose industrial and commercial filtration. These housings can accommodate Code F (DOE) or Code O cartridges, and are available with 6, 12, and 21 tubes in 10, 20, 30, 40-inch lengths.

- The 6 round housings are initially setup for Code F filter cartridges. They can only be adapted to Code O SOE with the addition of the loose compression plate p/n B100237452
- The 12 and 21 round vessels are initially setup to accept Code F, Code O or Code 5
- Incorporates a flow baffle, which deflects incoming flow to prevent cartridge erosion
- An air vent on the cover allows venting before start-up
- A swing bolt closure allows quick disassembly for cleaning and cartridge replacement

6-ROUND DIMENSIONS



12- AND 21-ROUND DIMENSIONS



316 Stainless Steel, Multi-Tube Filter Housing

FILTER HOUSING SPECIFICATIONS

Dimensions (inches (cm))	Inlet/Outlet	Housing Dimensions		C	D	Flange Option E	Max. Flow Rate*/gpm (lpm)
		A	B				
6-round 10"	2 NPTM (5.1)	24 (61)	11.2 (28)	5.2 (13)	10.2 (26)	15 (38)	30 (114)
6-round 20"	2 NPTM (5.1)	34 (86)	11.2 (28)	5.2 (13)	10.2 (26)	15 (38)	60 (227)
6-round 30"	2 NPTM (5.1)	45 (114)	11.2 (28)	5.2 (13)	10.2 (26)	15 (38)	90 (340)
6-round 40"	2 NPTM (5.1)	56 (142)	11.2 (28)	5.2 (13)	10.2 (26)	15 (38)	120 (454)
12-round 30"	3 flange (7.6)	56 (142)	31 (79)	12 (30)	12 (30)	16.4 (42)	180 (680)
12-round 40"	3 flange (7.6)	66 (168)	31 (79)	12 (30)	12 (30)	16.4 (42)	240 (908)
21-round 30"	4 flange (10.16)	57 (145)	31 (79)	12 (30)	16 (41)	20.8 (53)	315 (1190)
21-round 40"	4 flange (10.16)	67 (170)	31 (79)	12 (30)	16 (41)	20.8 (53)	420 (1560)

Materials

Head, Shell, Plugs . . .	316L Stainless Steel
Internals	316 Stainless Steel
Cover O-Ring	EDPM

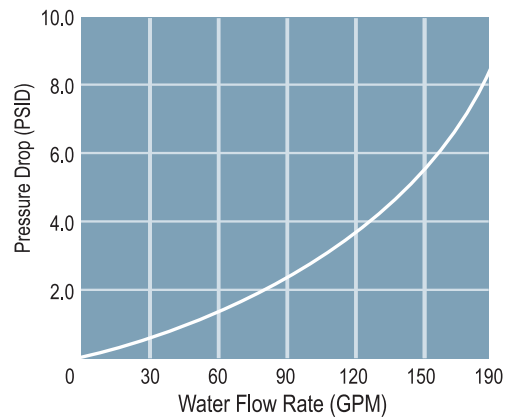
Maximum Operating Pressure

6-Round	150 psi (10.3 bar) @ 200°F (93°C)
12-Round	150 psi (10.3 bar) @ 200°F (93°C)
21-Round	150 psi (10.3 bar) @ 200°F (93°C)

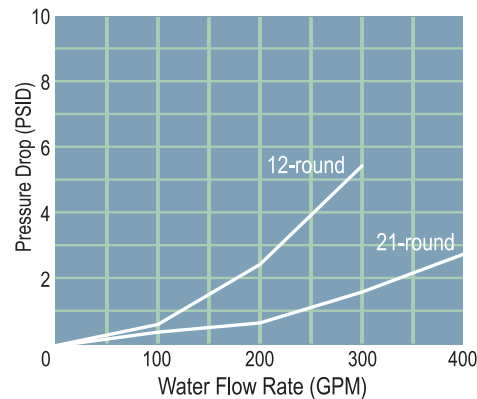
ORDERING INFORMATION

Catalog Number	Description	Inlet/Outlet
ZHGOF0610	6-round 10"	2" NPT
ZHGOF0620	6-round 20"	2" NPT
ZHGOF0630	6-round 30"	2" NPT
ZHGOF0640	6-round 40"	2" NPT
ZHGOF0610F	6-round 10"	2" flange
ZHGOF0620F	6-round 20"	2" flange
ZHGOF0630F	6-round 30"	2" flange
ZHGOF0640F	6-round 40"	2" flange
ZHFFI1230	12-round 30"	3" flange
ZHFFI1240	12-round 40"	3" flange
ZHFFI2130	21-round 30"	4" flange
ZHFFI2140	21-round 40"	4" flange
B10020279	Replacement O-ring EPDM - 6-round	
B10015430	Replacement O-ring EPDM - 12-round	

HOUSING PRESSURE DROP vs. LIQUID FLOW RATE



HOUSING PRESSURE DROP vs. LIQUID FLOW RATE



*Housing rating only, cartridge length and type will effect maximum flow rates



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LENNTECH



304 Stainless Steel, Multi-Tube Filter Housing with V-Clamp Closure

For Code F

This multi-tube cartridge filter housing is made of durable 304 stainless steel, and is suited for general-purpose industrial and commercial filtration. These housings can accommodate Code F (DOE, internals provided), and can be configured for Code 0 and Code 5 cartridges.

- Incorporates a flow baffle, which deflects incoming flow to prevent cartridge erosion
- A 1/4" NPT air vent on the cover allows venting before start-up
- A 3/4" NPT drain plug allows for liquid removal
- Cartridges are independently sealed inside the housing and a single V-band clamp housing closure allows easy cartridge replacement
- Cartridge post can be lifted out, allowing easy removal of cartridges at the bottom of the stack

FILTER HOUSING SPECIFICATIONS

Cartridge Housing	Inlet/Outlet Inches (cm)	Housing Dimensions/Inches (cm)				Flange Opt. E	Max. Flow Rate*/gpm (lpm)
		A	B	C	D		
5-round 10"	1-1/2 NPTM (3.8)	25 (64)	11.5 (29)	5.5 (14)	12 (30)	12.75 (32)	25 (94.6)
5-round 20"	1-1/2 NPTM (3.8)	32.5 (85)	11.5 (29)	5.5 (14)	12 (30)	12.75 (32)	50 (189)
5-round 30"	2 NPTM (5.1)	44 (112)	11.5 (29)	5.5 (14)	12 (30)	12.75 (32)	75 (284)
5-round 40"	2 NPTM (5.1)	54.5 (138)	11.5 (29)	5.5 (14)	12 (30)	12.75 (32)	100 (378)

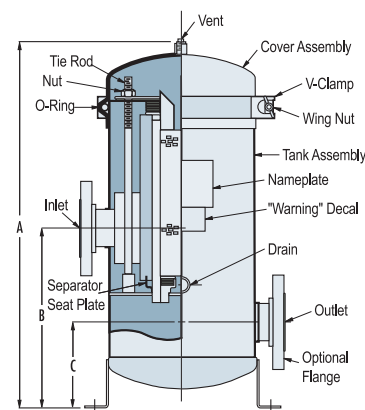
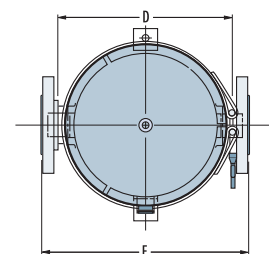
Materials

Head, Shell, Plugs.	304 Stainless Steel
Internals.	316 Stainless Steel
Cover O-Ring.	Ethylene Propylene
Hold Down Plate Nut.	Polypropylene

Operating Parameters

Maximum Operating Pressure.	150 psi (10.7 bar) @ 200°F (93°C)
Maximum Housing Flow Rates*	100 gpm (378 lpm)

*Housing rating only, cartridge length and type will effect maximum flow rates

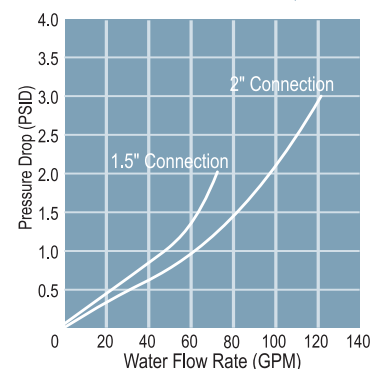


ORDERING INFORMATION

Catalog Number	Description	Inlet/Outlet
ZHFFI0510	5-round 10"	1-1/2" NPT
ZHFFI0520	5-round 20"	1-1/2" NPT
ZHFFI0530	5-round 30"	2" NPT
ZHFFI0540	5-round 40"	2" NPT
ZHFFI0510F	5-round 10"	1-1/2" Flange
ZHFFI0520F	5-round 20"	1-1/2" Flange
ZHFFI0530F	5-round 30"	2" Flange
ZHFFI0540F	5-round 40"	2" Flange
B10016248	Spare Housing O-Ring EPDM	

**Flange inlet and outlet are also available; add F Suffix to part number

HOUSING PRESSURE DROP vs. LIQUID FLOW RATE



304 Stainless Steel, Multi-Tube Filter Housing with Swing Bolt Closure

For Code F

This multi-tube cartridge filter housing is made of 18 gauge 304 stainless steel. Housings are available to accommodate 6, 10, 20, 30 or 40-in, Code F filter cartridges. The inlet and outlet are 2" NPT. There is a 1/2" NPT drain plug, and a 1/4" NPT vent at the top of the housing. A swing bolt closure allows quick disassembly for cleaning and service. This cartridge filter housing is ideal for a wide variety of high flow applications that require an economical, high quality housing.

- Uses 304 stainless steel construction for maximum corrosion resistance to deliver years of dependable service
- A swing bolt closure allows quick disassembly for cleaning and service
- An air vent plug on the cover allows venting before start-up
- This housing accommodates liquid flow rates up to 180 gpm (681 lpm) with operating pressures to 150 psig (10.3 bar)



FILTER HOUSING SPECIFICATIONS

Cartridge Housing	Housing Dimensions/Inches (cm)				Flange Opt. E	Max. Flow Rate*/gpm (lpm)
	A	B	C	D		
6-round 10"	24 (61)	11.2 (28)	5.2 (13)	10.2 (26)	15 (38)	30 (114)
6-round 20"	34 (86)	11.2 (28)	5.2 (13)	10.2 (26)	15 (38)	60 (227)
6-round 30"	45 (114)	11.2 (28)	5.2 (13)	10.2 (26)	15 (38)	90 (340)
6-round 40"	56 (142)	11.2 (28)	5.2 (13)	10.2 (26)	15 (38)	120 (454)

Materials

Head and Shell	304 Stainless Steel
Vent and Drain Plug	304 Stainless Steel
Seat Cups	316L Stainless Steel
O-Ring	Ethylene Propylene

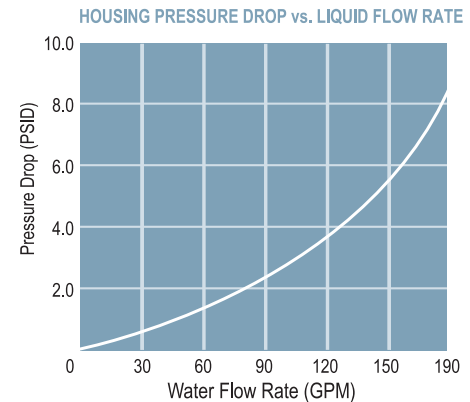
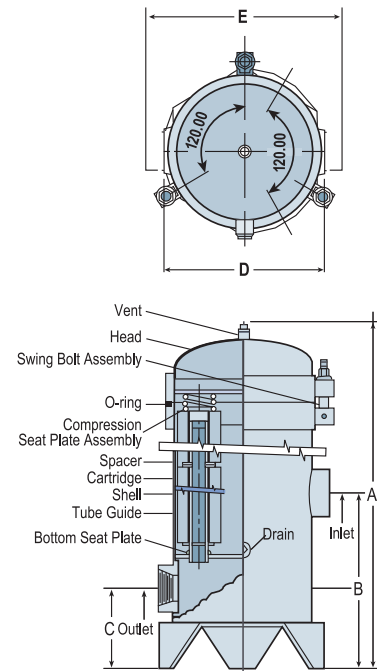
Operating Parameters

Maximum Operating Pressure	150 psi (10.3 bar) @ 200°F (93°C)
Max Water Flow Rate*	120 gpm (454 Lpm)

*Housing rating only, cartridge length and type will effect maximum flow rates

ORDERING INFORMATION

Catalog Number	Description	Inlet/Outlet
ZHGAF0610	6-round 10"	2" NPT
ZHGAF0620	6-round 20"	2" NPT
ZHGAF0630	6-round 30"	2" NPT
ZHGAF0640	6-round 40"	2" NPT
ZHGAF0610F	6-round 10"	2" flange
ZHGAF0620F	6-round 20"	2" flange
ZHGAF0630F	6-round 30"	2" flange
ZHGAF0640F	6-round 40"	2" flange
B10020279	Spare Housing O-ring	



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LENNTECH



Polypropylene Plastic Filter Housings

These filter housings are molded from polypropylene, and are available in 10 and 20 inch lengths. Housings are supplied with 3/4" inlet and outlets in standard flat gasket design for Code F filter cartridges. Heads are available with double cap plug design and Viton® o-rings.

- Durable housings are made from all polypropylene materials
- Housings contain no fillers, colorants, plasticizers, or lubricants
- Housings are autoclavable, ETO sterilizable, and hydrogen peroxide compatible
- Supplied with 3/4" NPT inlet and outlets in standard flat gasket design for Code F filter cartridges

FILTER HOUSING SPECIFICATIONS

Dimensions	3.5" ID, 5 1/8" OD maximum
Materials	polypropylene cap and housing with standard Viton® E-60 o-rings
Maximum Operating Pressure	125 psi (8.6 bar)
Maximum Operating Temperature	100°F (38°C)
Sterilization/Sanitization	
Hydrogen Peroxide	7.5% compatibility; static soak up to 24 hr at ambient temperature
Weight	
10" housing	3 lb (1.4 kg)
20" housing	4.25 lb (1.9 kg)
Housing Compatibility/Cartridge Type	
ZHCFA1001	Code F, 9 3/4"
ZHCFA2001	Code F, 20"

ORDERING INFORMATION

Catalog Number:	ZHC	F	A	XX	XX
System Name	Polypropylene filter housing				
Cartridge Code		F = Code F			
Cartridge Configuration			A = No plugs	10 = 10	
Length				20 = 20	
Number of Tubes					01 = 1 tube

To figure your order number, replace the X with one of the numbered options below it.

ACCESSORIES

Description	Catalog Number
Mounting Bracket	ZHA150060
Wrench	FC150295
O-ring replacement	ZHA151021

White Polypropylene Plastic Filter Housing for Dialysis Filtration Applications

These filter housings are molded from a white colored, high-density polypropylene, and are available in 12 and 20 inch lengths to accommodate 10 and 20 inch Code 0 filter cartridges. Housings are molded in dies that are minutely polished for an ultra-smooth finish to all contact surfaces, thus minimizing the opportunity for bacteria adhesion. Housings are supplied with 3/4" inlet and outlets. Heads are available with double cap plug design and Viton® o-rings.

- Durable housings are made from all polypropylene materials with FDA approved white colorant
- O-rings are molded of FDA approved Viton®
- Available in 222 o-ring design for Code 0 filter cartridges
- Housings are hydrogen peroxide compatible
- Supplied with 3/4" NPT inlet and outlets



FILTER HOUSING SPECIFICATIONS

Dimensions.....	3.5" ID, 5 1/8" OD maximum
Materials.....	White colored polypropylene cap and housing with standard Viton® E-60 o-rings
Maximum Operating Pressure.....	100 psi (6.9 bar)
Maximum Operating Temperature.....	100° F (35°C)
Sterilization/Sanitization	
Hydrogen Peroxide.....	7.5% compatibility; static soak up to 24 hr at ambient temperature
Weight	
12" housing.....	3.5 lb (1.6 kg)
20" housing.....	4.25 lb (1.9 kg)
Housing Compatibility/Cartridge Type	
ZHW0D1201.....	Code 0, 10"
ZHW0D2001.....	Code 0, 20"

ORDERING INFORMATION

Catalog Number:	ZHW	X	X	XX	XX
System Name.....	White polypropylene filter housing				
Cartridge Code.....		0 = Code 0			
Housing Configuration.....			D = Double cap plug	12 = 12	
Length.....				20 = 20	
Number of Tubes.....					01 = 1 tube

To figure your order number, replace the X with one of the numbered/lettered options below it.

ACCESSORIES

Description	Catalog Number
Mounting Bracket.....	ZHA150060
O-ring Viton®.....	ZHA151117



Natural Polypropylene Plastic Filter Housing

These filter housings are molded from natural, high-density polypropylene, and is available in 10, 12 and 20 inch lengths. Housings are molded in dies that are minutely polished for an ultra-smooth finish to all contact surfaces, thus minimizing the opportunity for bacteria adhesion. Housings are supplied with 3/4" inlet and outlets in standard flat gasket design for Code F filter cartridges, and 222 o-ring design for Code O filter cartridges. Heads are available with double cap plug design and Viton® o-rings.

- Durable housings are made from all polypropylene materials (except for o-rings)
- Housings contain no fillers, colorants, plasticizers, or lubricants
- Available in flat gasket design for Code F filter cartridges, and 222 o-ring design for Code O filter cartridges
- Housings are autoclavable and hydrogen peroxide compatible
- Supplied with 3/4" NPT inlet and outlets

FILTER HOUSING SPECIFICATIONS

Dimensions	3.5" ID, 5 1/8" OD maximum
Materials	Natural polypropylene cap and housing with standard Viton® E-60 o-rings
Maximum Operating Pressure	100 psi
Maximum Operating Temperature	38° C (100°F)
Sterilization/Sanitization	
Autoclavable	25 min 121-127°C (252-260°F)
Hydrogen Peroxide	7.5% compatibility; static soak up to 24 hr at ambient temperature
Weight	
10" housing	3 lb (1.4 kg)
12" housing	3.5 lb (1.6 kg)
20" housing	4.25 lb (1.9 kg)
Housing Compatibility/Cartridge Type	
ZHA0D1201*	Code O, 10"
ZHA0D2001	Code O, 20"
ZHAFD1001	Code F, 9 3/4"
ZHAFD2001	Code F, 20"

*Code O, 10" cartridge must be used with 12" housing

*Code O cartridge requires 12" housing

ORDERING INFORMATION

Catalog Number:	ZHA	X	X	XX	XX
System Name	Natural polypropylene filter housing	F = Code F			
Cartridge Code		O = Code O		10 = 10	
Housing Configuration			D = Double cap plug	12 = 12	
Length				20 = 20	
Number of Tubes					01 = 1 tube

To figure your order number, replace the X with one of the numbered/lettered options below it.

*Code O cartridge requires 12" housing

ACCESSORIES

Description	Catalog Number
Mounting Bracket	ZHA150060
O-ring Viton®	ZHA151117

LENNTECH

CLERIFY™ Oil Adsorption Filter Cartridge

- Composed of sheets of modified cellulose material rolled on a central polypropylene support core
- Removes 95% of total hydrocarbons from water in a single pass. The media can adsorb up to 300% of its own weight in oils
- Available in 2.75" and 4.6" diameters and lengths to 40"



CARTRIDGE SPECIFICATIONS

Dimensions

Diameter (OD)	2.75" (7.0 cm) or 4.5" (11.7 cm)
Length	9.75", 10", 20", 30", 40"

Materials

Media	Modified Cellulose
Core	Polypropylene
Gaskets	Buna N

Operating Parameters

Max. Temperature	120° F (50° C)
Max. Differential Pressure	36 psi (2.5 bar) @ 25°C

Recommended Water Flow Rates

2.75" Diameter	5.0 gpm/10" Length (18.9 lpm/10" Length)
4.60" Diameter	5.0 gpm/10" Length (18.9 lpm/10" Length)

ORDERING INFORMATION

Catalog Number:	HAC	X	X	XX	X	X	
Hydrocarbon Adsorption Cartridge .	HAC			09 = 9.75			
Cartridge Diameter		A = 2.75"	0 = 2-222 O-Rings	10 = 10			
Cartridge Code		B = 4.5"	F = Double open end	20 = 20			
Length (inches)			w/flat gasket seals	30 = 30			
Core Material				40 = 40			
Gasket Material					P = Polypropylene		
						B = Buna N	



Hydrophobic PTFE Media Vent Capsule Filter

- Composed of a pleated hydrophobic PTFE filter membrane rated at 0.01 μm absolute for small volume storage tank venting applications
- Convenient threaded inlet, with 1/2" NPTM inlet fitting screws into 1/2" NPTF bulkhead fitting, eliminates the need for a filter housing
- Hydrophobic expanded PTFE membranes are fully validated by bacterial challenge test methods
- Filters feature thermally-bonded polypropylene cage without using adhesives to ensure low extractables
- 100% integrity tested in manufacturing and can be repeatedly autoclaved with steam up to 140°C

CARTRIDGE SPECIFICATIONS

Dimensions

Diameter (OD)
Length (in)
Inner Connection

2.48" (5.6 cm)
5.9 (15 cm)
1/2" NPTM

Materials

Cartridge
Media

Polypropylene
PTFE Membrane

Operating Parameters

Maximum Temperature
Maximum Differential Pressure @ 80°C (176°F)
Air Filtration Rating

60°C (140°F)
65 psig (4.5 bar)
0.01 μm 100% Absolute

ORDERING INFORMATION

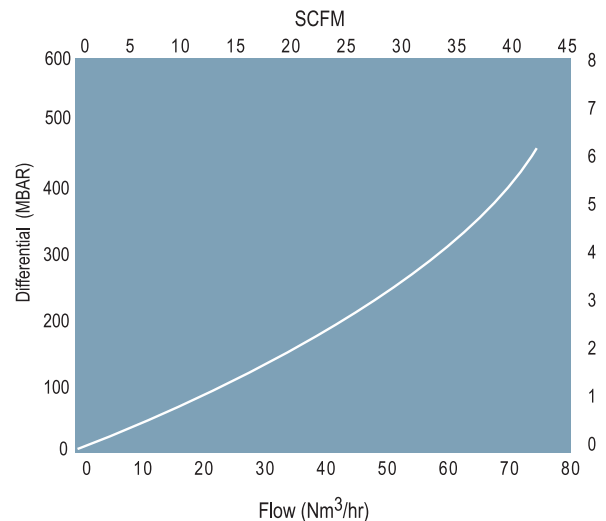
Catalog Number and Description

FCVPTO6S1

Capsule Hydrophobic PTFE Filter

NOTE: These filter cartridges should not be used as a combination air vent/water overflow device.

CARTRIDGE FLOW RATES



EA Series Hydrophobic Polypropylene Media Vent Filter Cartridge

- Composed of a pleated hydrophobic highly asymmetric polysulfone membrane rated at 0.02 μm absolute for sterile air filtration, storage tank venting applications
- Filter components meet current USP Class VI biological test for plastics
- Contain no surfactants or coatings to interfere with your application, and the thermo-plastic construction process minimizes extractables
- Asymmetric single layer membrane ensures strength, while exhibiting low pressure drop and exceptionally high flow rates
- Sterilized by autoclaving



CARTRIDGE SPECIFICATIONS

Dimensions

Diameter (OD)	2.6" (6.6 cm)
Length (in)	10, 20, 30

Materials

Cartridge	Polypropylene caps, core and cage
Media	Hydrophobic asymmetric polysulfone
Seals	Silicone o-rings and gaskets

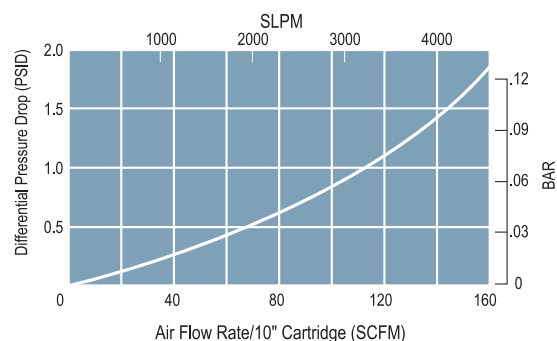
Operating Parameters

Maximum Temperature	Ambient Air
Maximum Differential Pressure @ 23°C	60 psi (4.1 bar)
Air Filtration Rating	0.02 μm 100% Absolute
Toxicity	Non-toxic by USP Class VI biological test for plastics

Sanitizing Agents

.	Chlorine, hydrogen peroxide or autoclaving
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AIR FLOW RATES AT NEAR ATMOSPHERIC PRESSURE
(VENT APPLICATIONS)



ORDERING INFORMATION

Catalog Number and Description

FCEA	Filter cartridge vent polysulfone
X	Cartridge Code: 0 = 2-222 o-rings 5 = 2-222 o-rings w/spear end 1 = single open end w/internal o-ring 7 = 2-226 o-rings w/locking tabs/spear end F = double open end w/flat gasket seal
XX	Length (in): 10 = 10, 20 = 20, 30 = 30
S2	Micron Rating: S2 = 0.02 μm (air)

To figure your order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.

NOTE: These filter cartridges should not be used as a combination air vent/water overflow device.



VA Series Hydrophobic PTFE Validated Membrane Vent Filter Cartridge

- Hydrophobic, pleated PTFE membrane rated at 0.2µm absolute for sterile air filtration
- Materials of construction conform to USP Class VI biological tests for plastics
- High surface area and high voids volume combine to offer exceptional flow rates and extended service life
- Fully validated by aerosol and liquid bacterial challenge
- Filters are integrity testable by all methods including Water Intrusion Test
- FCVA Series is fully retentive to aerosolized *Brevundimonas diminuta* (ATCC 19146) bacteria when challenged with a total of 2×10^9 cfu over a 1-hr test at the rated flow of the cartridge.
- Conformance to the requirements for the non-fibre releasing filters as laid down in the U.S. Food and Drug Administration Regulations 12CFR211.72 and 210.3(b), (6).

CARTRIDGE SPECIFICATIONS

Dimensions

Diameter (OD)	2.6
Length (in)	5, 10, 20, 30

Materials

Cartridge	Polypropylene caps, core and cage
Membrane	Hydrophobic PTFE
Seals	Silicone o-rings

Operating Parameters

Maximum Temperature	50° C
Maximum Differential Pressure @ 20°C	50 psig
Air Filtration Rating	0.02 µm Absolute
Toxicity	All components conform to the Biological Safety Standards identified in USP <88> <i>Biological Reactivity</i> to Class VI-121°C levels
Validation	ASTM F838-83 Liquid Bacterial Challenge Fully retentive to both Aerosol Bacteria and Phage Challenge

Sanitizing Agents

Sterilization	Can be insitu steam sterilized up to 180 times at 142°C
.	Chlorine, hydrogen peroxide

Integrity Test @ 20°C

Micron Rating	0.2 µm liquid rating
Minimum Bubble Point (psi)	14.5
Pressure Decay Test Pressure (psi)	11.6
Maximum Diffusional Flow (ml/min)	8.5, 18, 36, 54

ORDERING INFORMATION

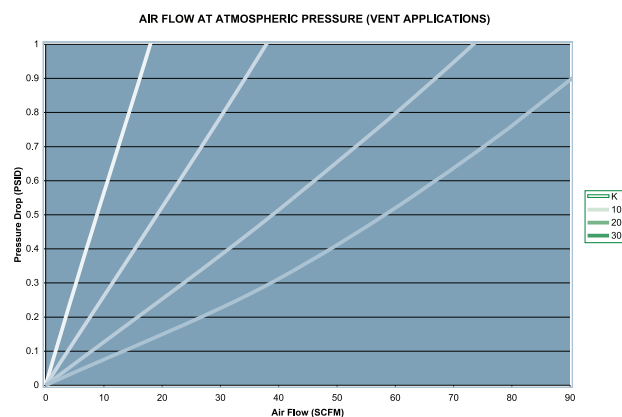
Catalog Number and Description

FCVA	Filter Cartridge Vent PTFE
X	Cartridge Code: 0 = 2-222 o-rings 5 = 2-222 o-rings w/spear end 7 = 2-226 o-rings w/locking tabs/spear end
XX	Length (in): 05 = 5, 10 = 10, 20 = 20, 30 = 30
S2	Micron Rating: S2 = 0.2 µm

To figure your order number, replace the X with one of the numbered or lettered options beside it.

NOTE: These filter cartridges should not be used as a combination air vent/water overflow device.

NOTE: Not all part number combinations are available; consult Technical Support for assistance.



VP Series Hydrophobic PTFE Validated Media Vent Filter Cartridge

- Composed of a pleated, hydrophobic, PTFE, Teflon® membrane rated at 0.2 µm absolute for sterile air filtration, storage tank venting applications
- Filter components meet the criteria of the USP Class VI biological test for plastics
- These filters feature minimal pressure loss, long service life due to high void volume, and can be repeatedly steam sterilized or autoclaved
- Bacterial Growththrough - Prevention of bacterial growththrough by Brevundimonas diminuta for at least 21 days @ a challenge level $\geq 1 \times 10^7$ CFU/cm²



CARTRIDGE SPECIFICATIONS

Dimensions

Diameter (OD)	2.6" (6.6 cm)
Length (in)	10, 20, 30

Materials

Cartridge	Polypropylene caps, core and cage
Media	Hydrophobic Teflon® PTFE
Seals	Silicone o-rings and gaskets

Operating Parameters

Maximum Temperature	Ambient Air
Maximum Differential Pressure @ 21°C	72 psi (5.0 bar)
Air Filtration Rating	0.2 µm Absolute
Toxicity	Non-toxic by USP Class VI biological test for plastics
Virus Aerosol Retention	Retention of a worst case challenge of the model bacteriophage Φ X-174 was complete at challenge levels at 10 ⁸ to 10 ¹⁰ virus particles at 1400 sL/min (50scfm) after 50 steam sterilization cycles of 30 minutes at 145°C.

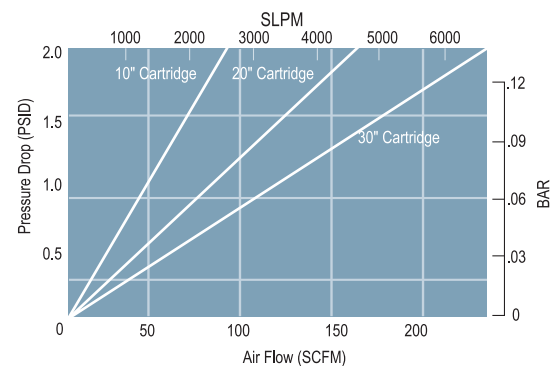
Sanitizing Agents

Chlorine, hydrogen peroxide, autoclaved for 20 minutes at 121°C under no load conditions.

Integrity Test

Bubble point @ 23°C	≥ 13 psig (≥ 900 mbar) nitrogen with 60/40% IPA/Water
Nitrogen Diffusion @ 23°C	≥ 45 mL/min @ 690 mbar (10 psig) in 60/40% IPA/Water

AIR FLOW RATES AT NEAR ATMOSPHERIC PRESSURE
(VENT APPLICATIONS)



ORDERING INFORMATION

Catalog Number and Description

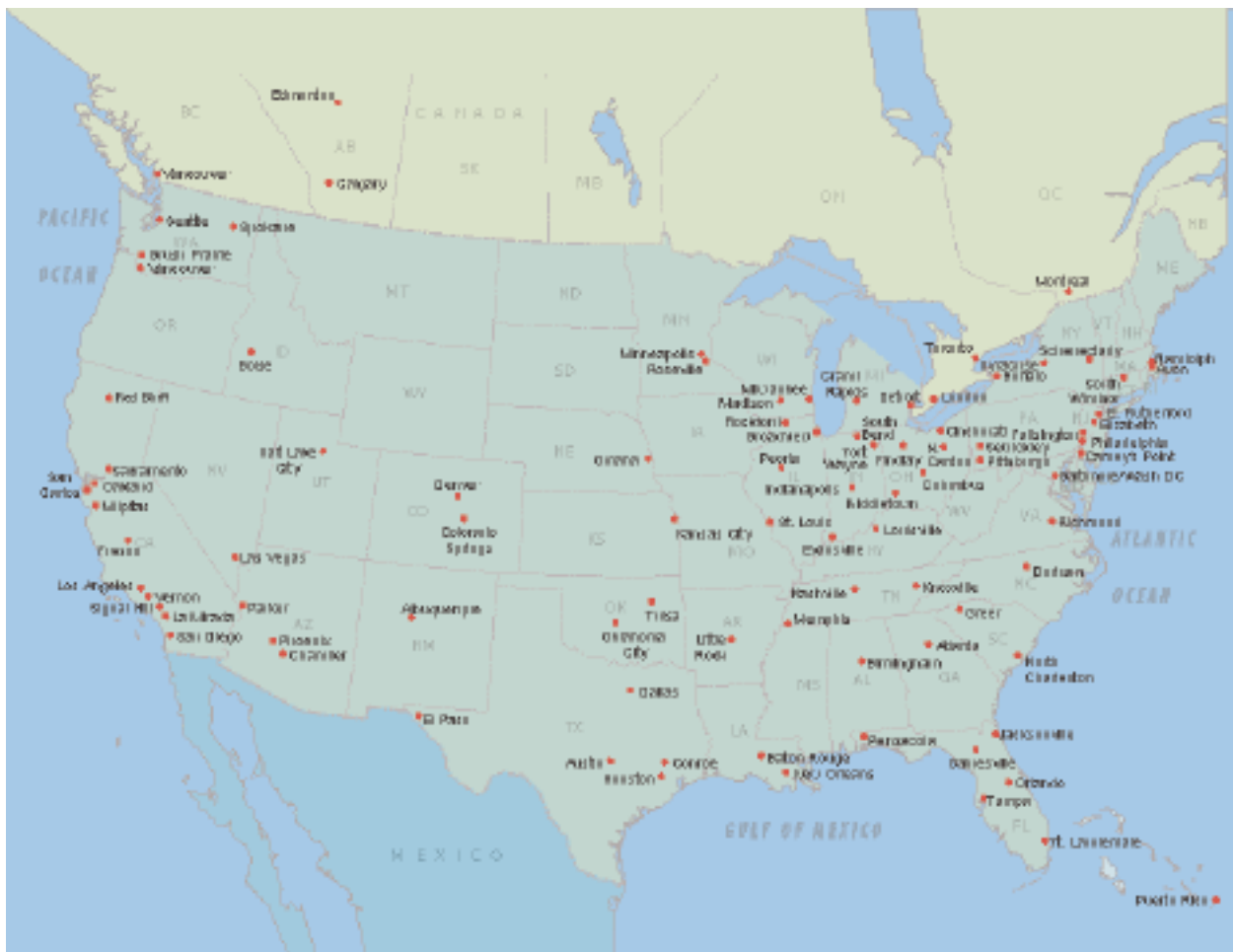
FCVP	Filter cartridge vent polysulfone
X	Cartridge Code: 0 = 2-222 o-rings 5 = 2-222 o-rings w/spear end 7 = 2-226 o-rings w/locking tabs/spear end
XX	Length (in): 10 = 10, 20 = 20, 30 = 30
S2	Micron Rating: S2 = 0.2 µm

To figure your order number, replace the X with one of the numbered or lettered options beside it. Note: Not all part number combinations are available; consult Technical Support for assistance.

NOTE: These filter cartridges should not be used as a combination air vent/water overflow device.

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