

Fluorogard® All-PTFE High- Retention Filters

All-PTFE filtration solutions for advanced WEC processes ensure broad chemical compatibility, high flow, and superior cleanliness

Fluorogard® all-PTFE liquid filters offer cost-effective filtration solutions for advanced wet etch and clean (WEC) processes and elevated temperature applications. Ideal for medium- to high-flow extended lifetime applications, these high-retention filters remove particles from a wide range of acids, bases, and other process chemicals.

Fluorogard filters reduce setup time and increase system uptime, keeping operational costs at a minimum. The hydrophobic PTFE membrane increases surface area, improves flow, and minimizes pressure drop without compromising performance or particle removal capabilities. The all-PTFE fluoropolymer materials and thermally bonded construction minimize chloride and metals extractables and other contaminants that can impact yield and throughput.

Fluorogard filters are available in several configurations and options. Fluorogard prewet cartridge filters ship "waterwet" to allow for rapid startup in aqueous chemicals while avoiding alcohol-chemical interactions. The prewet format eliminates potential contamination sources along with the inconvenience of hazardous waste disposal of isopropyl alcohol (IPA). The ultraclean metals (UCM) option of Fluorogard ATE and AT3 is targeted to critical organic solvent delivery systems.



FEATURES & BENEFITS

Superior retention	Utilizes retention ratings from 10 µm to 15 nm
	Removes particles from a wide range of acids, bases and other process chemicals
	Requires minimal setup time, promoting a lower COO in advanced WEC processes
Rugged materials of construction	Ideal for medium to high-flow extended lifetime applications
	Hydrophobic PTFE membrane
	<ul style="list-style-type: none"> Increases surface area Improves flow Minimizes pressure drop
Cost-effective filter options	All-PTFE fluoropolymer materials and thermally bonded construction
	<ul style="list-style-type: none"> Ensure excellent chemical compatibility Minimize chloride and metals extractables that can impact process performance Enable low particle shedding to increase yield and throughput
	<ul style="list-style-type: none"> Ultraclean metals option (ATE and AT3) 15 nm and 20 nm retention ratings Specially designed for critical organic solvent delivery systems
	<ul style="list-style-type: none"> Prewet cartridge filter ships "waterwet" (ATE) Allows for rapid startup in aqueous chemicals Prevents alcohol-chemical interactions Avoids potential contamination sources and the inconvenience of hazardous waste

SPECIFICATIONS

	AT	ATX	ATE	AT3
Materials of construction	Membrane	Hydrophobic PTFE		
	Supports, sleeve, end caps, core	PFA		
	Cartridge O-ring options	E-FKM, E-ETP, Chemraz [®] , Kalrez [®] , FER		
Retention rating (See Note 1)	0.05, 0.1, 0.2, 0.5, 1.0, 5.0, 10.0 µm (See Note 2)		15, 20 nm 0.03, 0.05, 0.1 µm UCM option: 15, 20 nm (See Note 2)	UCM option: 15 nm
Membrane surface area	4": 0.36 m ² (3.88 ft ²)	4": 0.5 m ² (5.38 ft ²)	10": 2.2 m ² (23.86 ft ²)	10": 2.8 m ² (30.14 ft ²)
	10": 0.9 m ² (9.68 ft ²)	10": 1.3 m ² (13.99 ft ²)	15/20 nm: 10": 2.1 m ² (22.6 ft ²)	
	20": 1.8 m ² (19.38 ft ²)	20": 2.6 m ² (27.99 ft ²)	20": 4.4 m ² (47.36 ft ²)	
	30": 2.7 m ² (29.06 ft ²)			
Particle cleanliness	≤50 particles/10 mL (≥0.05 µm/10 mL) after 5 minutes flushing at 3 – 5 L/min			
Metallic extractables	Cartridge	Standard <40 µg per device		
		UCM <10 µg per device		
	Disposable	Standard <10 µg per device		
	UCM <3 µg per device			

Note 1: Retention ratings of 0.03 µm, 15 nm, and 20 nm are used in solvent filtration as a UCM product—no prewet option.

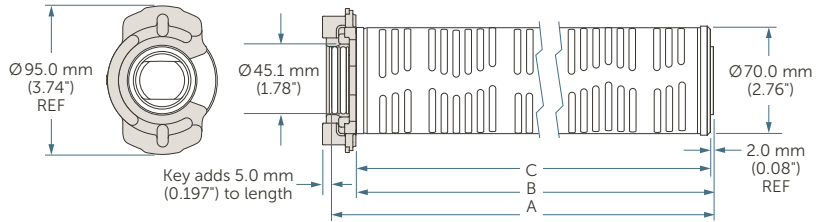
Note 2: Prewet option is available for retention ratings 0.05 µm to 1.0 µm. Contact your local Entegris representative for your specific product requirements.

		CARTRIDGE	DISPOSABLE	DISPOSABLE (TUBE TYPE)
Operating conditions	Maximum operating pressure	0.58 MPa (5.8 bar, 84 psi @ 25°C [77°F])	0.58 MPa (5.8 bar, 84 psi @ 25°C [77°F])	0.58 MPa (5.8 bar, 84 psi @ 25°C [77°F])
	Maximum forward differential pressure	0.44 MPa (4.4 bar, 64 psi @ 25°C [77°F])	0.44 MPa (4.4 bar, 64 psi @ 25°C [77°F])	0.44 MPa (4.4 bar, 64 psi @ 25°C [77°F])
		0.05 MPa (0.5 bar, 7.5 psi @ 180°C [356°F])	0.05 MPa (0.5 bar, 7.5 psi @ 180°C [356°F])	0.05 MPa (0.5 bar, 7.5 psi @ 180°C [356°F])
	Maximum reverse pressure	0.34 MPa (3.4 bar, 50 psi @ 25°C [77°F])	0.34 MPa (3.4 bar, 50 psi @ 25°C [77°F])	0.34 MPa (3.4 bar, 50 psi @ 25°C [77°F])
	Maximum operating temperature	180°C (356°F)	180°C (356°F)	150°C (302°F)
		Flowell™ 60 Series disposable — 100°C (212°F)		

Fluorogard AT/ATX/ATE/AT3 Cartridge Filters

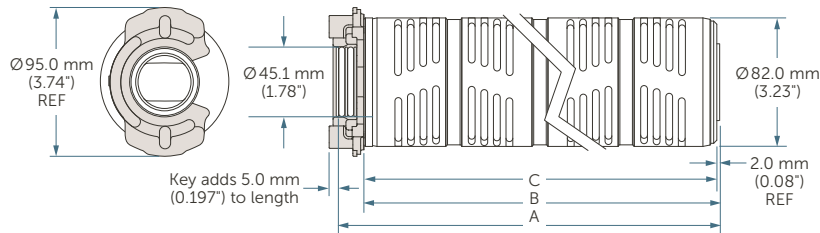
DIMENSIONS

Fluorogard AT Cartridge Filter



Length	A (Overall)	B (Control)	C (Shoulder)
4"	132.3 mm (5.21")	115.0 mm (4.53")	113.0 mm (4.45")
10"	262.3 mm (10.33")	245.0 mm (9.65")	243.0 mm (9.57")
20"	498.3 mm (19.62")	481.0 mm (18.94")	479.0 mm (18.86")
30"	738.3 mm (29.07")	721.0 mm (28.39")	719.0 mm (28.31")

Fluorogard ATX/ATE/AT3 Cartridge Filter

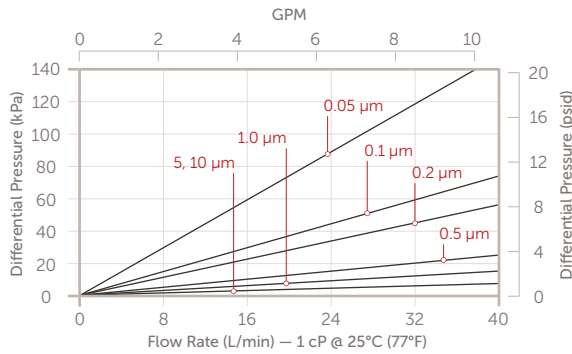


Length	A (Overall)	B (Control)	C (Shoulder)
4"	127.3 mm (5.01")	110.0 mm (4.33")	108.5 mm (4.27")
10"	244.0 mm (9.61")	227.0 mm (8.94")	225.0 mm (8.86")
20"	471.0 mm (18.54")	454.0 mm (17.87")	452.0 mm (17.80")

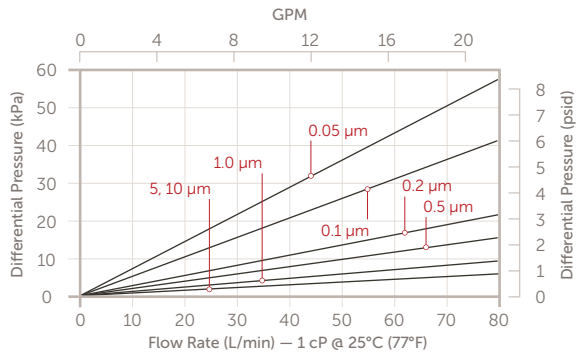
PERFORMANCE DATA

Fluorogard AT Cartridge Filters

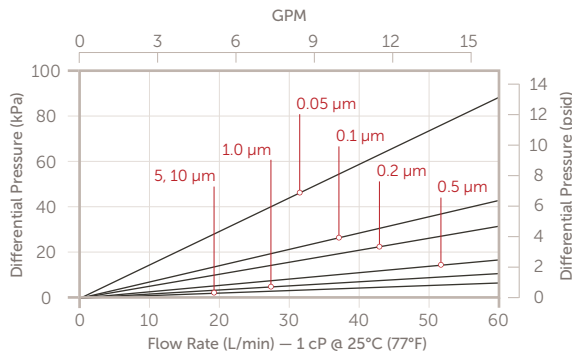
Fluorogard AT 4" Cartridge Filters



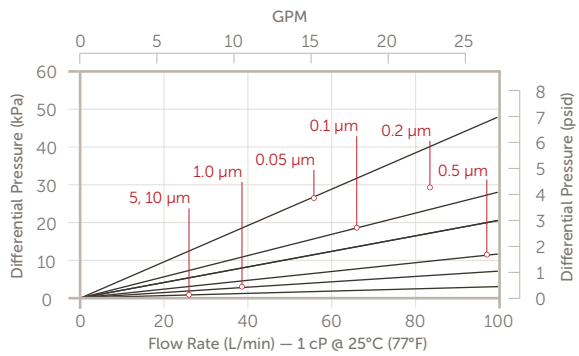
Fluorogard AT 20" Cartridge Filters



Fluorogard AT 10" Cartridge Filters

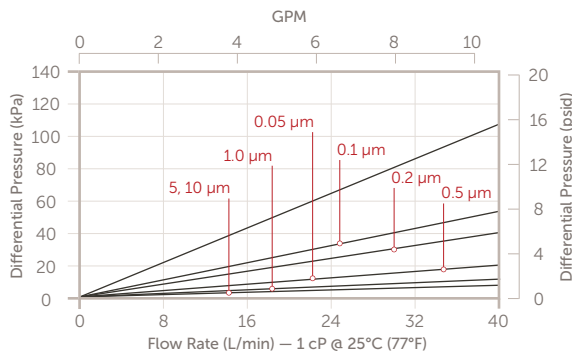


Fluorogard AT 30" Cartridge Filters

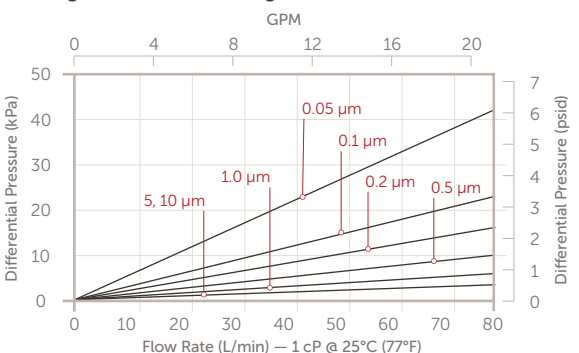


Fluorogard ATX Cartridge Filters

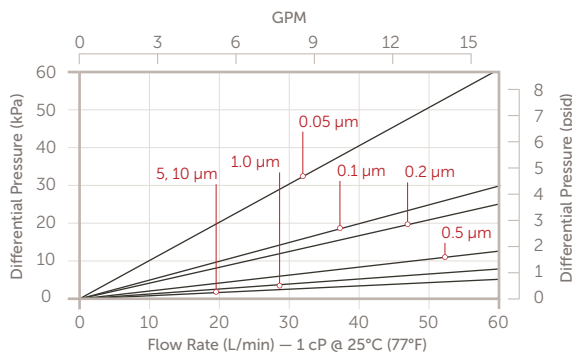
Fluorogard ATX 4" Cartridge Filters



Fluorogard ATX 20" Cartridge Filters



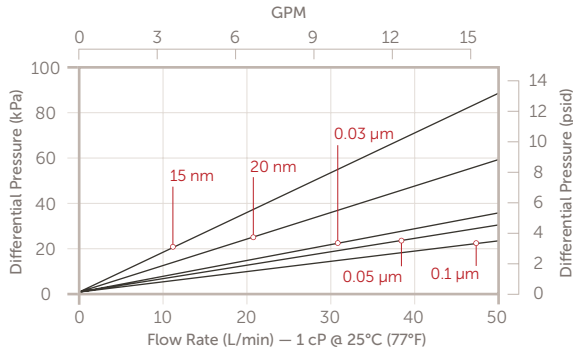
Fluorogard ATX 10" Cartridge Filters



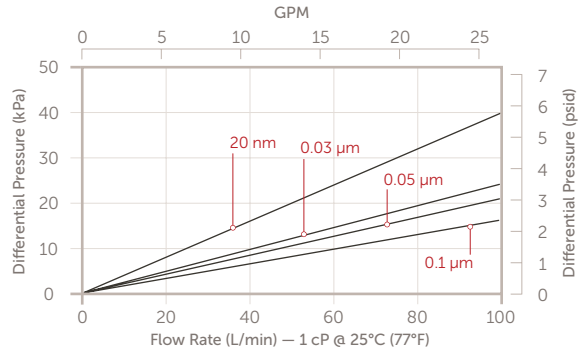
PERFORMANCE DATA (CONTINUED)

Fluorogard ATE/AT3 Cartridge Filters

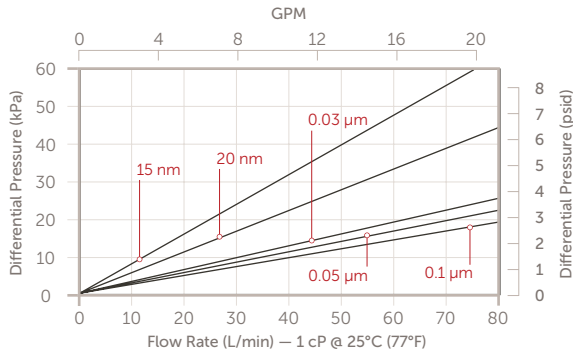
Fluorogard ATE 10" Cartridge Filters



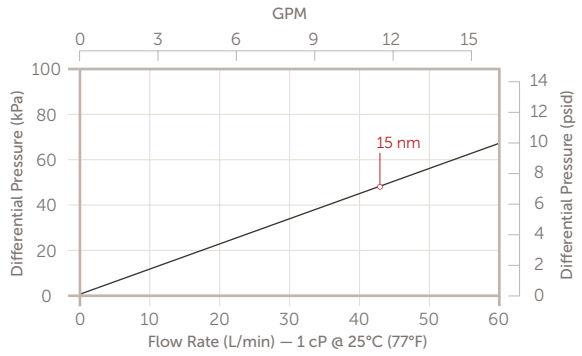
Fluorogard ATE 30" Cartridge Filters



Fluorogard ATE 20" Cartridge Filters



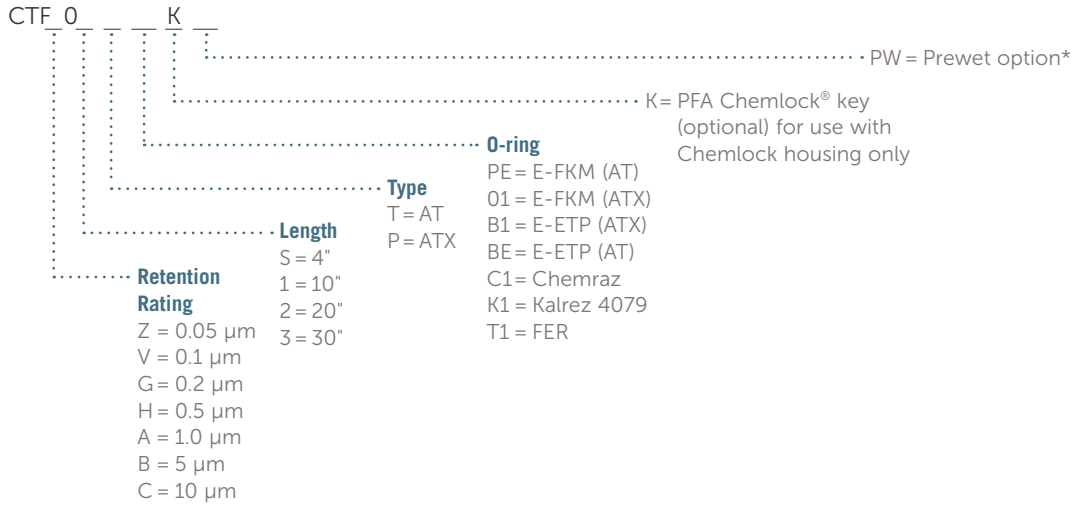
Fluorogard AT3 15 nm 10" Cartridge Filters



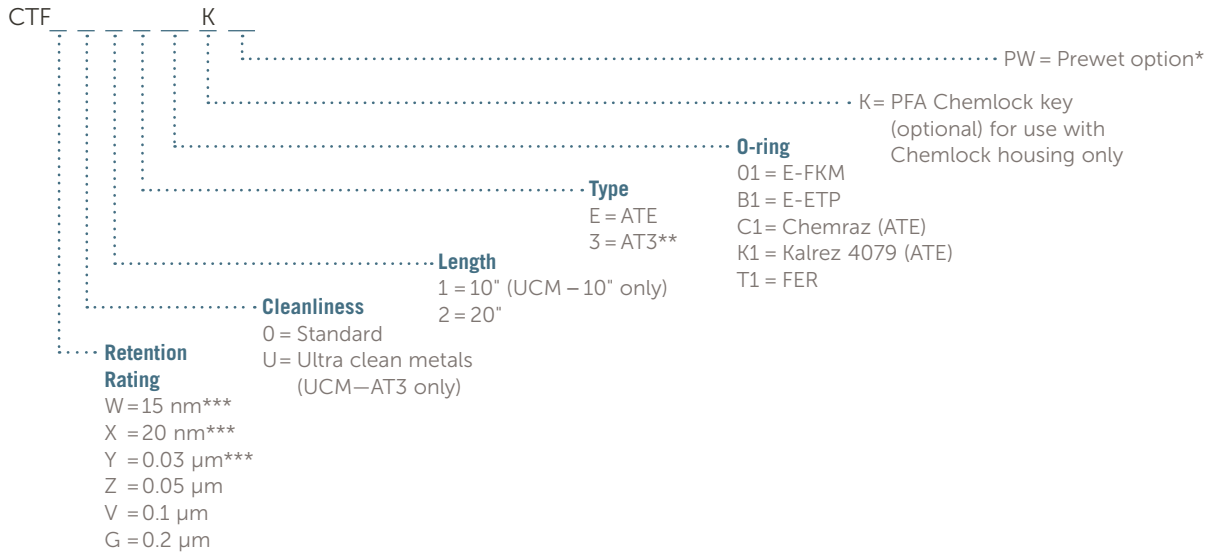
ORDERING INFORMATION

This information serves as a guide. Please contact your local representative to confirm part numbers. Retention ratings vary depending on the filter. Refer to Specifications for more information.

Fluorogard AT/ATX Cartridge Filters: part number



Fluorogard ATE/AT3 Cartridge Filters: part number



*Prewet option is available for retention ratings 0.05 µm to 0.2 µm. Contact your local Entegris representative for your specific product requirements.

**AT3 available in 15 nm only.

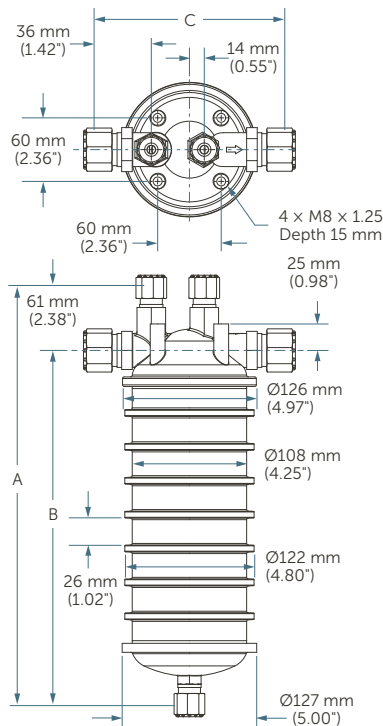
***Available in dry configuration only.

Fluorogard Chem-Line™ I and II Disposable Filters

DIMENSIONS

The following drawings represent the broad range of Fluorogard Chem-Line I and Chem-Line II filter categories. Refer to the accompanying tables for dimensional information pertaining to each disposable type.

Chem-Line I T-line Standard Vent (T02H, T42H)



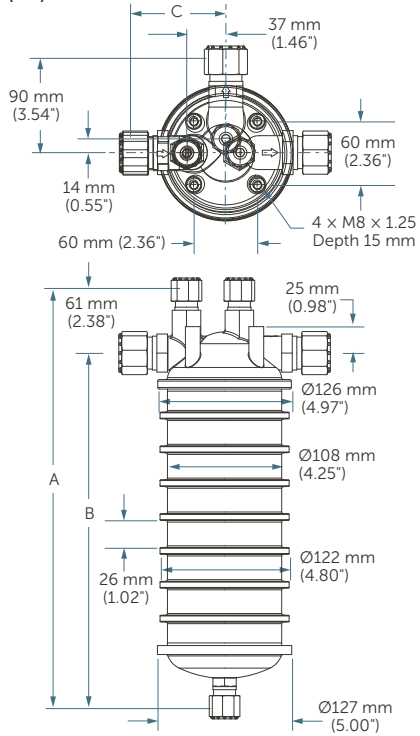
Nominal Dimensions for Chem-Line I T-Line Standard Vent (Fluorogard ATX, ATE, AT3)

Category	Disposable type	Length	A (Overall height)	B (Height: bottom fitting to centerline inlet fitting)	C (Inlet to outlet)
T-line	TH: 3/4" inlet/outlet, 1/2" vent/drain, Super Type Pillar® fittings	10"	396 mm (15.58")	335 mm (13.19")	180 mm (7.09")
	4H: 1" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	402 mm (15.82")	341 mm (13.43")	188 mm (7.40")

Nominal Dimensions for Chem-Line I T-Line Standard Vent (Fluorogard AT)

Category	Disposable type	Length	A (Overall height)	B (Height: bottom fitting to centerline inlet fitting)	C (Inlet to outlet)
T-line	TH: 3/4" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	412 mm (16.21")	351 mm (13.82")	180 mm (7.09")

Chem-Line I L-line Standard Vent
(LH)



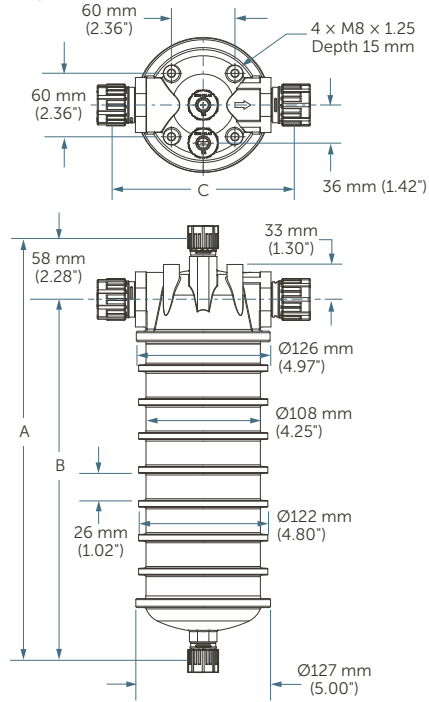
Nominal Dimensions for Chem-Line I L-Line Standard Vent (Fluorogard ATX, ATE, AT3)

Category	Disposable type	Length	A (Overall height)	B (Height: bottom fitting to centerline inlet fitting)	C (Inlet to outlet)
L-line	LH: 3/4" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	412 mm (16.21")	351 mm (13.82")	90 mm (3.54")

Nominal Dimensions for Chem-Line I L-Line Standard Vent (Fluorogard AT)

Category	Disposable type	Length	A (Overall height)	B (Height: bottom fitting to centerline inlet fitting)	C (Inlet to outlet)
L-line	LH: 3/4" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	412 mm (16.21")	351 mm (13.82")	90 mm (3.54")

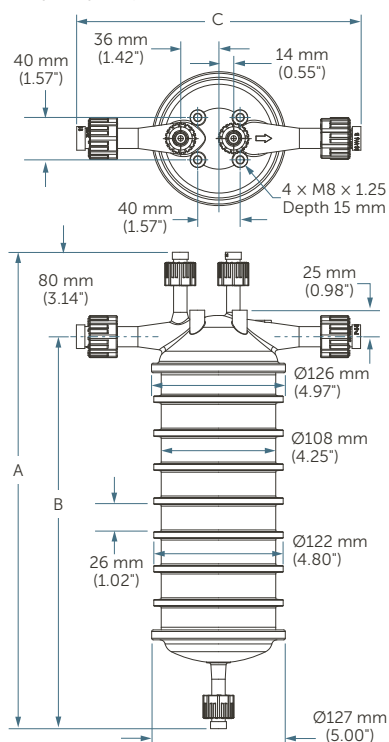
Chem-Line I T-line Rotated Vent
(3S, 4S)



Nominal Dimensions for Chem-Line I T-Line Rotated Vent (Fluorogard ATX, ATE, AT3)

Category	Disposable type	Length	A (Overall height)	B (Height: bottom fitting to centerline inlet fitting)	C (Inlet to outlet)
T-line	3S: 3/4" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	399 mm (15.70")	341 mm (13.43")	172 mm (6.77")
	4S: 1" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	399 mm (15.70")	341 mm (13.43")	182 mm (7.17")

Chem-Line I T-tube Standard Vent
(TT, TP, T3, TW, TF, TF6, TFW,
TFP, TF3, TFF)



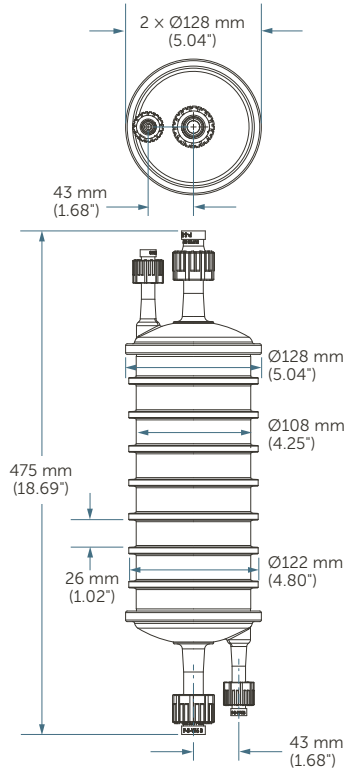
Nominal Dimensions for Chem-Line I T-tube Fittings (Fluorogard ATX, ATE, AT3)

Category	Disposable type	Length	A (Overall height)	B (Height: bottom fitting to centerline inlet fitting)	C (Inlet to outlet)
T-tube	TT: 3/4" inlet/outlet, 1/2" vent/drain, tube	10"	436 mm (17.17")	—	—
		4"	320 mm (12.60")	—	—
	TP: 3/4" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	450 mm (17.71")	370 mm (14.57")	272 mm (10.69")
		4"	334 mm (13.14")	254 mm (10.00")	272 mm (10.69")
	T3: 3/4" inlet/outlet, 1/2" vent/drain, Super 300 Type Pillar fittings	10"	449 mm (17.69")	369 mm (14.53")	268 mm (10.55")
	TW: 3/4" inlet/outlet, 1/2" vent/drain, Flowell 20 Series fittings	10"	436 mm (17.17")	363 mm (14.29")	252 mm (9.92")
	TF: 3/4" inlet/outlet, 1/2" vent/drain, FlareLock® II fittings	10"	436 mm (17.17")	363 mm (14.29")	252 mm (9.92")

Nominal Dimensions for Chem-Line I T-Tube Fittings (Fluorogard AT)

Category	Disposable type	Length	A (Overall height)	B (Height: bottom fitting to centerline inlet fitting)	C (Inlet to outlet)
T-tube	TT: 3/4" inlet/outlet, 1/2" vent/drain, tube	10"	453 mm (17.81")	–	–
		4"	327 mm (12.85")	–	–
	TF6: 3/4" inlet/outlet, 1/2" vent/drain, Flowell 60 Series fittings	4"	327 mm (12.85")	254 mm (10.00")	252 mm (9.92")
	TFW: 3/4" inlet/outlet, 1/2" vent/drain, Flowell 20 Series fittings	10"	453 mm (17.81")	380 mm (14.96")	252 mm (9.92")
		4"	327 mm (12.85")	254 mm (10.00")	252 mm (9.92")
	TFP: 3/4" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	466 mm (18.36")	386 mm (15.20")	272 mm (10.69")
		4"	340 mm (13.40")	260 mm (10.25")	272 mm (10.69")
	TF3: 3/4" inlet/outlet, 1/2" vent/drain, Super 300 Type Pillar fittings	10"	466 mm (18.34")	386 mm (15.20")	268 mm (10.55")
		4"	340 mm (13.40")	260 mm (10.25")	268 mm (10.55")
	TFF: 3/4" inlet/outlet, 1/2" vent/drain, FlareLock II fittings	10"	453 mm (17.81")	380 mm (14.96")	252 mm (9.92")
		4"	327 mm (12.85")	254 mm (10.00")	252 mm (9.92")

Chem-Line I S-tube Standard Vent
(ST, STW, STP, ST3, STF, SF,
SF3, SF6, SFF, SFW, SFP)



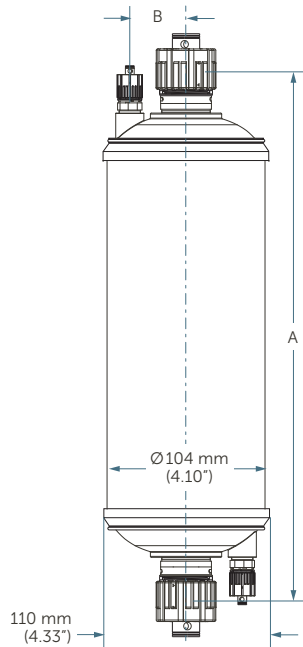
Nominal Dimensions for Chem-Line I S-Tube Fittings (Fluorogard ATX, ATE, AT3)

Category	Disposable type	Length	A (Overall height)
S-tube	ST: 3/4" inlet/outlet, 1/2" vent/drain, tube	10"	459 mm (18.06")
		4"	343 mm (13.50")
	STW: 3/4" inlet/outlet, 1/2" vent/drain, Flowell 20 Series fittings	10"	459 mm (18.06")
		4"	336 mm (13.21")
	STP: 3/4" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	478 mm (18.82")
		4"	362 mm (14.26")
	ST3: 3/4" inlet/outlet, 1/2" vent/drain, Super 300 Type Pillar fittings	10"	475 mm (18.69")
		4"	359 mm (14.13")
	STF: 3/4" inlet/outlet, 1/2" vent/drain, FlareLock II fittings	10"	459 mm (18.06")
		4"	343 mm (13.50")

Nominal Dimensions for Chem-Line I S-Tube Fittings (Fluorogard AT)

Category	Disposable type	Length	A (Overall height)
S-tube	SF: 3/4" inlet/outlet, 1/2" vent/drain, tube	10"	475 mm (18.71")
		4"	349 mm (13.75")
	SF3: 3/4" inlet/outlet, 1/2" vent/drain, Super 300 Type Pillar fittings	10"	491 mm (19.34")
		4"	365 mm (14.35")
	SF6: 3/4" inlet/outlet, 1/2" vent/drain, Flowell 60 Series fittings	10"	349 mm (13.75")
		4"	475 mm (18.71")
	SFF: 3/4" inlet/outlet, 1/2" vent/drain, FlareLock II fittings	10"	344 mm (13.56")
		4"	476 mm (18.75")
	SFW: 3/4" inlet/outlet, 1/2" vent/drain, Flowell 20 Series fittings	10"	349 mm (13.75")
		4"	495 mm (19.48")
	SFP: 3/4" inlet/outlet, 1/2" vent/drain, Super Type Pillar fittings	10"	369 mm (14.52")
		4"	343 mm (13.50")

Chem-Line II
 (Flaretek®, Flowell 60 Series,
 Super 300 Type Pillar)



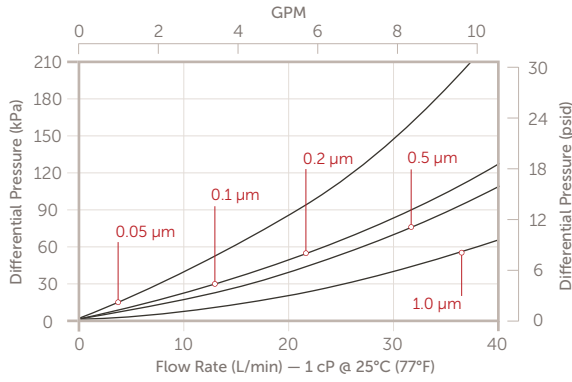
Nominal Dimensions for Chem-Line II

Fittings		Flaretek			Flowell 60 series		Super 300 Type Pillar (male)		
Inlet/ outlet	Vent/ drain	B	A		A		A		
			4"	10"	4"	10"	B	4"	10"
3/8"	1/4"	37 mm (1.46")	230 mm (9.06")	343 mm (13.51")	—	—	—	—	—
1/2"	1/4"	37 mm (1.46")	243 mm (9.58")	356 mm (14.03")	—	—	41 mm (1.63")	228 mm (9.96")	341 mm (13.41")
3/4"	1/4"	37 mm (1.46")	246 mm (9.68")	359 mm (14.13")	248 mm (9.77")	361 mm (14.22")	37 mm (1.46")	237 mm (9.32")	350 mm (13.77")
3/4"	1/2"	41 mm (1.63")	250 mm (9.85")	363 mm (14.30")	241 mm (9.49")	354 mm (13.94")	41 mm (1.63")	236 mm (9.29")	349 mm (13.74")
1"	1/4"	37 mm (1.46")	255 mm (10.02")	368 mm (14.47")	258 mm (10.16")	371 mm (14.61")	37 mm (1.46")	270 mm (10.62")	383 mm (15.07")
1"	1/2"	41 mm (1.63")	263 mm (10.37")	376 mm (14.82")	253 mm (9.96")	366 mm (14.41")	41 mm (1.63")	267 mm (10.53")	380 mm (14.97")

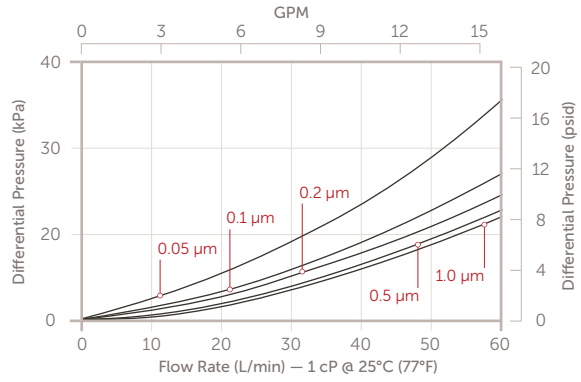
PERFORMANCE DATA

Fluorogard AT Disposable Filters

Fluorogard AT 4" Disposable with 3/4" Fittings

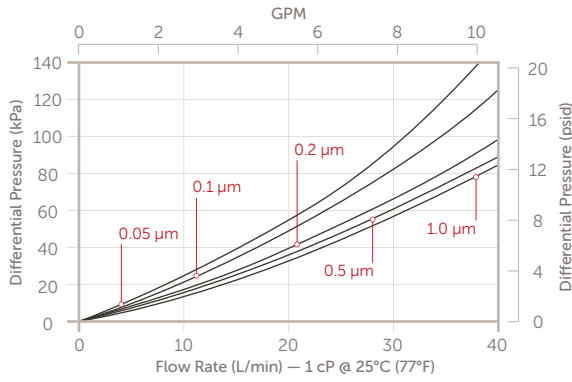


Fluorogard AT 10" Disposable with 3/4" Fittings

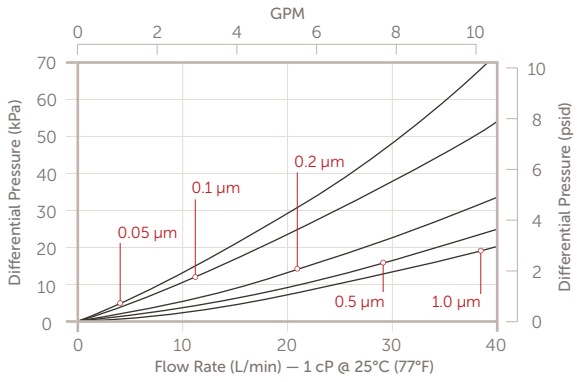


Fluorogard ATX Disposable Filters

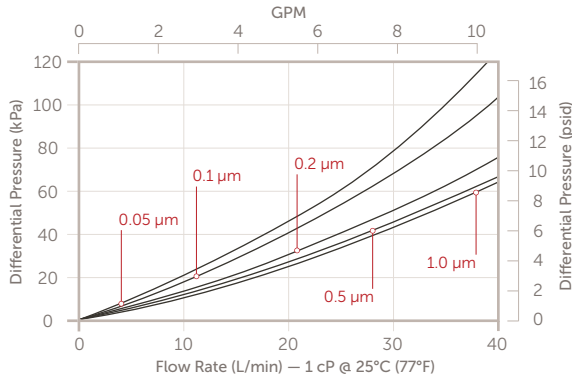
Fluorogard ATX 4" Disposable with 3/8" Fittings



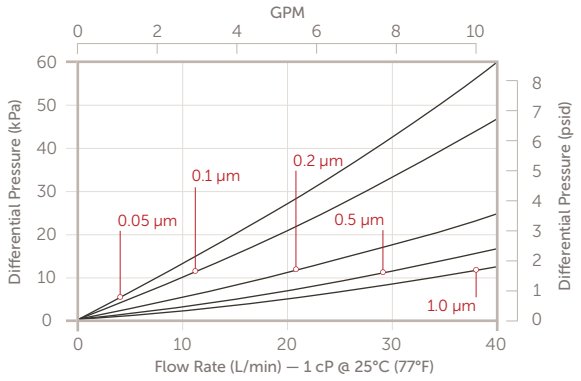
Fluorogard ATX 4" Disposable with 3/4" Fittings



Fluorogard ATX 4" Disposable with 1/2" Fittings



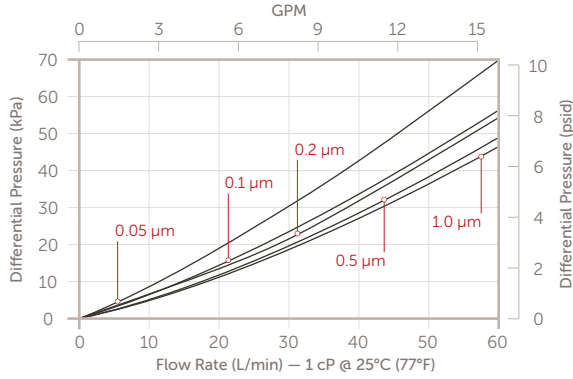
Fluorogard ATX 4" Disposable with 1" Fittings



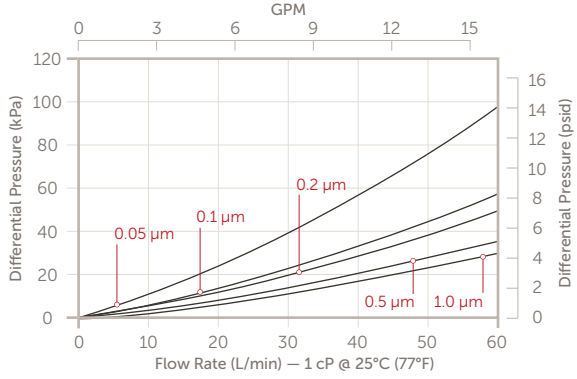
PERFORMANCE DATA (CONTINUED)

Fluorogard ATX 10" Disposable Filters

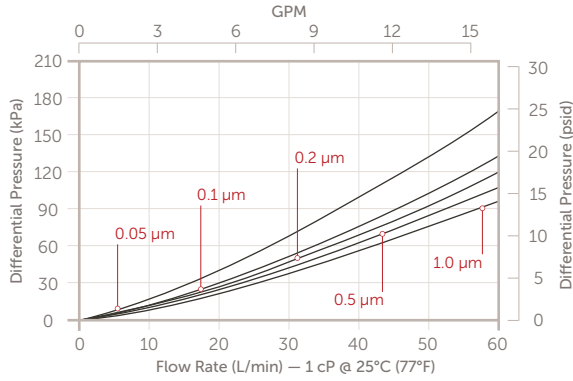
Fluorogard ATX 10" Disposable with 3/8" Fittings



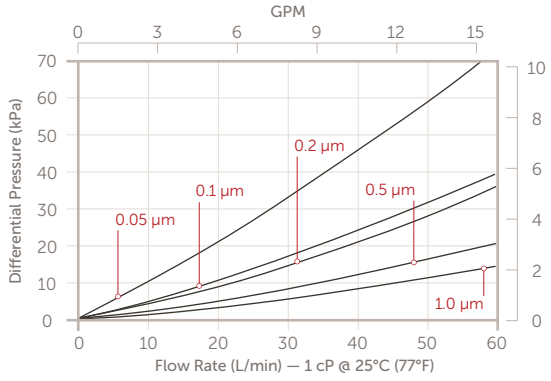
Fluorogard ATX 10" Disposable with 3/4" Fittings



Fluorogard ATX 10" Disposable with 1/2" Fittings



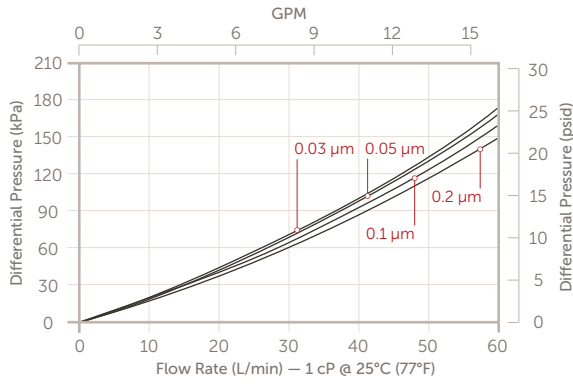
Fluorogard ATX 10" Disposable with 1" Fittings



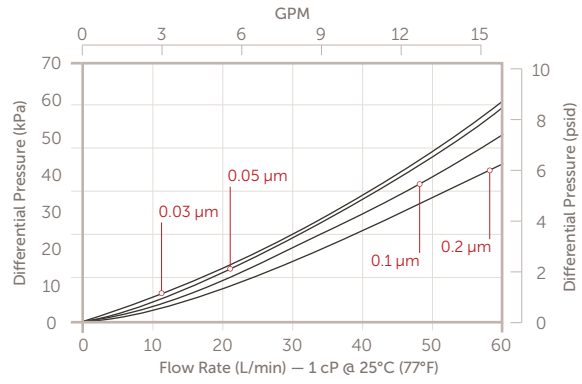
PERFORMANCE DATA (CONTINUED)

Fluorogard ATE 10" Disposable Filters

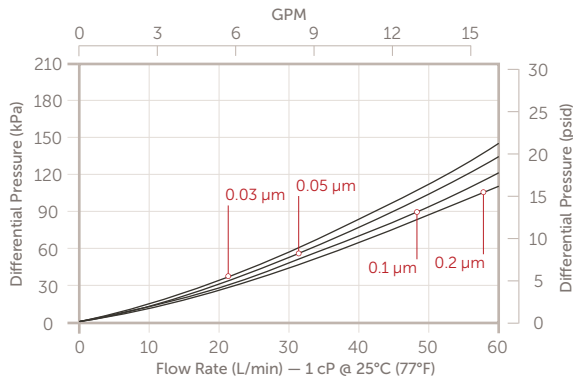
Fluorogard ATE 10" Disposable with 3/8" Fittings



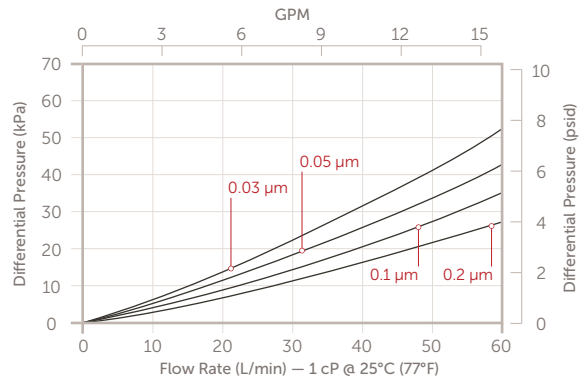
Fluorogard ATE 10" Disposable with 3/4" Fittings



Fluorogard ATE 10" Disposable with 1/2" Fittings



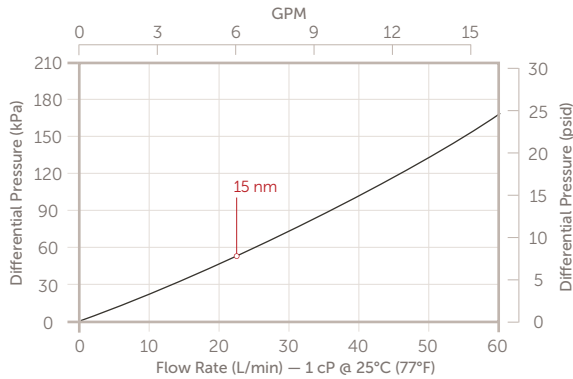
Fluorogard ATE 10" Disposable with 1" Fittings



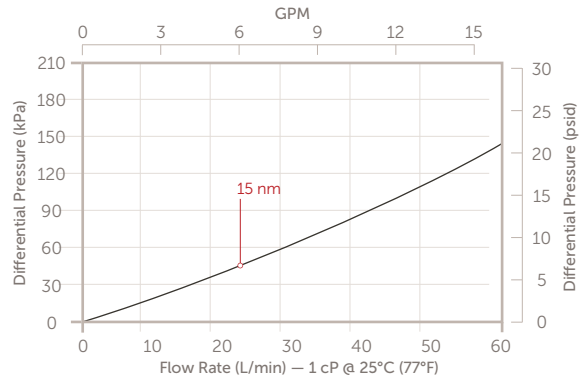
PERFORMANCE DATA (CONTINUED)

Fluorogard AT3 Disposable Filters

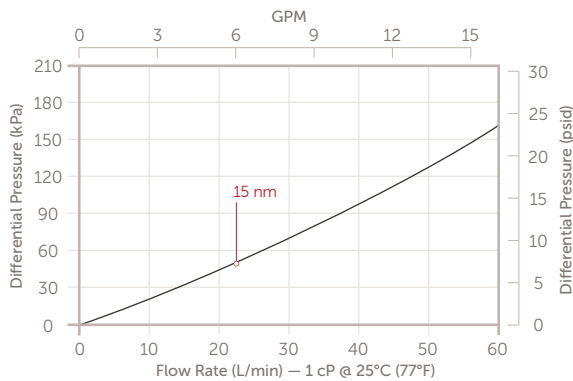
Fluorogard AT3 10" Disposable with 1/2" Fittings



Fluorogard AT3 10" Disposable with 1" Fittings



Fluorogard AT3 10" Disposable with 3/4" Fittings



ORDERING INFORMATION

This information serves as a guide. Please contact your local representative to confirm part numbers. Retention ratings vary depending on the filter. Refer to Specifications for more information.

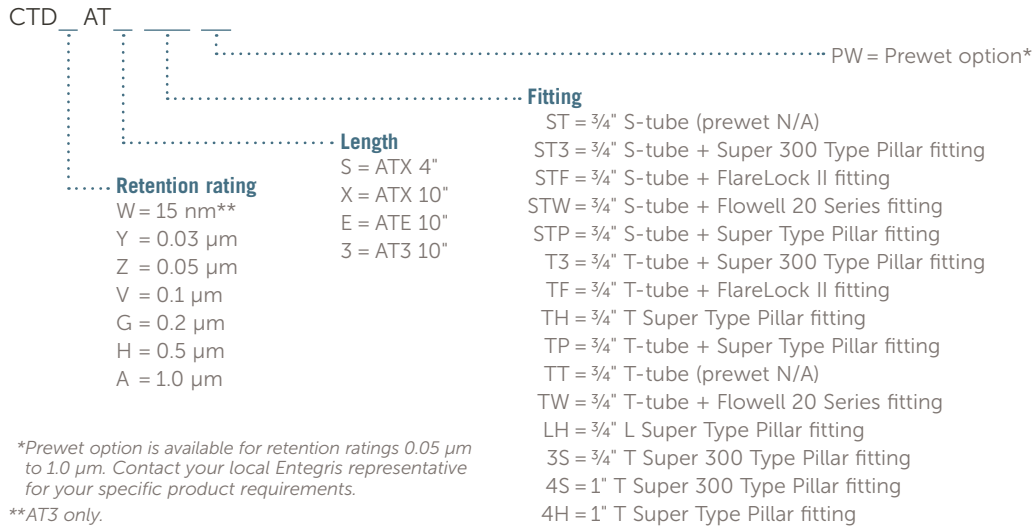
Fluorogard AT Chem-Line I Disposable Filters: part number

CTF_0_P

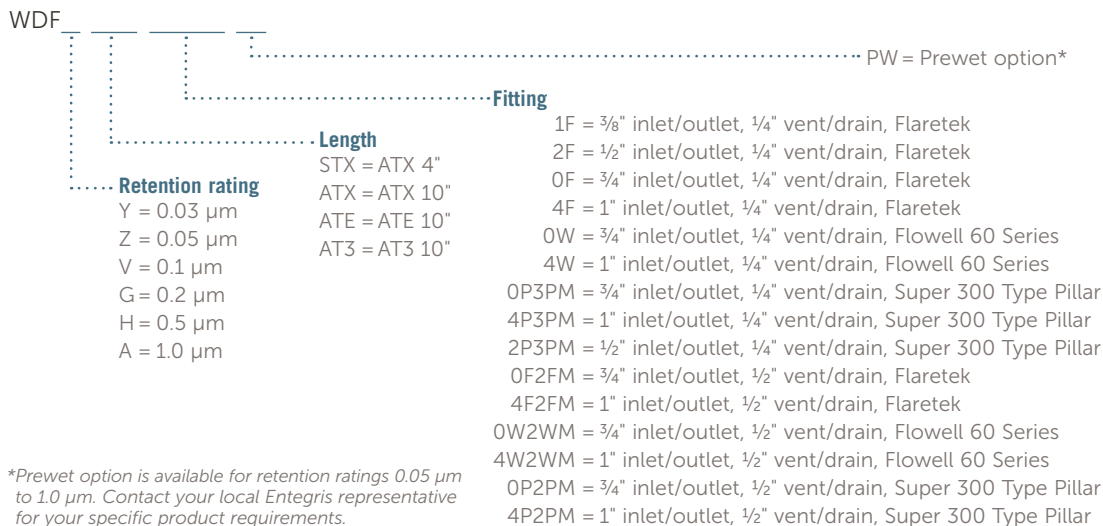
- Retention rating**
 - Z = 0.05 μm
 - V = 0.1 μm
 - G = 0.2 μm
 - H = 0.5 μm
 - A = 1.0 μm
- Length**
 - S = 4"
 - 1 = 10"
- Fitting**
 - TF = 3/4" T-tube (prewet N/A)
 - TFP = 3/4" T-tube + Super Type Pillar fitting
 - TF3 = 3/4" T-tube + Super 300 Type Pillar fitting
 - TF6 = 3/4" T-tube + Super 600 Type Pillar fitting
 - TFF = 3/4" T-tube + FlareLock II fitting
 - TFW = 3/4" T-tube + Flowell 20 Series fitting
 - TF6 = 3/4" T-tube + Flowell 60 Series fitting
 - SF = 3/4" S-tube (prewet N/A)
 - SFP = 3/4" S-tube + Super Type Pillar fitting
 - SF3 = 3/4" S-tube + Super 300 Type Pillar fitting
 - SFF = 3/4" S-tube + FlareLock II fitting
 - SFW = 3/4" S-tube + Flowell 20 Series fitting
 - SF6 = 3/4" S-tube + Flowell 60 Series fitting
 - LH = 3/4" L Super Type Pillar fitting
 - TH = 3/4" T Super Type Pillar fitting

ORDERING INFORMATION (CONTINUED)

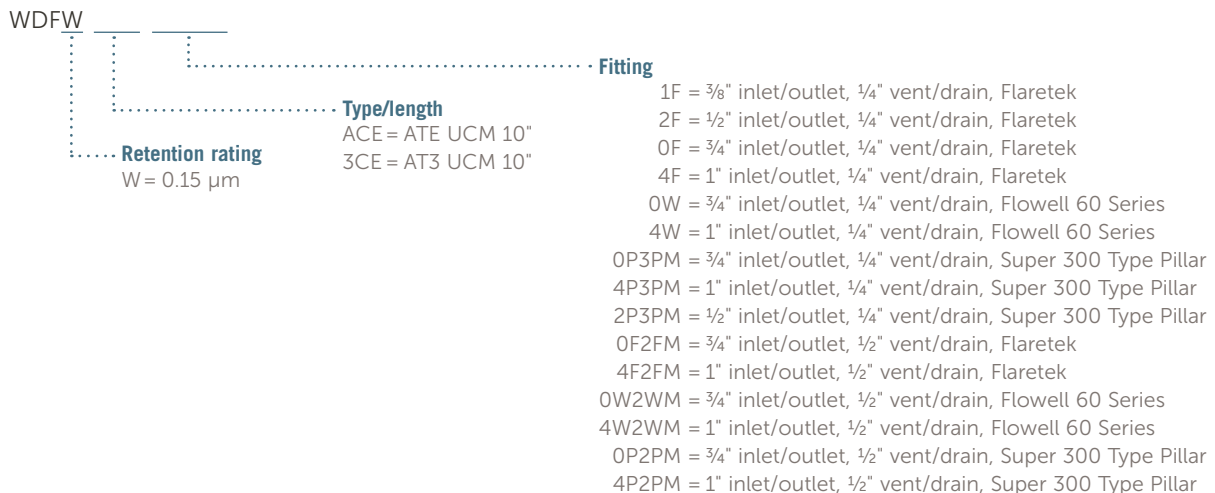
Fluorogard ATX/ATE/AT3 Chem-Line I Disposable Filters: part number



Fluorogard ATX/ATE/AT3 Chem-Line II Disposable Filters: part number



Fluorogard ATE/AT3 Chem-Line II UCM Disposable Filters: part number



FOR MORE INFORMATION

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