



Inline Filters (F Series)

*Catalog 4130-F
July 2005*



Introduction

Parker F Series Inline Filters are designed for protection of instrumentation systems from undesirable materials. Component changes or repair and maintenance can admit dirt, chips, scale, or other contaminants to the small bore tubing.

Features

- ▶ Compact inline design with large filtration area
- ▶ Stainless steel and brass construction
- ▶ Replaceable sintered 316 stainless steel filter element
- ▶ Standard sintered metal micron ratings:
1, 5, 10, 50, and 100
- ▶ Optional 250 and 450 micron wire cloth filter elements
- ▶ Port connections include male and female NPT, CPI™, A-LOK®, UltraSeal, VacuSeal, BSP, SAE, and Seal-Lok®
- ▶ Heat code traceability

Materials of Construction

Item #	Part	Stainless Steel Filter	Brass Filter
1	Body	ASTM A 276, TYPE 316	ASTM B 16, Alloy C36000
2	Spring	316 Stainless Steel	
3	Filter Element	316 Stainless Steel	
4	Guide Ring	PTFE	
5	Seal*	Fluorocarbon Rubber*	
6	Cap	ASTM A 276, TYPE 316	ASTM B 16, Alloy C36000

* Optional seal materials are available. See [How to Order](#) section.
Lubrication: Silicone Paste

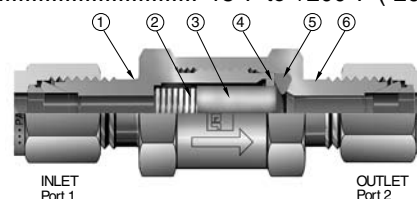
Specifications

Pressure Rating

316 SS - 1/8" to 3/4":6000 psig (414 bar) CWP
1":5000 psig (345 bar) CWP
All sizes with PTFE Seals:4000 psig (276 bar) CWP
Brass - 1/8" to 1":3000 psig (207 bar) CWP

Temperature Rating

Fluorocarbon Rubber.....-15°F to +400°F (-26°C to +204°C)
Buna-N Rubber.....-30°F to +275°F (-34°C to +135°C)
Ethylene Propylene Rubber
.....-70°F to +275°F (-57°C to +135°C)
Neoprene Rubber.....-45°F to +250°F (-43°C to +121°C)
PTFE-65°F to +400°F (-54°C to +204°C)
Highly Fluorinated Fluorocarbon Rubber
.....-15°F to +200°F (-26°C to +93°C)



Model shown: 4A-F4L-50-SS

Note: Flow direction reversed with wire mesh elements.

Flow Calculations with 100 psig (7 bar) Inlet Pressure

Pressure Drop ΔP	F2L		F4L		F6L		F8L		F12L		F16L	
	Water gpm at 60°F (16°C)	Air scfm at 60°F (16°C)	Water gpm at 60°F (16°C)	Air scfm at 60°F (16°C)	Water gpm at 60°F (16°C)	Air scfm at 60°F (16°C)	Water gpm at 60°F (16°C)	Air scfm at 60°F (16°C)	Water gpm at 60°F (16°C)	Air scfm at 60°F (16°C)	Water gpm at 60°F (16°C)	Air scfm at 60°F (16°C)
	1 Micron		1 Micron		1 Micron		1 Micron		1 Micron		1 Micron	
5	0.04	0.38	0.13	1.34	0.13	1.38	0.56	5.91	0.66	6.90	0.91	9.52
10	0.05	0.52	0.18	1.86	0.19	1.93	0.80	8.24	0.93	9.61	1.28	13.27
50	0.11	1.03	0.40	3.67	0.42	3.80	1.78	16.21	2.08	18.92	2.87	26.12
	5 Micron		5 Micron		5 Micron		5 Micron		5 Micron		5 Micron	
5	0.06	0.61	0.26	2.74	0.31	3.26	0.92	9.69	1.81	18.96	1.88	19.75
10	0.08	0.85	0.37	3.82	0.44	4.54	1.31	13.50	2.56	26.41	2.66	27.52
50	0.18	1.67	0.83	7.53	0.98	8.94	2.92	26.57	5.71	51.99	5.95	54.18
	10 Micron		10 Micron		10 Micron		10 Micron		10 Micron		10 Micron	
5	0.25	2.63	0.38	4.01	0.45	4.74	1.68	17.67	2.33	24.45	3.04	31.88
10	0.35	3.66	0.54	5.59	0.64	6.60	2.38	24.61	3.30	34.06	4.30	44.42
50	0.79	7.21	1.21	11.00	1.43	13.00	5.32	48.45	7.37	67.05	9.61	87.44
	50 Micron		50 Micron		50 Micron		50 Micron		50 Micron		50 Micron	
5	0.37	3.92	0.76	7.95	1.80	18.89	3.67	38.52	5.23	54.87	7.64	80.16
10	0.53	5.46	1.07	11.08	2.55	26.31	5.19	53.67	7.40	76.46	10.81	111.70
50	1.18	10.75	2.40	21.81	5.69	51.80	11.61	105.65	16.54	150.50	24.16	219.86
	100 Micron		100 Micron		100 Micron		100 Micron		100 Micron		100 Micron	
5	0.51	5.37	1.33	13.94	2.74	28.72	5.13	53.77	7.95	83.42	8.38	87.88
10	0.72	7.49	1.88	19.42	3.87	40.01	7.25	74.92	11.25	116.24	11.85	122.45
50	1.62	14.73	4.20	38.22	8.65	78.76	16.21	147.48	25.14	228.81	26.49	241.03
	250 Micron		250 Micron		250 Micron		250 Micron		250 Micron		250 Micron	
5	0.58	6.03	1.77	18.46	5.41	56.57	8.95	93.50	14.28	149.18	19.14	200.01
10	0.82	8.37	2.50	25.62	7.66	78.51	12.65	129.75	20.19	207.02	27.07	277.56
50	1.82	15.85	5.59	48.53	17.12	148.74	28.29	245.81	45.14	392.21	60.52	525.83
	450 Micron		450 Micron		450 Micron		450 Micron		450 Micron		450 Micron	
5	0.78	8.08	1.82	18.92	7.02	73.18	9.05	94.28	15.36	160.03	19.81	206.39
10	1.10	11.18	2.57	26.17	9.93	101.23	12.80	130.43	21.72	221.38	28.01	285.51
50	2.45	20.54	5.74	48.07	22.21	185.94	28.62	239.57	48.57	406.62	62.64	524.43

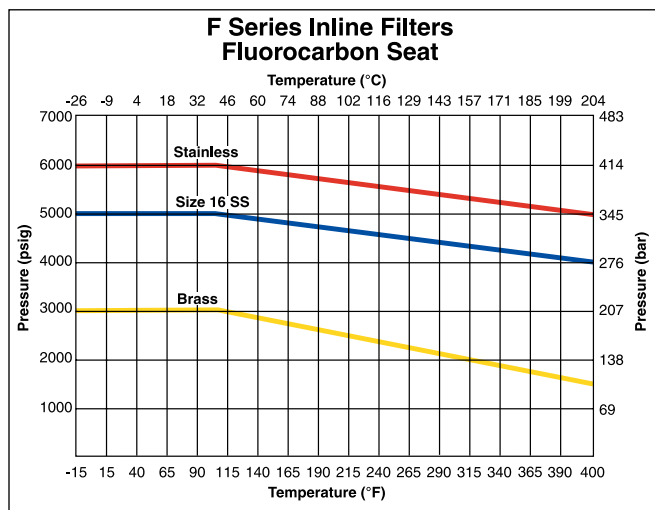
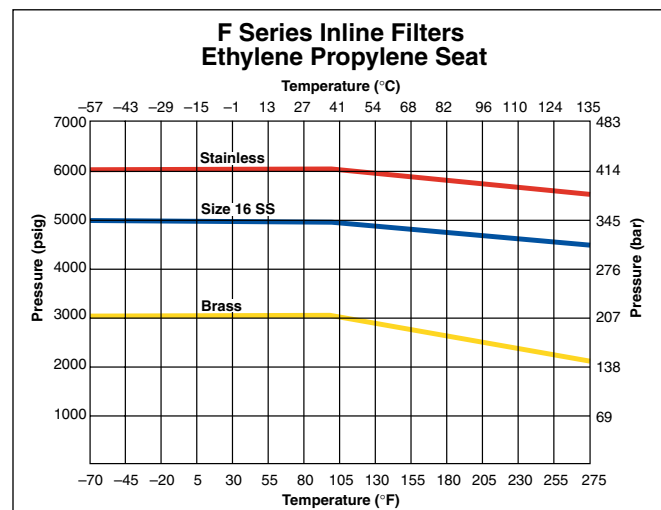
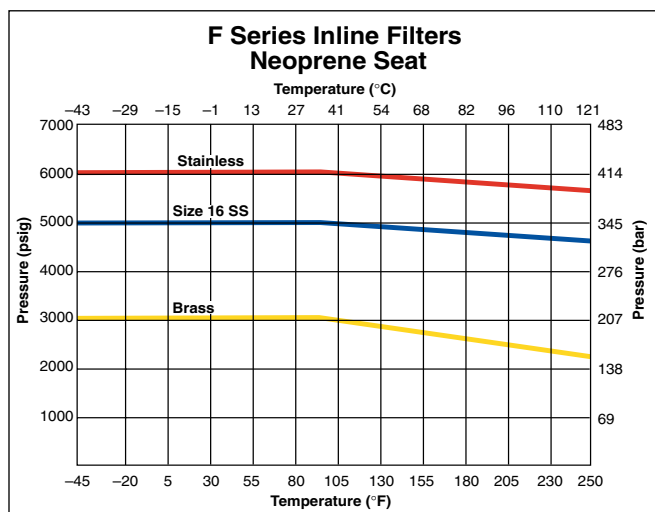
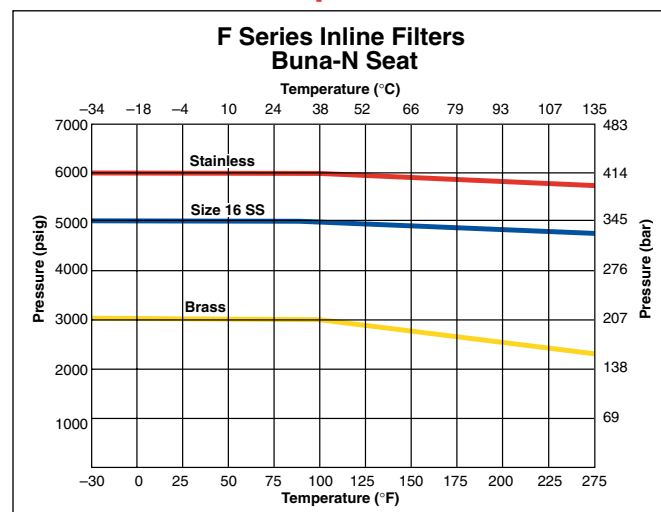
Flow / Filtration Data

Filter Series	Effective Filtration Area		C_v †						
			1 micron	5 micron	10 micron	50 micron	100 micron	250 Micron	450 Micron
	sq in	sq mm	Micron Range .5 to 3	Micron Range 5 to 10	Micron Range 10 to 20	Micron Range 40 to 50	Micron Range 100 to 150	Micron Range 225 to 275	Micron Range 400 to 500
F2L	0.39	252	0.016	0.026	0.112	0.167	0.229	0.258	0.347
F4L	0.70	452	0.057	0.117	0.171	0.339	0.594	0.790	0.812
F6L	1.57	1013	0.059	0.139	0.202	0.805	1.224	2.421	3.141
F8L	2.53	1632	0.252	0.413	0.753	1.642	2.292	4.001	4.047
F12L	3.77	2432	0.294	0.808	1.042	2.339	3.556	6.384	6.869
F16L	4.47	2884	0.406	0.842	1.359	3.417	3.746	8.559	8.859

† Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = x_T$.
 $x_T = 1.0$ for micron sizes 1 through 100; 0.79 for the 250 micron size, and 0.68 for the 450 micron size.

Maximum Pressure Differential Across Clean Filters at 70°F (21°C)

	1 micron	5 micron	10 micron	50 micron	100 micron	250 micron	450 micron
psig	2250	1950	1750	1150	1000	1000	1000
bar	155	134	120	79	69	69	69

Pressure vs. Temperature

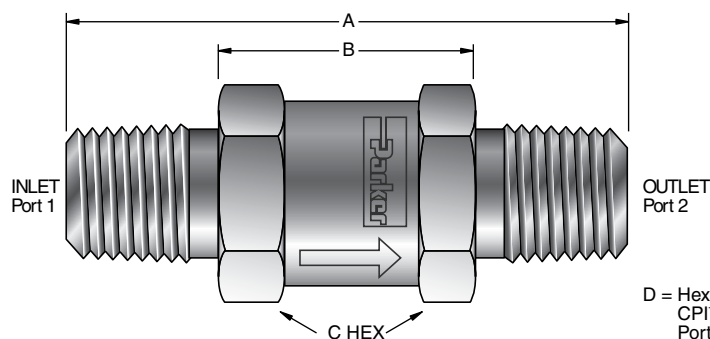
Note: To determine MPa, multiply bar by 0.1

Dimensions

Basic Part Number	End Connections		Dimensions							
	(Inlet)	(Outlet)	A†		B		C		D	
	Port 1	Port 2	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2A-F2L	1/8" A-LOK® Compression	1/8" A-LOK® Compression	2.29	58.2	1.09	27.7	.625	15.9	.438	11.1
2F-F2L	1/8" Female NPT	1/8" Female NPT	1.86	47.2	—	—	.625	15.9	—	—
2F5-F2L	1/8" Male SAE	1/8" Male SAE	1.69	42.9	1.09	27.7	.625	15.9	—	—
2G5-F2L	1/8" Female SAE	1/8" Female SAE	1.86	47.2	—	—	.625	15.9	—	—
2KF-F2L	1/8" Female BSP/ISO Tapered	1/8" Female BSP/ISO Tapered	1.86	47.2	—	—	.625	15.9	—	—
2KM-F2L	1/8" Male BSP/ISO Tapered	1/8" Male BSP/ISO Tapered	1.77	45.0	1.00	25.4	.625	15.9	—	—
2M-F2L	1/8" Male NPT	1/8" Male NPT	1.77	45.0	1.01	25.7	.625	15.9	—	—
2TA-F2L	1/8" Tube Adapter	1/8" Tube Adapter	1.96	49.8	.88	22.4	.625	15.9	—	—
2Z-F2L	1/8" CPI™ Compression	1/8" CPI™ Compression	2.29	58.2	1.09	27.7	.625	15.9	.438	11.1
M3A-F2L	3mm A-LOK® Compression	3mm A-LOK® Compression	2.30	58.4	1.05	26.7	.625	15.9	.472	12.0
M3Z-F2L	3mm CPI™ Compression	3mm CPI™ Compression	2.30	58.4	1.05	26.7	.625	15.9	.472	12.0
2M2A-F2L	1/8" Male NPT	1/8" A-LOK® Compression	2.03	51.6	1.06	26.9	.625	15.9	.438	11.1
2M2F-F2L	1/8" Male NPT	1/8" Female NPT	1.82	46.2	1.44	36.6	.625	15.9	—	—
2M2Z-F2L	1/8" Male NPT	1/8" CPI™ Compression	2.03	51.6	1.06	26.9	.625	15.7	.438	11.1
2F-F4L	1/8" Female NPT	1/8" Female NPT	2.01	51.1	—	—	.750	19.1	—	—
2M-F4L	1/8" Male NPT	1/8" Male NPT	1.82	46.2	1.06	26.9	.750	19.1	—	—
4A-F4L	1/4" A-LOK® Compression	1/4" A-LOK® Compression	2.42	61.5	1.03	26.2	.750	19.1	.563	14.3
4F-F4L	1/4" Female NPT	1/4" Female NPT	2.40	61.0	—	—	.750	19.1	—	—
4F5-F4L	1/4" Male SAE	1/4" Male SAE	2.02	51.3	1.15	29.2	.750	19.1	—	—
4G5-F4L	1/4" Female SAE	1/4" Female SAE	2.20	55.9	—	—	.750	19.1	—	—
4KF-F4L	1/4" Female BSP/ISO Tapered	1/4" Female BSP/ISO Tapered	2.40	61.0	—	—	.750	19.1	—	—
4KM-F4L	1/4" Male BSP/ISO Tapered	1/4" Male BSP/ISO Tapered	2.18	55.4	1.06	26.9	.750	19.1	—	—
4L-F4L	1/4" Seal-Lok®	1/4" Seal-Lok®	1.82	46.2	1.05	26.7	.750	19.1	—	—
4M-F4L	1/4" Male NPT	1/4" Male NPT	2.18	55.4	1.04	26.4	.750	19.1	—	—
4Q-F4L	1/4" UltraSeal	1/4" UltraSeal	1.97	50.0	1.04	26.4	.750	19.1	—	—
4V-F4L	1/4" VacuSeal	1/4" VacuSeal	2.22	56.4	.98	24.9	.750	19.1	—	—
4TA-F4L	1/4" Tube Adapter	1/4" Tube Adapter	2.35	59.7	1.07	27.2	.750	19.1	—	—
4Z-F4L	1/4" CPI™ Compression	1/4" CPI™ Compression	2.42	61.5	1.03	26.2	.750	19.1	.563	14.3
6A-F4L	3/8" A-LOK® Compression	3/8" A-LOK® Compression	2.55	64.8	1.03	26.2	.750	19.1	.688	17.5
6Z-F4L	3/8" CPI™ Compression	3/8" CPI™ Compression	2.55	64.8	1.03	26.2	.750	19.1	.688	17.5
M6A-F4L	6mm A-LOK® Compression	6mm A-LOK® Compression	2.43	61.7	1.03	26.2	.750	19.1	.551	14.0
M6Z-F4L	6mm CPI™ Compression	6mm CPI™ Compression	2.43	61.7	1.03	26.2	.750	19.1	.551	14.0
4M4A-F4L	1/4" Male NPT	1/4" A-LOK® Compression	2.31	58.7	1.04	26.4	.750	19.1	.563	14.3
4M4F-F4L	1/4" Male NPT	1/4" Female NPT	2.29	58.2	1.72	43.7	.750	19.1	—	—
4M4Z-F4L	1/4" Male NPT	1/4" CPI™ Compression	2.32	58.9	1.05	26.7	.750	19.1	.563	14.3
4M6A-F4L	1/4" Male NPT	3/8" A-LOK® Compression	2.38	60.5	1.05	26.7	.750	19.1	.688	17.5
4M6Z-F4L	1/4" Male NPT	3/8" CPI™ Compression	2.38	60.5	1.05	26.7	.750	19.1	.688	17.5
6A-F6L	3/8" A-LOK® Compression	3/8" A-LOK® Compression	3.27	83.1	1.75	44.5	1.000	25.4	.688	17.5
6F-F6L	3/8" Female NPT	3/8" Female NPT	3.03	77.0	—	—	1.000	25.4	—	—
6F5-F6L	3/8" Male SAE	3/8" Male SAE	2.71	68.8	1.76	44.7	1.000	25.4	—	—
6G5-F6L	3/8" Female SAE	3/8" Female SAE	2.96	75.2	—	—	1.000	25.4	—	—
6KF-F6L	3/8" Female BSP/ISO Tapered	3/8" Female BSP/ISO Tapered	3.03	77.0	—	—	1.000	25.4	—	—
6KM-F6L	3/8" Male BSP/ISO Tapered	3/8" Male BSP/ISO Tapered	2.96	75.2	1.84	46.7	1.000	25.4	—	—
6L-F6L	3/8" Seal-Lok®	3/8" Seal-Lok®	2.65	67.3	1.77	45.0	1.000	25.4	—	—
6M-F6L	3/8" Male NPT	3/8" Male NPT	2.96	75.2	1.82	46.2	1.000	25.4	—	—
6Q-F6L	3/8" UltraSeal	3/8" UltraSeal	2.75	69.8	1.80	45.7	1.000	25.4	—	—
6V-F6L	3/8" VacuSeal	3/8" VacuSeal	3.56	90.4	2.05	52.1	1.000	25.4	—	—
6TA-F6L	3/8" Tube Adapter	3/8" Tube Adapter	3.24	82.3	1.80	45.7	1.000	25.4	—	—
6Z-F6L	3/8" CPI™ Compression	3/8" CPI™ Compression	3.27	83.1	1.75	44.5	1.000	25.4	.688	17.5
8A-F6L	1/2" A-LOK® Compression	1/2" A-LOK® Compression	3.55	90.2	1.81	46.0	1.000	25.4	.875	22.2
8Z-F6L	1/2" CPI™ Compression	1/2" CPI™ Compression	3.55	90.2	1.81	46.0	1.000	25.4	.875	22.2
M8A-F6L	8mm A-LOK® Compression	8mm A-LOK® Compression	3.33	84.6	1.87	47.5	1.000	25.4	.630	16.0
M8Z-F6L	8mm CPI™ Compression	8mm CPI™ Compression	3.33	84.6	1.87	47.5	1.000	25.4	.630	16.0
M10A-F6L	10mm A-LOK® Compression	10mm A-LOK® Compression	3.35	85.1	1.81	46.0	1.000	25.4	.748	19.0
M10Z-F6L	10mm CPI™ Compression	10mm CPI™ Compression	3.35	85.1	1.81	46.0	1.000	25.4	.748	19.0
6M6A-F6L	3/8" Male NPT	3/8" A-LOK® Compression	3.14	79.8	1.81	46.0	1.000	25.4	.688	17.5
6M6F-F6L	3/8" Male NPT	3/8" Female NPT	3.04	77.2	2.47	62.7	1.000	25.4	—	—
6M6Z-F6L	3/8" Male NPT	3/8" CPI™ Compression	3.14	79.8	1.81	46.0	1.000	25.4	.688	17.5
6M8A-F6L	3/8" Male NPT	1/2" A-LOK® Compression	3.25	82.6	1.81	46.0	1.000	25.4	.875	22.2
6M8Z-F6L	3/8" Male NPT	1/2" CPI™ Compression	3.25	82.6	1.81	46.0	1.000	25.4	.875	22.2

Note: Optional wire cloth filter elements may slightly alter dimensions A and B on filters with combination end connections.

†For CPI™ and A-LOK®: Dimensions are measured with nuts in the finger tight position.



D = Hex Diameter of Nuts on
CPI™ and A-LOK® Compression
Ported Valves

Model shown: 4M-F4L-100-BN-SS

Dimensions (continued)

Basic Part Number	End Connections		Dimensions							
	(Inlet) Port 1	(Outlet) Port 2	A†		B		C		D	
			Inch	mm	Inch	mm	Inch	mm	Inch	mm
8A-F8L	1/2" A-LOK® Compression	1/2" A-LOK® Compression	4.08	103.6	2.34	59.4	1.250	31.8	.875	22.2
8F-F8L	1/2" Female NPT	1/2" Female NPT	3.56	90.4	—	—	1.250	31.8	—	—
8F5-F8L	1/2" Male SAE	1/2" Male SAE	3.45	87.6	2.34	59.4	1.250	31.8	—	—
8G5-F8L	1/2" Female SAE	1/2" Female SAE	3.56	90.4	—	—	1.250	31.8	—	—
8KF-F8L	1/2" Female BSP/ISO Tapered	1/2" Female BSP/ISO Tapered	3.56	90.4	—	—	1.250	31.8	—	—
8KM-F8L	1/2" Male BSP/ISO Tapered	1/2" Male BSP/ISO Tapered	3.56	90.4	2.06	52.3	1.250	31.8	—	—
8L-F8L	1/2" Seal-Lok®	1/2" Seal-Lok®	3.22	81.8	2.21	56.1	1.250	31.8	—	—
8M-F8L	1/2" Male NPT	1/2" Male NPT	3.56	90.4	2.05	52.1	1.250	31.8	—	—
8Q-F8L	1/2" UltraSeal	1/2" UltraSeal	3.28	83.3	2.33	59.2	1.250	31.8	—	—
8TA-F8L	1/2" Tube Adapter	1/2" Tube Adapter	3.75	95.3	1.78	45.2	1.250	31.8	—	—
8V-F8L	1/2" VacuSeal	1/2" VacuSeal	3.56	90.4	2.05	52.1	1.250	31.8	—	—
8Z-F8L	1/2" CPI™ Compression	1/2" CPI™ Compression	4.08	103.6	2.34	59.4	1.250	31.8	.875	22.2
M12A-F8L	12mm A-LOK® Compression	12mm A-LOK® Compression	4.06	103.1	2.34	59.4	1.250	31.8	.866	22.0
M12Z-F8L	12mm CPI™ Compression	12mm CPI™ Compression	4.06	103.1	2.34	59.4	1.250	31.8	.866	22.0
8M8A-F8L	1/2" Male NPT	1/2" A-LOK® Compression	3.82	97.0	2.19	55.7	1.250	31.8	.875	22.2
8M8F-F8L	1/2" Male NPT	1/2" Female NPT	3.56	90.4	2.80	71.1	1.250	31.8	—	—
8M8Z-F8L	1/2" Male NPT	1/2" CPI™ Compression	3.82	97.0	2.19	55.7	1.250	31.8	.875	22.2
12A-F12L	3/4" A-LOK® Compression	3/4" A-LOK® Compression	4.34	110.2	2.60	66.0	1.375	34.9	1.125	28.6
12F-F12L	3/4" Female NPT	3/4" Female NPT	4.09	103.9	—	—	1.375	34.9	—	—
12F5-F12L	3/4" Male SAE	3/4" Male SAE	4.05	102.9	2.59	65.8	1.375	34.9	—	—
12G5-F12L	3/4" Female SAE	3/4" Female SAE	4.13	104.9	—	—	1.375	34.9	—	—
12KF-F12L	3/4" Female BSP/ISO Tapered	3/4" Female BSP/ISO Tapered	4.09	103.9	—	—	1.375	34.9	—	—
12KM-F12L	3/4" Male BSP/ISO Tapered	3/4" Male BSP/ISO Tapered	4.09	103.9	2.59	65.8	1.375	34.9	—	—
12L-F12L	3/4" Seal-Lok®	3/4" Seal-Lok®	3.78	96.0	2.44	62.0	1.375	34.9	—	—
12M-F12L	3/4" Male NPT	3/4" Male NPT	4.09	103.9	2.58	65.5	1.375	34.9	—	—
12Q-F12L	3/4" UltraSeal	3/4" UltraSeal	3.78	96.0	2.64	67.1	1.375	34.9	—	—
12TA-F12L	3/4" Tube Adapter	3/4" Tube Adapter	4.24	107.7	2.18	55.4	1.375	34.9	—	—
12V-F12L	3/4" VacuSeal	3/4" VacuSeal	4.64	117.9	2.64	67.1	1.375	34.9	—	—
12Z-F12L	3/4" CPI™ Compression	3/4" CPI™ Compression	4.34	110.2	2.60	66.0	1.375	34.9	1.125	28.6
M20A-F12L	20mm A-LOK® Compression	20mm A-LOK® Compression	4.32	109.7	2.56	65.0	1.375	34.9	1.260	32.0
M20Z-F12L	20mm CPI™ Compression	20mm CPI™ Compression	4.32	109.7	2.56	65.0	1.375	34.9	1.260	32.0
M22A-F12L	22mm A-LOK® Compression	22mm A-LOK® Compression	4.30	109.2	2.56	65.0	1.375	34.9	1.260	32.0
M22Z-F12L	22mm CPI™ Compression	22mm CPI™ Compression	4.30	109.2	2.56	65.0	1.375	34.9	1.260	32.0
12M12A-F12L	3/4" Male NPT	3/4" A-LOK® Compression	4.22	107.2	2.59	65.8	1.375	34.9	1.125	28.6
12M12F-F12L	3/4" Male NPT	3/4" Female NPT	4.09	103.9	3.34	84.8	1.375	34.9	—	—
12M12Z-F12L	3/4" Male NPT	3/4" CPI™ Compression	4.22	107.2	2.59	65.8	1.375	34.9	1.125	28.6
16A-F16L	1" A-LOK® Compression	1" A-LOK® Compression	4.63	117.6	2.53	64.3	1.625	41.3	1.500	38.1
16F-F16L	1" Female NPT	1" Female NPT	4.84	122.9	—	—	1.625	41.3	—	—
16F5-F16L	1" Male SAE	1" Male SAE	4.10	104.1	2.64	67.1	1.625	41.3	—	—
16G5-F16L	1" Female SAE	1" Female SAE	4.84	122.9	—	—	1.625	41.3	—	—
16KF-F16L	1" Female BSP/ISO Tapered	1" Female BSP/ISO Tapered	4.84	122.9	—	—	1.625	41.3	—	—
16KM-F16L	1" Male BSP/ISO Tapered	1" Male BSP/ISO Tapered	4.52	114.8	2.64	67.1	1.625	41.3	—	—
16M-F16L	1" Male NPT	1" Male NPT	4.52	114.8	2.63	66.8	1.625	41.3	—	—
16L-F16L	1" Seal-Lok®	1" Seal-Lok®	3.83	97.3	2.45	62.2	1.625	41.3	—	—
16TA-F16L	1" Tube Adapter	1" Tube Adapter	5.11	129.8	2.52	64.0	1.625	41.3	—	—
16Z-F16L	1" CPI™ Compression	1" CPI™ Compression	4.63	117.6	2.53	64.3	1.625	41.3	1.500	38.1
M25A-F16L	25mm A-LOK® Compression	25mm A-LOK® Compression	4.74	120.4	2.64	67.1	1.625	41.3	1.496	38.0
M25Z-F16L	25mm CPI™ Compression	25mm CPI™ Compression	4.74	120.4	2.64	67.1	1.625	41.3	1.496	38.0
16M16A-F16L	1" Male NPT	1" A-LOK® Compression	4.57	116.1	2.58	65.5	1.625	41.3	1.500	38.1
16M16F-F16L	1" Male NPT	1" Female NPT	4.69	119.1	3.74	95.0	1.625	41.3	—	—
16M16Z-F16L	1" Male NPT	1" CPI™ Compression	4.57	116.1	2.58	65.5	1.625	41.3	1.500	38.1

How to Order

The correct part number is easily derived from the following sequence. The six product characteristics required are coded as shown below.

***Note:** If the inlet and outlet ports are the same, eliminate the outlet port designator.

Inlet Port	Outlet Port	Body Size	Micron Rating	Seal Material	Body Material
2A, 2F, 2F5, 2G5, 2KF, 2KM, 2M, 2TA, 2Z, M3A, M3Z	2A, 2F, 2F5, 2G5, 2KF, 2KM, 2M, 2TA, 2Z, M3A, M3Z	F2L	1 micron	Blank - Fluorocarbon Rubber	B - Brass
4A, 4F, 4F5, 4G5, 4KF, 4KM, 4L, 4M, 4Q, 4TA, 4V, 4Z, M6A, M6Z	4A, 4F, 4F5, 4G5, 4KF, 4KM, 4L, 4M, 4Q, 4TA, 4V, 4Z, M6A, M6Z	F4L	5 micron	BN - Buna-N Rubber	SS - 316 Stainless Steel
6A, 6F, 6F5, 6G5, 6KF, 6KM, 6L, 6M, 6Q, 6TA, 6V, 6Z, M8A, M8Z, M10A, M10Z	6A, 6F, 6F5, 6G5, 6KF, 6KM, 6L, 6M, 6Q, 6TA, 6V, 6Z, M8A, M8Z, M10A, M10Z	F6L	10 micron	EPR - Ethylene Propylene Rubber	
8A, 8F, 8F5, 8G5, 8KF, 8KM, 8L, 8M, 8Q, 8TA, 8V, 8Z, M12A, M12Z	8A, 8F, 8F5, 8G5, 8KF, 8KM, 8L, 8M, 8Q, 8TA, 8V, 8Z, M12A, M12Z	F8L	50 micron	NE - Neoprene Rubber	
12A, 12F, 12F5, 12G5, 12KF, 12KM, 12L, 12M, 12Q, 12TA, 12V, 12Z, M20A, M20Z, M22A, M22Z	12A, 12F, 12F5, 12G5, 12KF, 12KM, 12L, 12M, 12Q, 12TA, 12V, 12Z, M20A, M20Z, M22A, M22Z	F12L	100 micron	*T - PTFE	
16A, 16F, 16F5, 16G5, 16KF, 16KM, 16L, 16M, 16TA, 16Z, M25A, M25Z	16A, 16F, 16F5, 16G5, 16KF, 16KM, 16L, 16M, 16TA, 16Z, M25A, M25Z	F16L	250 micron	KZ - Highly Fluorinated Fluorocarbon Rubber	
			450 micron		

* Only available with Stainless Steel filters.

Examples:

4M	*	F4L	5	BN	B
Inlet Port	Outlet Port	Body Size	Micron Rating	Seal Material	Body Material

Describes an F Series Inline Filter with 1/4" male NPT inlet and outlet ports, a 5 micron element, Buna-N seal and brass body construction.

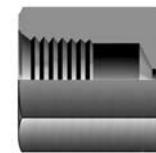
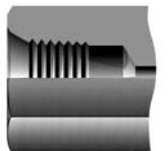
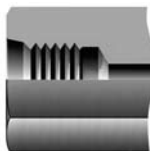
16M	16A	F16L	10	NE	SS
Inlet Port	Outlet Port	Body Size	Micron Rating	Seal Material	Body Material

Describes an F Series Inline Filter with a 1" male NPT inlet port and a 1" A-LOK® outlet port, a 10 micron element, neoprene seal and stainless steel body construction.

Options

Oxygen Cleaning - Add the suffix **-C3** to the end of the part number to receive filters cleaned and assembled for oxygen service in accordance with Parker specification ES8003. **Example:** 4A-F4L-10-V-SS-C3

Laser Weld - Add the suffix **-LW** to the end of the part number to receive tamper-resistant stainless steel filters. **Example:** 2M-F2L-5-SS-LW

Available End Connections**A**-Two ferrule A-LOK[®] compression port**M**-ANSI/ASME B1.20.1, External pipe threads**TA**-Tube adapter connection**L**-SAE J1453, Fitting – O-ring face seal – External thread with O-ring groove designed to seal with an elastomer against a sleeve**Z**-Single ferrule CPI[™] compression port**Q**-UltraSeal face seal port**F5**-SAE J1926/2, Part 2: Heavy-duty (S Series) stud ends**KF**-British Standard BS 21 (ISO 7-1), Internal pipe threads**F**-ANSI/ASME B1.20.1, Internal pipe threads**V**-VacuSeal face seal port**G5**-SAE J1926/1, Part 1: Threaded port with O-ring seal in truncated housing**KM**-British Standard BS 21 (ISO 7-1), External pipe threads**Kit Information**

To order repair kits for the F Series Inline Filters simply fill in the designators from the chart below.

Size	Micron Rating	Seal Material
F2	1	V - Fluorocarbon Rubber
F4	5	
F6	10	BN - Buna-N Rubber
F8	50	EPR - Ethylene Propylene Rubber
F12	100	
F16	250	NE - Neoprene Rubber
	450	T - PTFE
		KZ - Highly Fluorinated Fluorocarbon Rubber

Examples: KIT-F8-10-V
KIT-F16-100-BN



Filter Kits Contain: Molded Seal, Filter Element, Guide Ring, Spring and Maintenance Instructions

Caution: When interchanging sintered metal elements with wire cloth filter elements, the flow direction is reversed.

**WARNING**

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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Catalog 4130-F, 20M, 07/05

Tee Filters (FT Series)

Catalog 4130-FT
Revised, May 2003



FT Series Tee Filters

Introduction

Parker FT Series Tee Filters are designed for protection of instrumentation systems from undesirable materials. Component changes or repair and maintenance can admit dirt, chips, or other contaminants to the small bore tubing.

Features

- Filter element replacement achievable without removing filter from installation
- Compact, high strength forged body design with effective filtration areas of:
 - FT4 – 1.57 sq in (1013 sq mm)
 - FT8 – 2.53 sq in (1632 sq mm)
- Stainless steel and brass construction
- Standard sintered metal micron ratings: 1, 5, 10, 50, and 100
- Optional 250 and 450 micron wire cloth filter elements
- Optional bypass enables a continuous self cleaning flow around the element
- Port connections include male and female NPT, CPI™, A-LOK®, UltraSeal, and VacuSeal

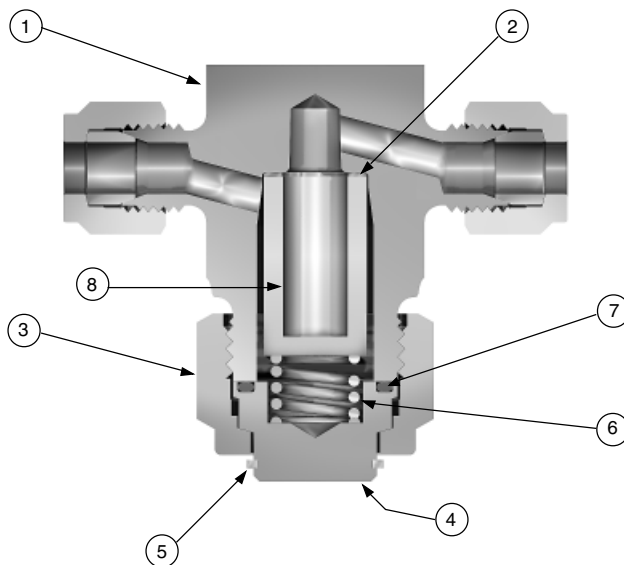
Specifications

- **Pressure Ratings:**
 - With Elastomeric and Metallic Seals:
 - Stainless Steel – 6000 psig (414 bar) CWP
 - Brass – 2000 psig (138 bar) CWP
 - With PTFE Seals:
 - Stainless Steel – 4000 psig (276 bar) CWP
 - Brass – 2000 psig (138 bar) CWP

Materials of Construction

Item #	Part	Stainless Steel Filter	Brass Filter
1	Body	ASTM A 182 TYPE F316	ASTM B 283 Alloy C37700
2	Washer	316 Stainless Steel	
3	Nut	ASTM A 479 TYPE 316	ASTM B 16 Alloy C36000
4	Cap	ASTM A 479 TYPE 316	ASTM B 16 Alloy C36000
5	Retainer Ring	PH 15-7 Mo Stainless Steel	
6	Spring	316 Stainless Steel	
7	Seal	Fluorocarbon Rubber*	
8	Element	316 Stainless Steel	

* Optional seal materials are available. See the How to Order section.
Lubrication: Silicone base



Model Shown: 4Z-FT4-10-BN-SS

Pressure Rating and Tubing Selection:

For working pressures of A-LOK® and CPI™ tube connections, please see the [Instrument Tubing Selection Guide \(Bulletin 4200-TS\)](#), found in the Technical Section of the Parker Instrumentation Process Control Binder, or the Parker Instrument Tube Fitting Installation Manual (Bulletin 4200-B4).

For working pressures of valves with external or internal pipe threads, please see [Catalog 4260, Instrumentation Pipe Fittings](#).

Definitions

Filter Element – The component within the filter which captures media contamination.

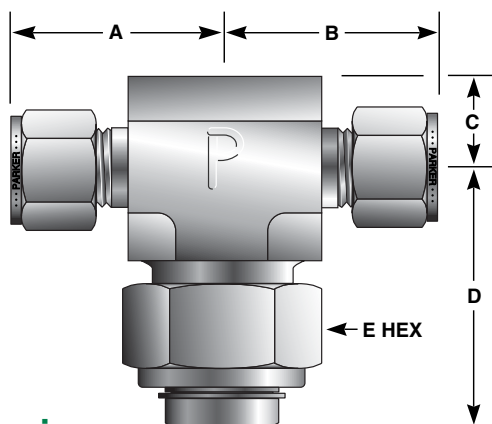
Filtration Area – The surface area of the filter element available to capture contamination.

Micron – A unit of measure used to indicate the mean pore diameter of the filter element or the mean particle diameter of media contamination.

One micron = 0.00004 inch or 0.0010 mm

Installation

Best installation practice is to orient the cap downward. This helps to prevent contaminants from entering the system during element change.



Model Shown: 4Z-FT4-10-BN-SS

Dimensions

Basic Part Number	End Connections		Dimensions Inches (mm)				
	Port 1	Port 2	A†	B†	C	D	E
2A-FT4	1/8" A-LOK®		1.14	1.14	0.51 (13.0)	1.53 (38.9)	0.88 (22.4)
2Z-FT4	1/8" CPI™		(29.0)	(29.0)			
2F-FT4	1/8" Female NPT		1.00	1.00			
			(25.4)	(25.4)			
2M-FT4	1/8" Male NPT		1.00	1.00			
			(25.4)	(25.4)			
4A-FT4	1/4" A-LOK®		1.23	1.23			
4Z-FT4	1/4" CPI™		(31.2)	(31.2)			
4F-FT4	1/4" Female NPT		1.06	1.06			
			(26.9)	(26.9)			
4M-FT4	1/4" Male NPT		1.09	1.09			
			(27.7)	(27.7)			
4Q-FT4	1/4" UltraSeal		1.09	1.09			
			(27.7)	(27.7)			
4V-FT4	1/4" VacuSeal		1.20	1.20			
			(30.5)	(30.5)			
M6A-FT4	6mm A-LOK®		1.23	1.23	0.59 (15.0)	1.71 (43.4)	1.25 (31.8)
M6Z-FT4	6mm CPI™		(31.2)	(31.2)			
6A-FT8	3/8" A-LOK®		1.42	1.42			
6Z-FT8	3/8" CPI™		(36.1)	(36.1)			
6M-FT8	3/8" Male NPT		1.19	1.19			
			(30.2)	(30.2)			
8A-FT8	1/2" A-LOK®		1.53	1.53			
8Z-FT8	1/2" CPI™		(38.9)	(38.9)			
8F-FT8	1/2" Female NPT		1.48	1.48			
			(37.6)	(37.6)			
8M-FT8	1/2" Male NPT		1.38	1.38			
			(35.1)	(35.1)			
8V-FT8	1/2" VacuSeal		1.33	1.33			
			(33.8)	(33.8)			
M8A-FT8	8mm A-LOK®		1.44	1.44			
M8Z-FT8	8mm CPI™		(36.6)	(36.6)			
M10A-FT8	10mm A-LOK®		1.44	1.44			
M10Z-FT8	10mm CPI™		(36.6)	(36.6)			
M12A-FT8	12mm A-LOK®		1.54	1.54			
M12Z-FT8	12mm CPI™		(39.1)	(39.1)			

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Maximum Pressure Differential Across Clean Filters at 70 °F (21 °C)

	1 micron	5 micron	10 micron	50 micron	100 micron	250 micron	450 micron
psig	2250	1950	1750	1150	1000	1000	1000
bar	155	134	120	79	69	69	69

Available End Connections

A-Two ferrule A-LOK® compression port



Z-Single ferrule CPI™ compression port



M-ANSI/ASME B1.20.1 External pipe threads



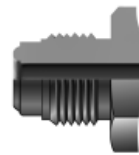
F-ANSI/ASME B1.20.1 Internal pipe threads



Q-UltraSeal face seal port



V-VacuSeal face seal port



How to Order

The correct part number is easily derived by following the circled number sequence. The six product characteristics required are coded as shown below. *Note: If both the inlet and outlet ports are the same, eliminate the outlet port designator.

Example: 4M - * - FT4 - 5 - BN - B

① ② ③ ④ ⑤ ⑥

Inlet Outlet Valve Micron Seal Body
Port Port Series Rating Material Material

Describes an FT Series Filter with 1/4" male NPT inlet and outlet ports, a 5 micron element, Buna-N seal and brass body construction.

① Inlet Port	② Outlet Port	③ Valve Series	④ Nominal Micron Rating	⑤ Seal Material	⑥ Body Material
2A, 2F, 2M, 2Z, 4A, 4F, 4M, 4Q, 4V, 4W, 4Z, M6A, M6Z		FT4	1 - 1 Micron 5 - 5 Micron 10 - 10 Micron 50 - 50 Micron 100 - 100 Micron 250 - 250 Micron 450 - 450 Micron	Blank - Fluorocarbon Rubber BN - Buna-N Rubber EPR - Ethylene Propylene Rubber NE - Neoprene Rubber KZ - Highly Fluorinated Fluorocarbon Rubber HT - Silver Plated Nickel Alloy C-Ring T - PTFE	SS - Stainless Steel B - Brass
6A, 6M, 8A, 8M, 8V, 8Z, M8A, M8Z, M10A, M10Z, M12A, M12Z		FT8			

Options

Oxygen Cleaning – Add the suffix–**C3** to the end of the part number to receive filters cleaned and assembled for oxygen service in accordance with Parker specification ES8003. **Example:** 4A-FT4-10-V-SS-**C3**

Special Cleaning – All face seal ended filters are cleaned in accordance with Parker Specification ES8001. This is an option for all filters by adding the suffix–**C1** to the end of the part number. **Example:** M6A-FT8-50-NE-SS-**C1**.

Bypass – Add the suffix–**PB** to the end of the part number to receive a 1/8" –27 FNPT tapped Cap for sampling. **Example:** 2M-FT4-5-V-SS-**PB**

Integral Compression Ported Bypass Option – Add the suffix–**PBA** (A-LOK®) or–**PBZ** (CPI™) to the end of the part number to receive a 4Z/4A (FT4) or 6A/6Z (FT8) compression ported Cap.

Example: 2M-FT4-5-V-SS-**PBZ**

Kit Information

To order repair kits for the FT Series Filters, simply fill in the designators from the chart below.

Size	Micron Rating	Seal Material
	1	V - Fluorocarbon Rybber
	5	BN - Buna-N Rubber
FT4	10	EPR - Ethylene Propylene Rubber
	50	NE - Neoprene Rubber
FT8	100	KZ - Highly Fluorinated Fluorocarbon
	250	Rubber
	450	HT - Silver Plated Nickel Alloy C-Ring

Examples: KIT-FT4-10-V
KIT-FT8-100-BN

Filter Kits Contain: Seals, Filter Element, Spring and Maintenance Instructions.

Caution: When interchanging sintered metal elements with wire cloth filter elements, the flow direction is reversed.

⚠ WARNING

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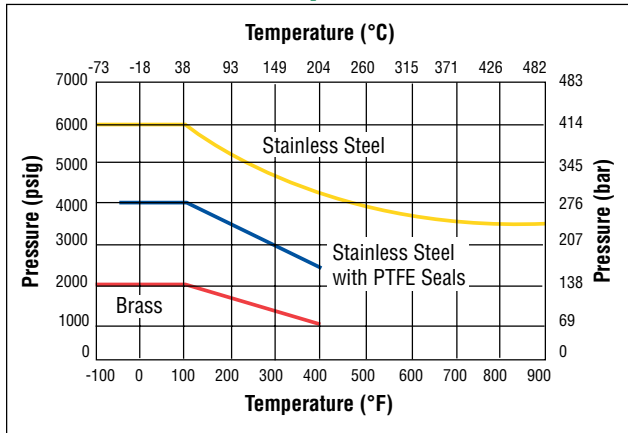
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Pressure vs. Temperature



Note: To determine MPa, multiply bar by 0.1

Note: This Pressure versus Temperature chart reflects the maximum temperature range of indicated body materials.

The temperature rating of the seal becomes the limiting factor on temperature range.

Temperature Ratings:

Buna-N Rubber

-40 °F to 275 °F (-40 °C to 135 °C)

Highly Fluorinated Fluorocarbon Rubber

-20 °F to 500 °F (-29 °C to 260 °C)

Ethylene Propylene Rubber

-70 °F to 300 °F (-57 °C to 149 °C)

Fluorocarbon Rubber

-40 °F to 400 °F (-40 °C to 204 °C)

Neoprene Rubber

-65 °F to 300 °F (-54 °C to 149 °C)

Silver Plated Nickel Alloy Gasket (C-ring)

-100 °F to 900 °F (-73 °C to 482 °C)

PTFE

-70 °F to 400 °F (-56 °C to 204 °C)

Flow Calculations with 100 psig (7 bar) Inlet Pressure

Pressure Drop ΔP		FT4				FT8			
		Water GPM at 60 °F (16 °C)	Water m³/hr at 60 °F (16 °C)	Air SCFM at 60 °F (16 °C)	Air m³/hr at 60 °F (16 °C)	Water GPM at 60 °F (16 °C)	Water m³/hr at 60 °F (16 °C)	Air SCFM at 60 °F (16 °C)	Air m³/hr at 60 °F (16 °C)
psig		bar							
		1 Micron				1 Micron			
5	0.35	0.16	0.04	1.69	2.68	0.28	0.06	2.89	4.58
10	0.69	0.23	0.05	2.35	3.72	0.39	0.09	4.02	6.36
50	3.45	0.51	0.12	4.63	7.18	0.87	0.20	7.91	12.26
		5 Micron				5 Micron			
5	0.35	0.35	0.08	3.68	5.84	0.77	0.17	8.05	12.76
10	0.69	0.50	0.11	5.13	8.12	1.08	0.25	11.21	17.74
50	3.45	1.11	0.25	10.10	15.65	2.43	0.55	22.07	34.19
		10 Micron				10 Micron			
5	0.35	0.44	0.10	4.57	7.26	0.94	0.21	9.90	15.70
10	0.69	0.62	0.14	6.37	10.09	1.33	0.30	13.79	21.83
50	3.45	1.38	0.31	12.55	19.44	2.98	0.68	27.15	42.07
		50 Micron				50 Micron			
5	0.35	0.52	0.12	5.42	8.59	0.99	0.23	10.42	16.52
10	0.69	0.73	0.17	7.55	11.95	1.40	0.32	14.51	22.97
50	3.45	1.63	0.37	14.86	23.03	3.14	0.71	28.57	44.26
		100 Micron				100 Micron			
5	0.35	0.65	0.15	6.78	10.75	1.64	0.37	17.22	27.31
10	0.69	0.91	0.21	9.45	14.95	2.32	0.53	23.99	37.97
50	3.45	2.04	0.46	18.60	28.81	5.19	1.18	47.23	73.17
		250 Micron				250 Micron			
5	0.35	1.14	0.26	11.94	18.92	1.74	0.40	18.22	28.88
10	0.69	1.62	0.37	16.56	26.17	2.47	0.56	25.28	39.95
50	3.45	3.61	0.82	31.30	48.07	5.52	1.25	47.78	73.37
		450 Micron				450 Micron			
5	0.35	1.23	0.28	12.84	20.35	1.88	0.43	19.64	31.13
10	0.69	1.74	0.39	17.82	28.17	2.66	0.60	27.27	43.10
50	3.45	3.88	0.88	33.92	52.16	5.94	1.35	51.89	79.81

Flow / Filtration Data

Filter Series	Effective Filtration Area		$C_f \dagger$						
			1 micron	5 micron	10 micron	50 micron	100 micron	250 micron	450 micron
	sq in	sq mm	Micron Range .5 to 3	Micron Range 5 to 10	Micron Range 10 to 20	Micron Range 40 to 50	Micron Range 100 to 150	Micron Range 225 to 275	Micron Range 400 to 500
FT4	1.57	1012	0.072	0.157	0.195	0.231	0.289	0.511	0.549
FT8	2.53	1632	0.123	0.343	0.422	0.444	0.734	0.780	0.840

$\dagger$ Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = x_T$.

$x_T=1.0$ for micron sizes 1 through 100; 0.78 for the 250 micron size, and 0.81 for the 450 micron size.



Catalog 4130-FT, 20M, 05/03

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