



TECHNICAL BULLETIN

DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

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 Visit the Viking website for the latest edition of this technical data page.

1. GENERAL DESCRIPTION

This bulletin is intended to provide design guidelines for Model VFC Foam Chambers and VFM Foam Makers. These devices are designed for use in low expansion foam systems and are tested and listed per FM5130 and UL162 standards to meet NFPA 11 requirements. For more information, refer to the applicable device's technical data sheet on the Viking website.

2. LISTINGS AND APPROVALS

Refer to the applicable device's technical data sheet. The devices are FM Approved and UL Listed as part of a fire extinguishing system combining designated foam concentrates, proportioning devices and bladder tanks. Approved and Listed system components can be found at <https://iq.ulprospector.com>.



FM Approved - Low Expansion Foam Systems (FM5130)



UL Listed – GHXV.EX5194

“SFFF compatible” refers to this product as being part of a SFFF Foam system that has been tested to recognized standards. Not all configurations are available. Please consult technical data and/or the Approval/Listing for usage requirements.
NOTE: Other International approval certificates may be available upon request.



3. SUMMARY OF TABLES

Device		Table	Fuel	Fomtec Foam Concentrate	Page
Model VFM Foam Maker	FM	1	Heptane	ARK, USP	2-4
	FM	2	Alcohol (IPA)	ARK	5-6
	FM	3	Ketone (Acetone)	ARK	7-8
	FM	4	Ethanol	ARK, USP	9-12
	FM	5	Ethyl Acetate	ARK	13-14
	FM	6	MEK	ARK	15-16
	FM	7	Miscella	USP	17
	FM	8	Methanol	USP	18-19
	FM	9	Hexane	USP	20
	FM	10	Jet A1	USP	21
	UL	11	Hydrocarbons (Heptane)	USP	22
	UL	12	Ethanol	USP	23
	UL	13	Methanol	USP	24
Model VFC Foam Chamber	FM	14	Methanol	USP	25-27
	FM	15	Ethanol	ARK, USP	28-32
	FM	16	Hexane	USP	33-34
	FM	17	Heptane	ARK, USP	35-36
	FM	18	IPA	ARK	37-38
	FM	19	Acetone	ARK	39-40
	FM	20	Ethyl Acetate	ARK	41
	FM	21	MEK	ARK	42
	UL	22	Heptane	ARK, USP	43
	UL	23	Ethanol	USP	44
	UL	24	Methanol	USP	45



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Model VFM Foam Maker

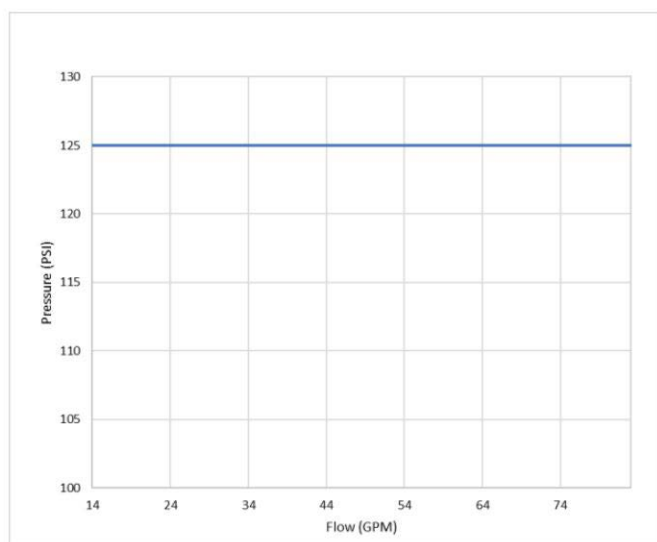
Table 1: FM Approvals for Model VFM Foam Maker (Heptane)^{1,4}

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
ARK 3%	1.5"	125	8.62	125	8.62	14	53	83	314	0.250 – 0.635	6.35 – 16.13	0.20	8.15	1.1
	2.5"	40	2.76	125	8.62	43	163	226	856	0.600 – 1.050	15.24 – 26.67	0.20	8.15	1.2
	3"	75	5.17	125	8.62	131	495	480	1817	0.906 – 1.531	23.01 – 38.89	0.20	8.15	1.3
	4"	40	2.76	125	8.62	151	572	740	2801	1.142 – 1.900	29.01 – 48.26	0.20	8.15	1.4
USP 3%	2.5"	40	2.76	125	8.62	45	170	226	856	0.600 – 1.050	15.24 – 26.67	0.10	4.08	1.5
	3"	40	2.76	75	5.17	101	382	392	1484	0.906 – 1.531	23.01 – 38.89	0.10	4.08	1.6

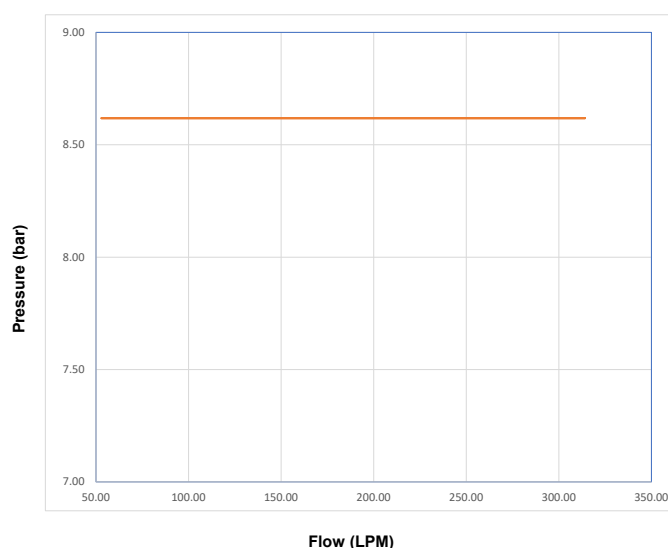
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

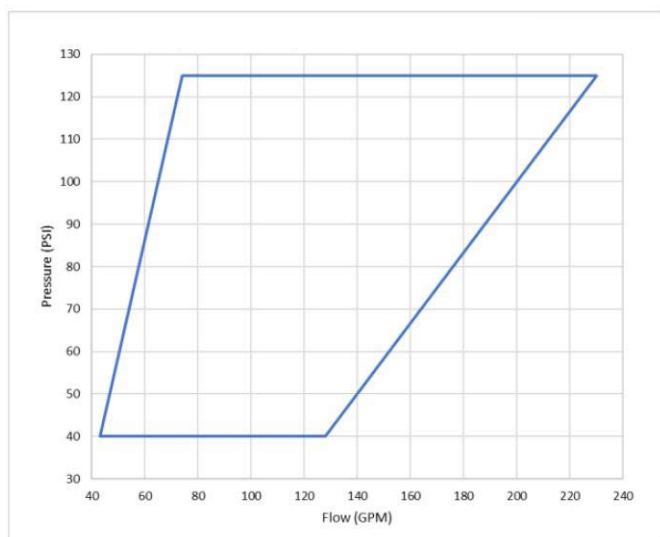
Graph 1.1A: VFM - FM - Heptane - 1.5" Foam Maker (ARK 3%)



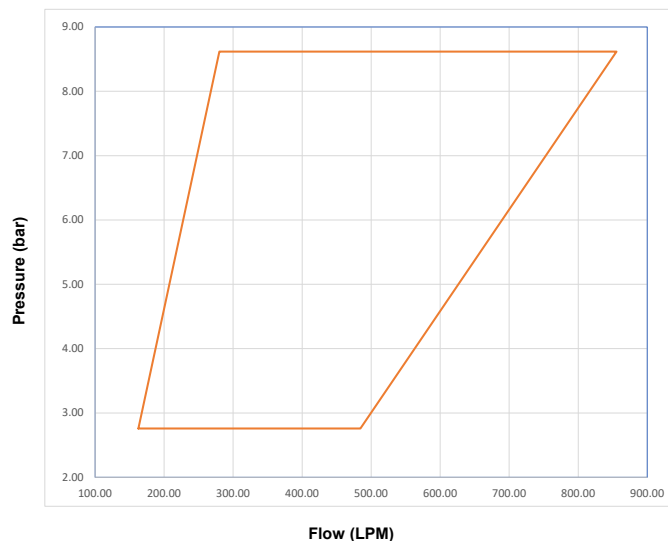
Graph 1.1B: VFM - FM - Heptane - 1.5" Foam Maker (ARK 3%) metric



Graph 1.2: VFM - FM - Heptane - 2.5" Foam Maker (ARK 3%)



Graph 1.2B: VFM - FM - Heptane - 2.5" Foam Maker (ARK 3%) metric



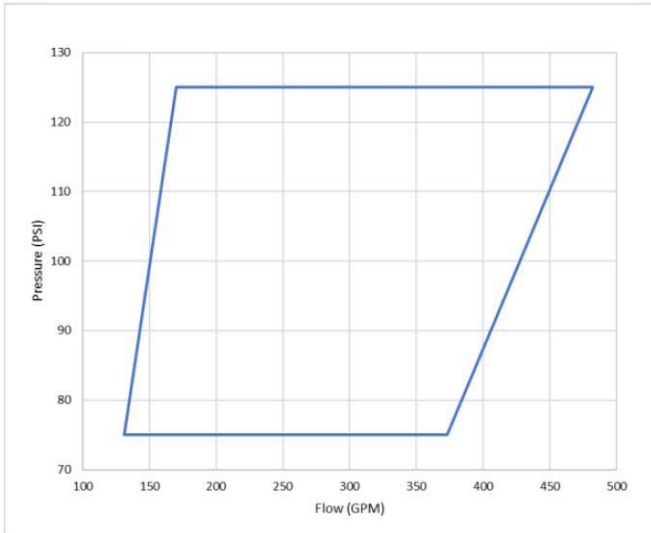


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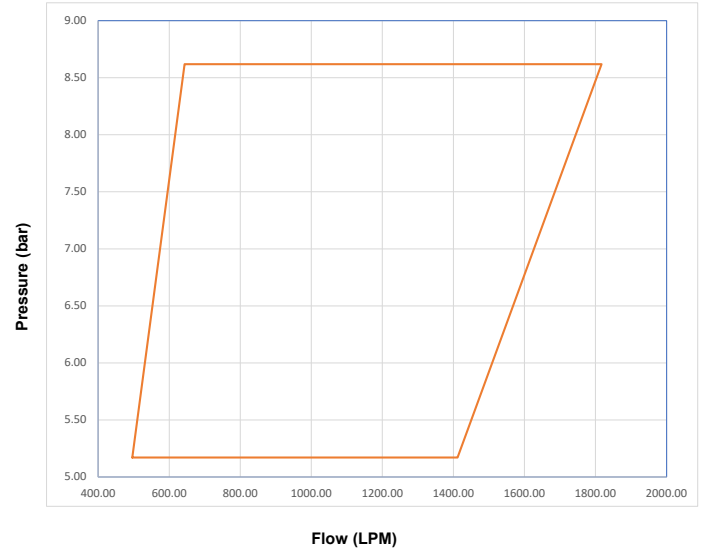
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Model VFM Foam Maker

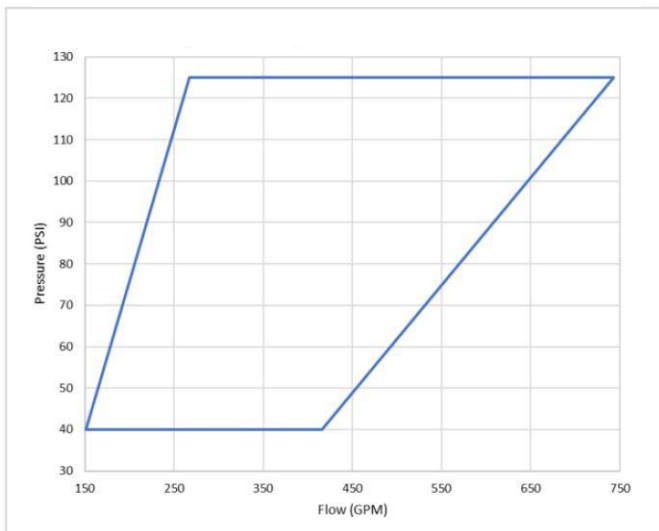
Graph 1.3A: VFM - FM - Heptane - 3" Foam Maker (ARK 3%)



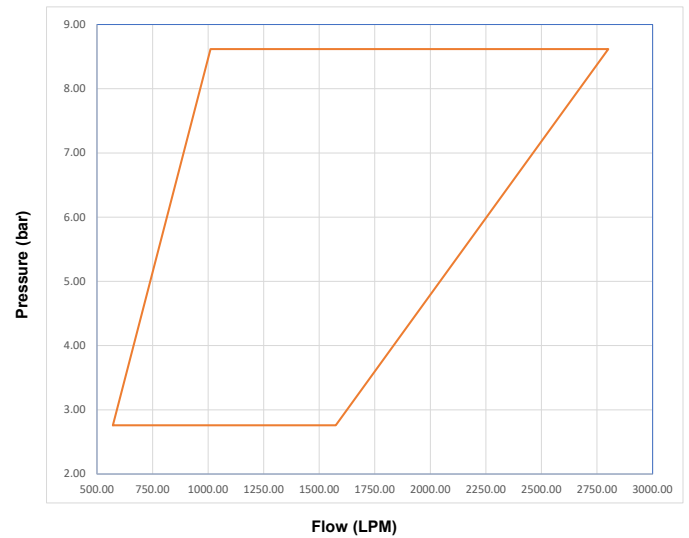
Graph 1.3B: VFM - FM - Heptane - 3" Foam Maker (ARK 3%) metric



Graph 1.4A: VFM - FM - Heptane - 4" Foam Maker (ARK 3%)



Graph 1.4B: VFM - FM - Heptane - 4" Foam Maker (ARK 3%) metric



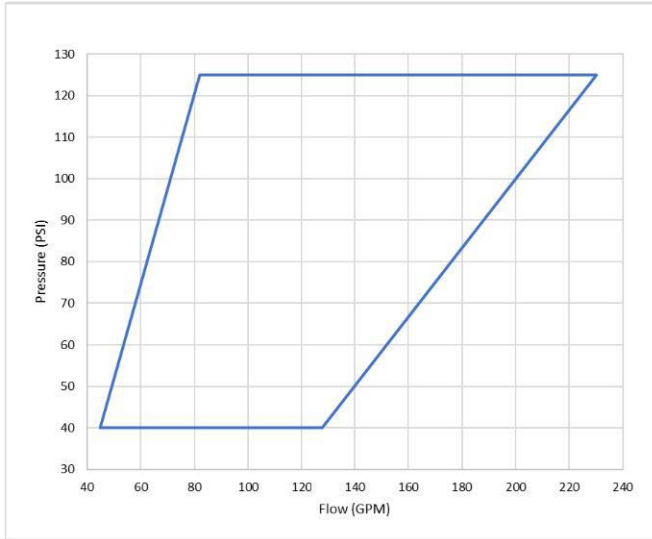


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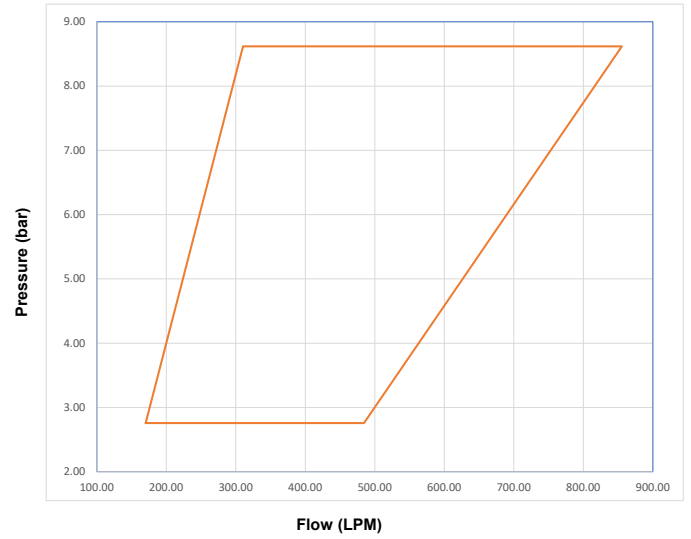
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Model VFM Foam Maker

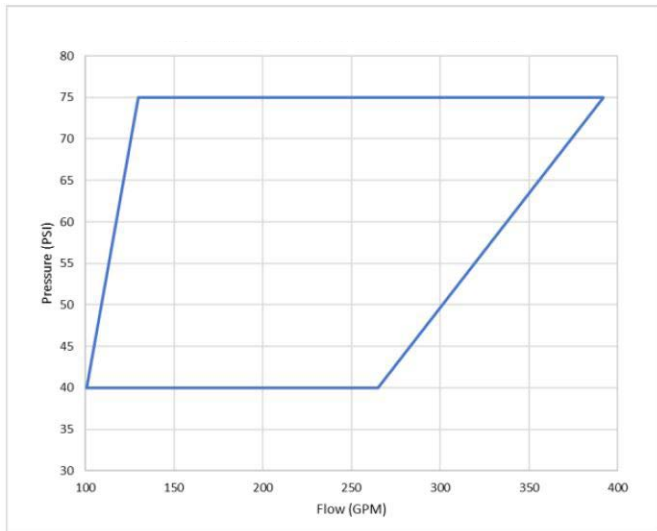
Graph 1.5A: VFM - FM - Heptane - 2.5" Foam Maker (USP 3%)



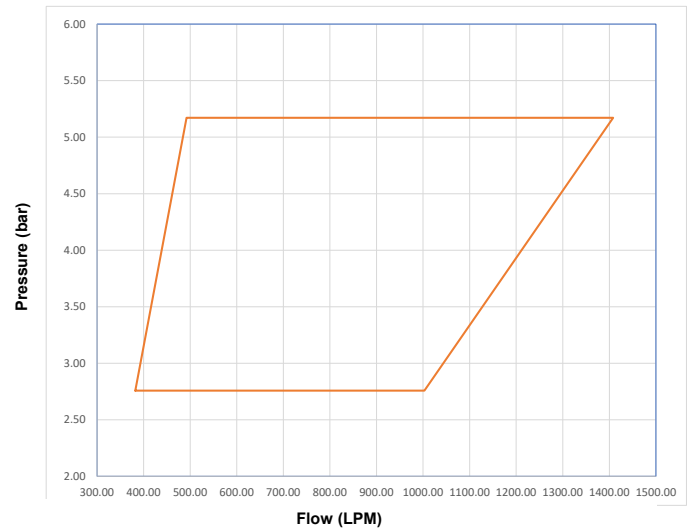
Graph 1.5B: VFM - FM - Heptane - 2.5" Foam Maker (USP 3%) metric



Graph 1.6A: VFM - FM - Heptane - 3" Foam Maker (USP 3%)



Graph 1.6B: VFM - FM - Heptane - 3" Foam Maker (USP 3%) metric





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Model VFM Foam Maker

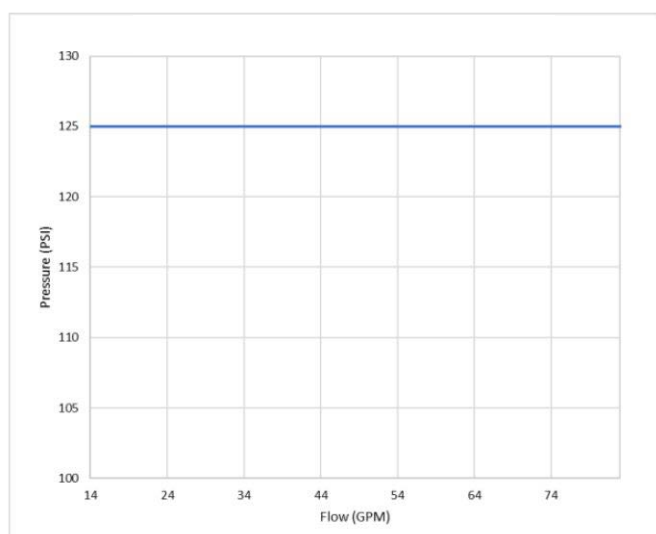
Table 2: FM Approvals for Model VFM Foam Maker (Alcohol IPA)^{1,4}

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
ARK 3%	1.5"	125	8.62	125	8.62	14	53	83	314	0.250 – 0.635	6.35 – 16.13	0.25	10.19	2.1
	2.5"	40	2.76	125	8.62	43	163	226	856	0.600 – 1.050	15.24 – 26.67	0.25	10.19	2.2
	3"	40	2.76	125	8.62	95	360	480	1817	0.906 – 1.531	23.01 – 38.89	0.25	10.19	2.3
	4"	40	2.76	125	8.62	151	572	740	2801	1.142 – 1.900	29.01 – 48.26	0.25	10.19	2.4

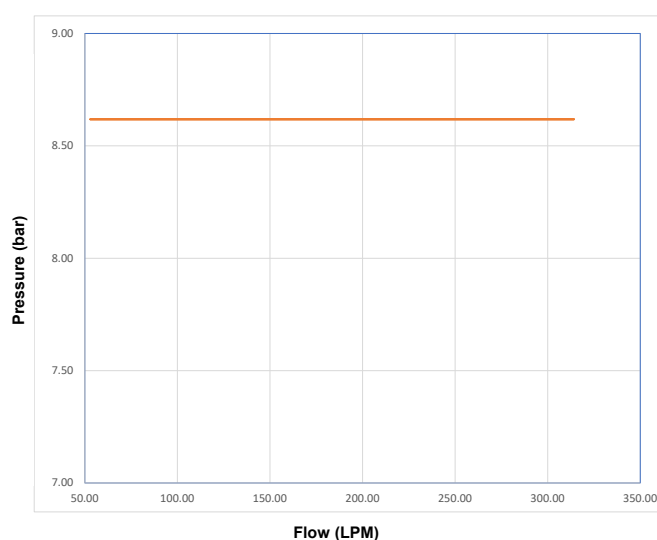
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4. Refer to the graphs below for design range.

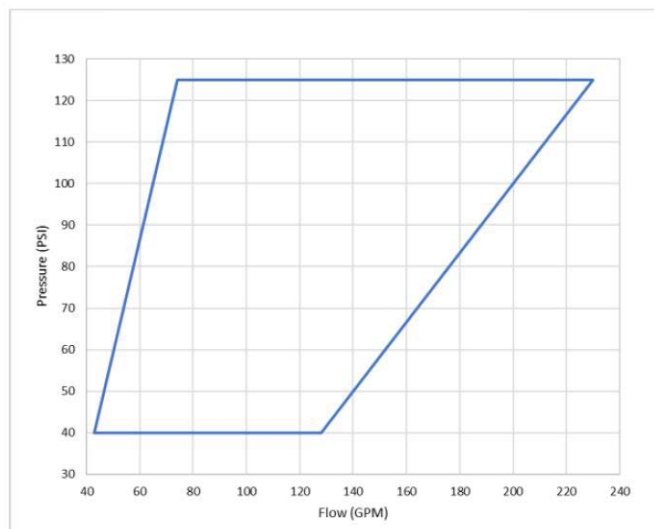
Graph 2.1A: VFM - FM - Alcohol (IPA) - 1.5" Foam Maker (ARK 3%)



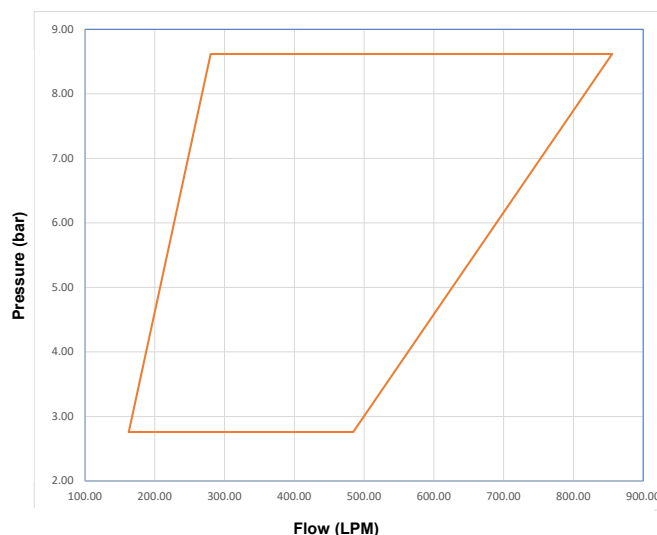
Graph 2.1B: VFM - FM - Alcohol (IPA) - 1.5" Foam Maker (ARK 3%) metric



Graph 2.2A: VFM - FM - Alcohol (IPA) - 2.5" Foam Maker (ARK 3%)



Graph 2.2B: VFM - FM - Alcohol (IPA) - 2.5" Foam Maker (ARK 3%) metric



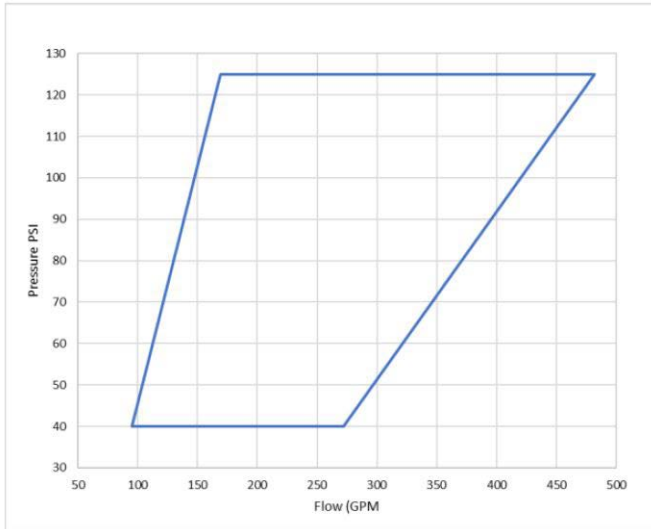


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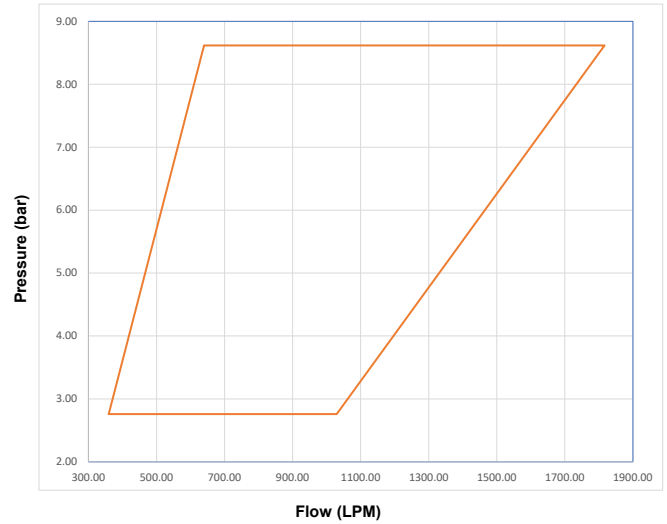
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Model VFM Foam Maker

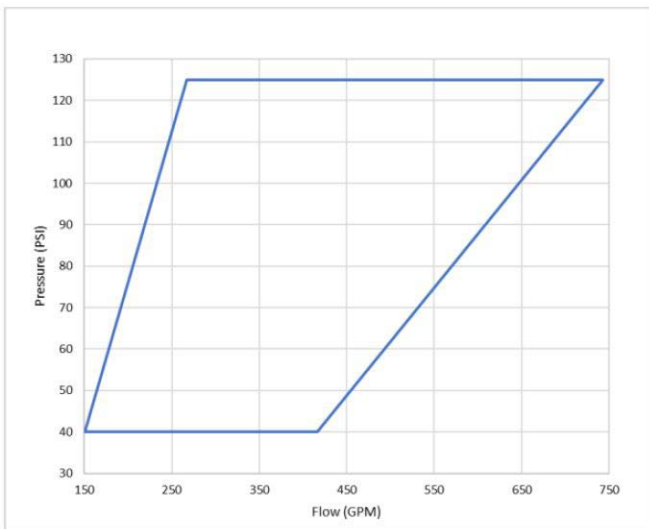
Graph 2.3A: VFM - FM - Alcohol (IPA) - 3" Foam Maker (ARK 3%)



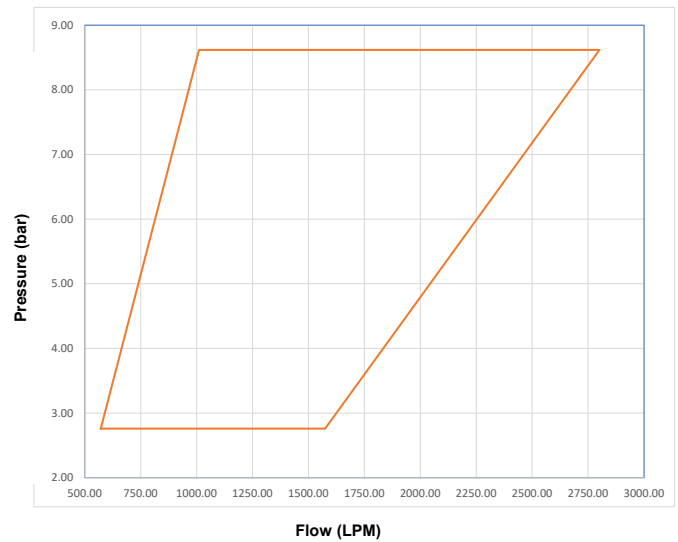
Graph 2.3B: VFM - FM - Alcohol (IPA) - 3" Foam Maker (ARK 3%) metric



Graph 2.4A: VFM - FM - Alcohol (IPA) - 4" Foam Maker (ARK 3%)



Graph 2.4B: VFM - FM - Alcohol (IPA) - 4" Foam Maker (ARK 3%) metric





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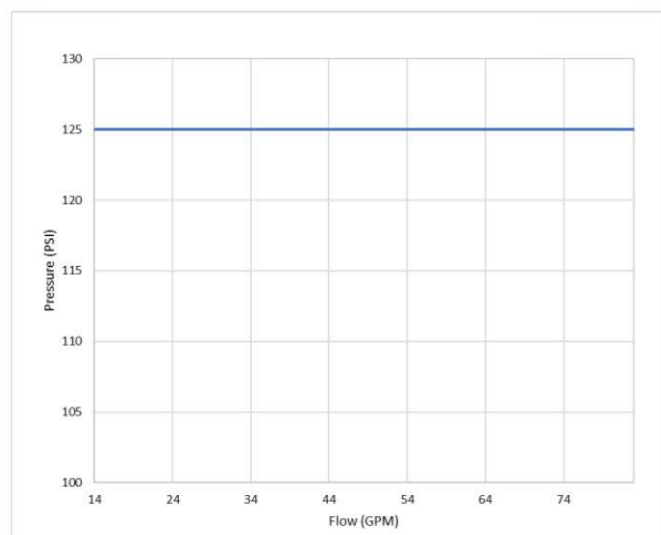
Table 3: FM Approvals for Model VFM Foam Maker (Ketone-Acetone)^{1,4}

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
ARK 3%	1.5"	125	8.62	125	8.62	14	53	83	314	0.250 – 0.635	6.35 – 16.13	0.20	8.15	3.1
	2.5"	40	2.76	125	8.62	43	163	226	856	0.600 – 1.050	15.24 – 26.67	0.20	8.15	3.2
	3"	40	2.76	125	8.62	95	360	480	1817	0.906 – 1.531	23.01 – 38.89	0.20	8.15	3.3
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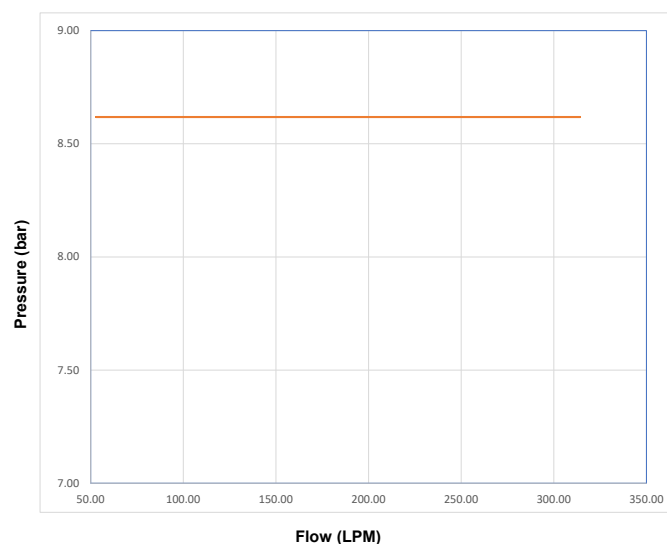
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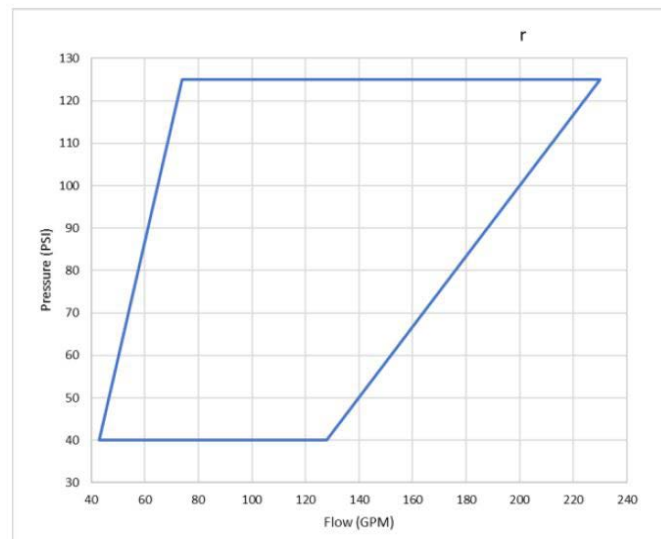
Graph 3.1A: VFM - FM - Ketone-Acetone - 1.5" Foam Maker (ARK 3%)



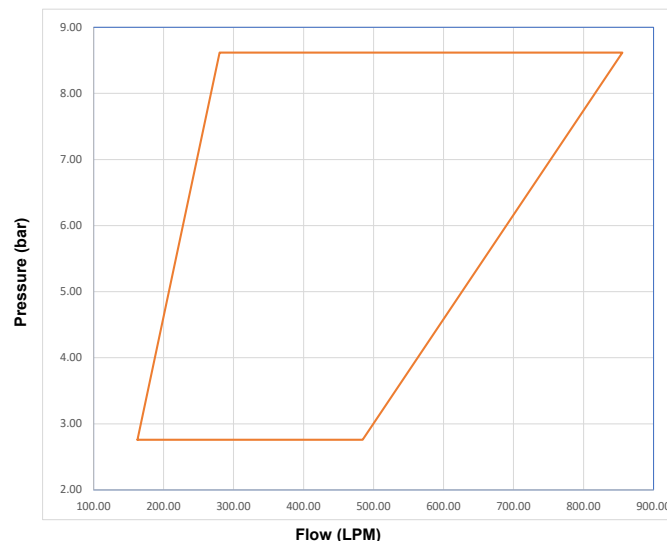
Graph 3.1B: VFM - FM - Ketone-Acetone - 1.5" Foam Maker (ARK 3%) metric



Graph 3.2: VFM - FM - Ketone-Acetone - 2.5" Foam Maker (ARK 3%)



Graph 3.1B: VFM - FM - Ketone-Acetone - 2.5" Foam Maker (ARK 3%) metric



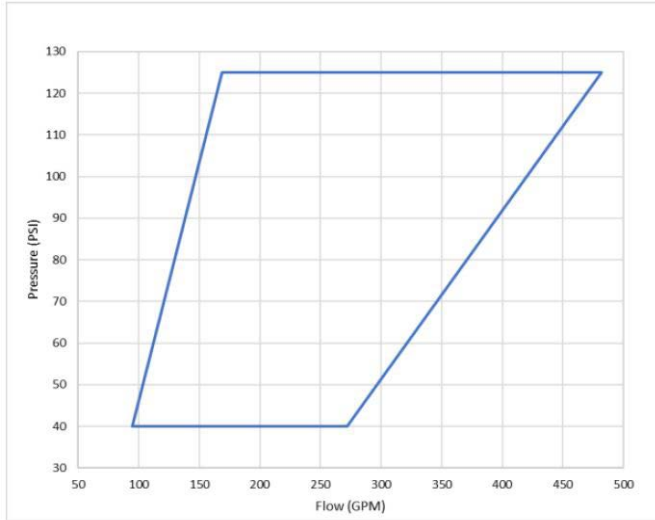


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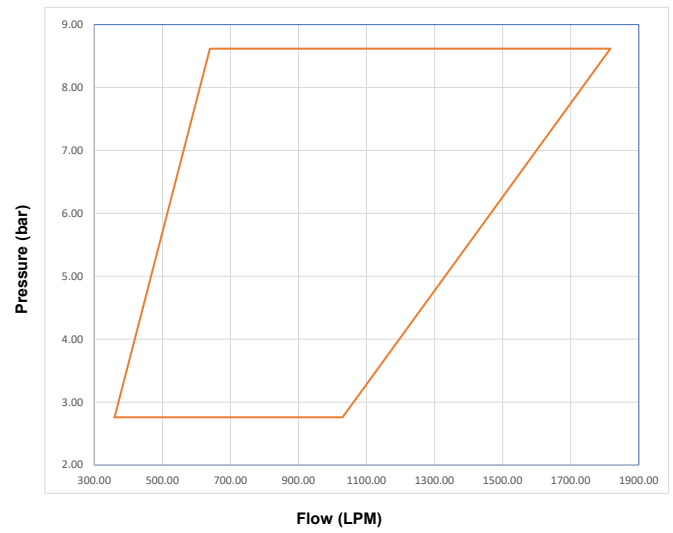
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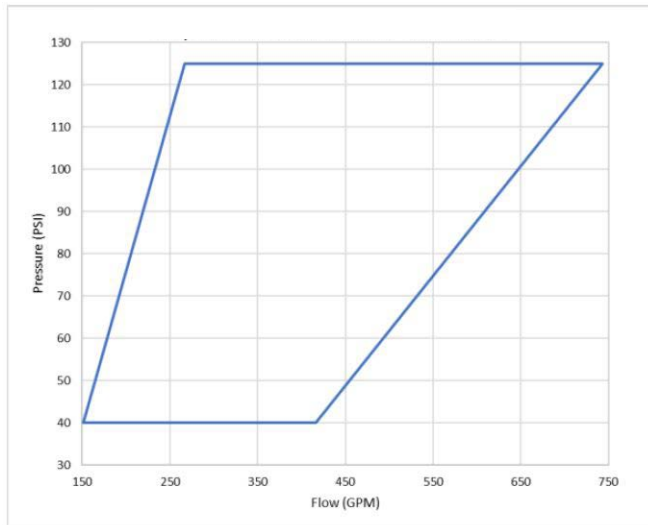
Graph 3.3A: VFM - FM - Ketone-Acetone - 3" Foam Maker (ARK 3%)



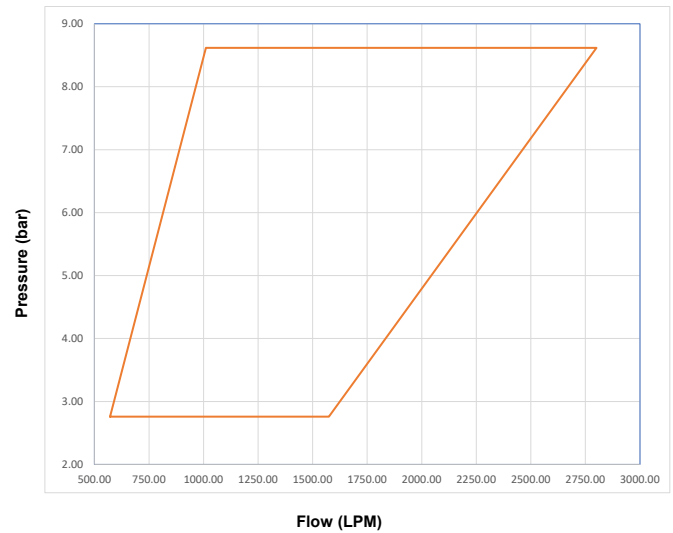
Graph 3.3B: VFM - FM - Ketone-Acetone - 2.5" Foam Maker (ARK 3%) metric



Graph 3.4A: VFM - FM - Ketone-Acetone - 4" Foam Maker (ARK 3%)



Graph 3.4B: VFM - FM - Ketone-Acetone - 4" Foam Maker (ARK 3%) metric





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Model VFM Foam Maker

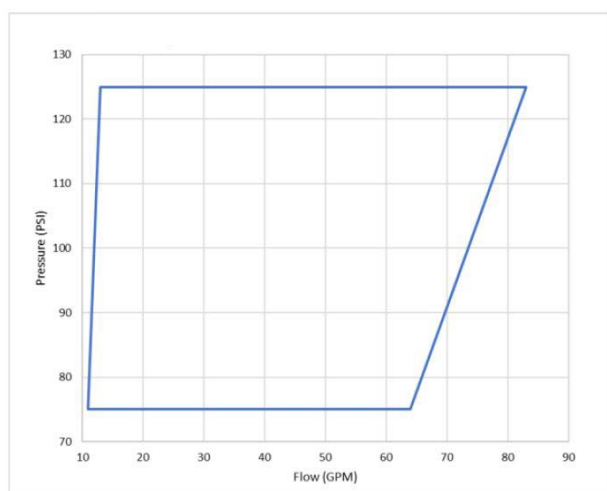
Table 4: FM Approvals for Model VFM Foam Maker (Ethanol)^{1,4}

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
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		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
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	2.5"	40	2.76	125	8.62	43	163	226	856	0.600 – 1.050	15.24 – 26.67	0.167	6.8	4.2
	3"	40	2.76	125	8.62	95	360	480	1817	0.906 – 1.531	23.01 – 38.89	0.167	6.8	4.3
	4"	40	2.76	125	8.62	151	572	740	2801	1.142 – 1.900	29.01 – 48.26	0.167	6.8	4.4
USP 3%	2.5"	75	5.17	125	8.62	63	238.5	230	870.6	0.600 – 1.050	15.24 – 26.67	0.167	6.8	4.5
	3"	40	2.76	125	8.62	101	382.3	493	1866	0.906 – 1.531	23.01 – 38.89	0.167	6.8	4.6
	4"	75	5.17	75	5.17	212	802.4	576	2180	1.142 – 1.900	29.01 – 48.26	0.167	6.8	4.7
	4"	40	2.76	125	8.62	283	1071.1	468	1771.4	1.498	38.05	0.167	6.8	4.8

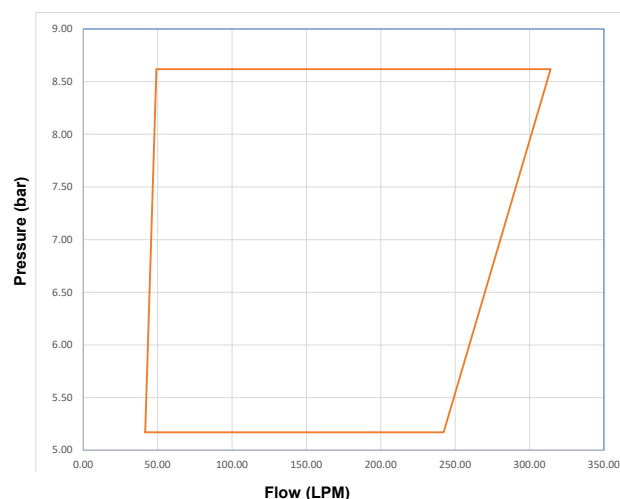
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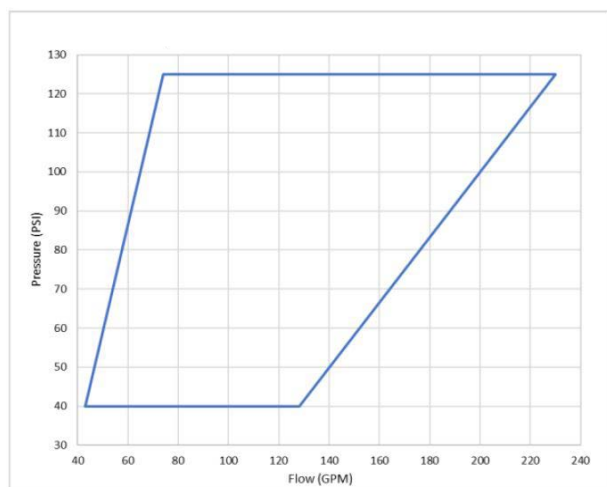
Graph 4.1: VFM - FM - Ethanol - 1.5" Foam Maker (ARK 3%)



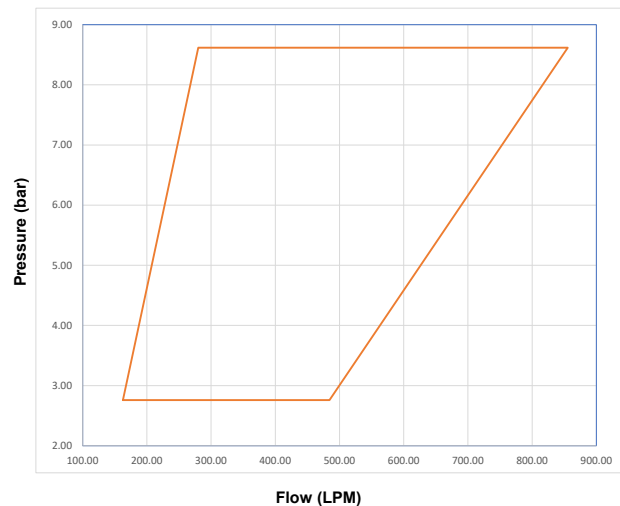
Graph 4.1B: VFM - FM - Ethanol - 1.5" Foam Maker (ARK 3%) metric



Graph 4.2: VFM - FM - Ethanol - 2.5" Foam Maker (ARK 3%)



Graph 4.2B: VFM - FM - Ethanol - 2.5" Foam Maker (ARK 3%) metric



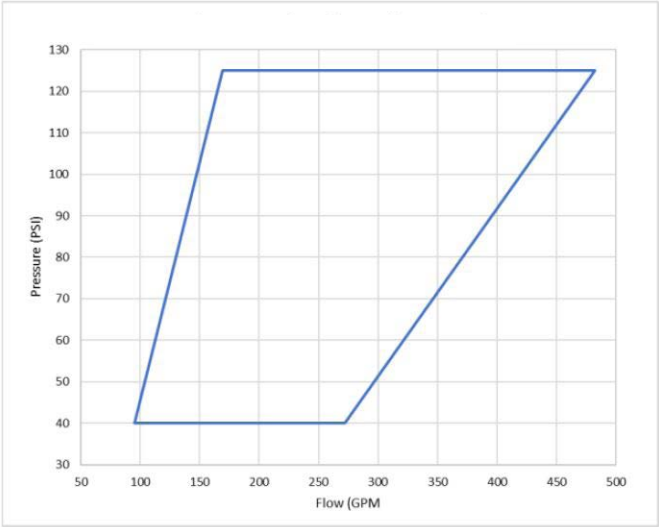


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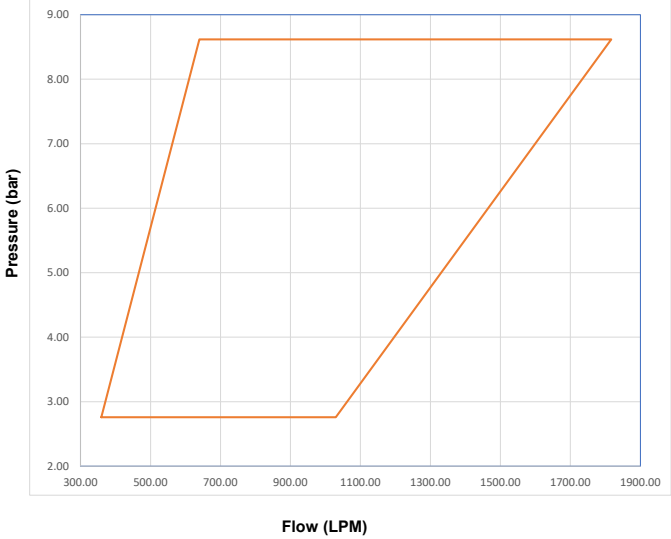
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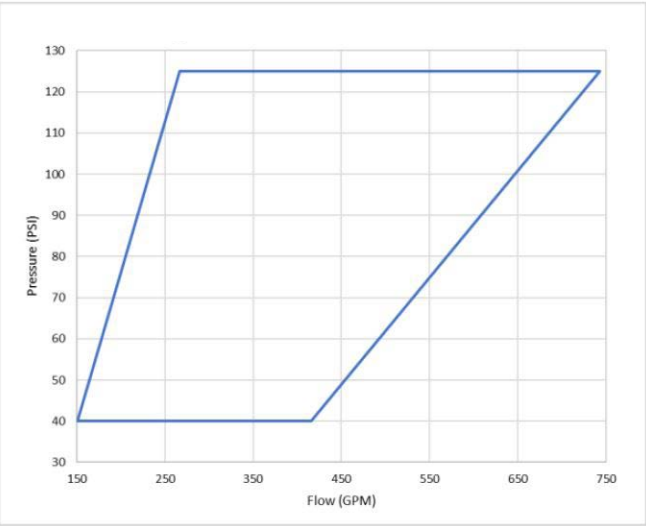
Graph 4.3: VFM - FM - Ethanol - 3" Foam Maker (ARK 3%)



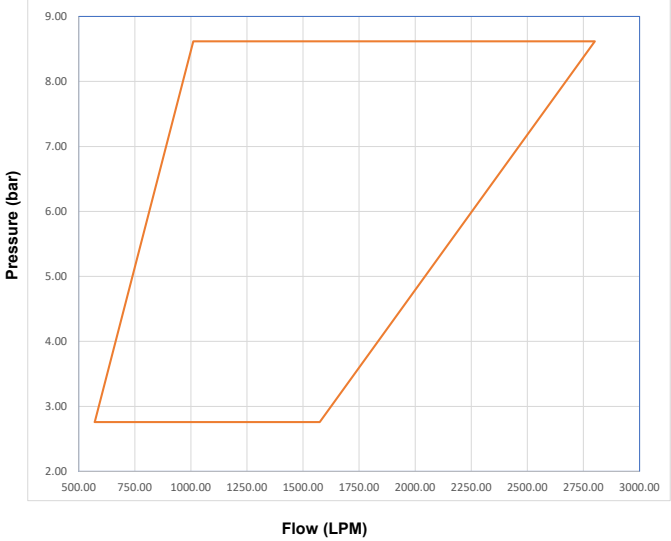
Graph 4.3B: VFM - FM - Ethanol - 3" Foam Maker (ARK 3%) metric



Graph 4.4: VFM - FM - Ethanol - 4" Foam Maker (ARK 3%)



Graph 4.4B: VFM - FM - Ethanol - 4" Foam Maker (ARK 3%) metric



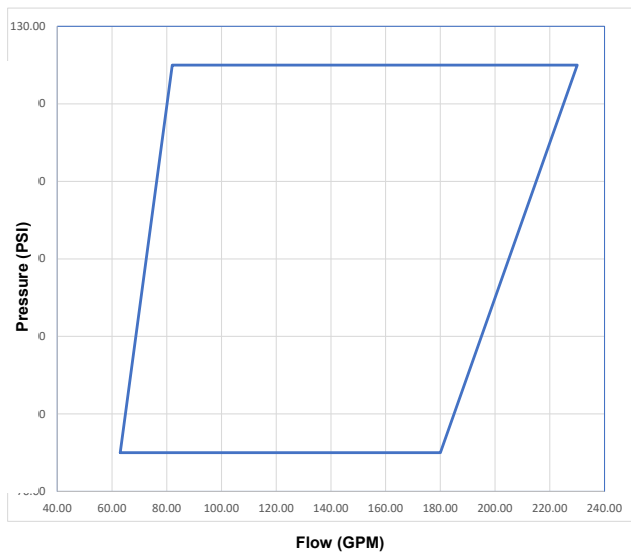


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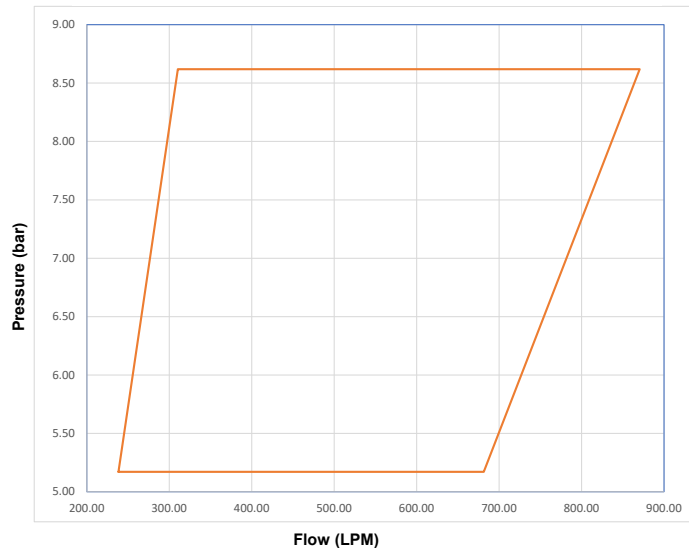
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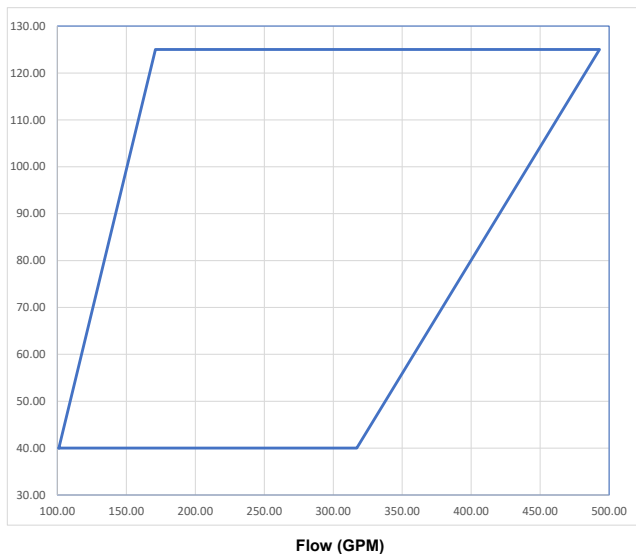
Graph 4.5A: VFM - FM - Ethanol - 2.5" Foam Maker (USP 3%)



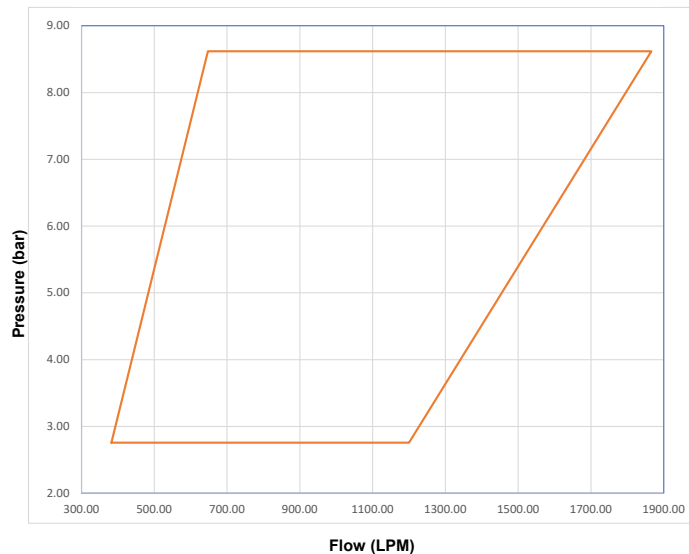
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Graph 4.6B: VFM - FM - Ethanol - 3" Foam Maker (USP 3%) metric



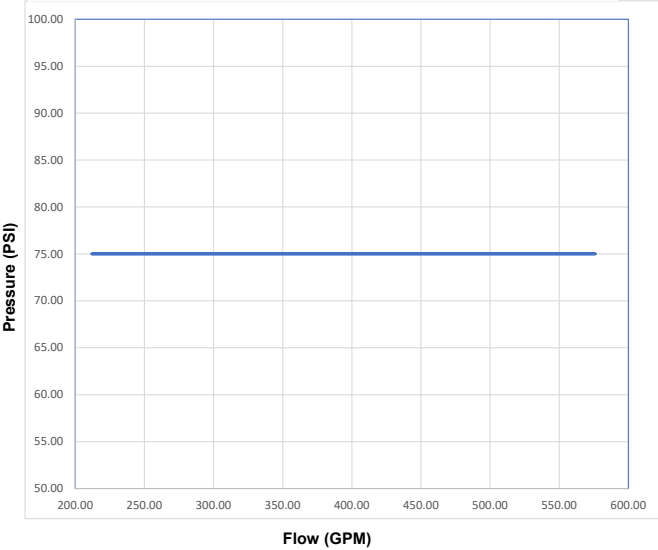


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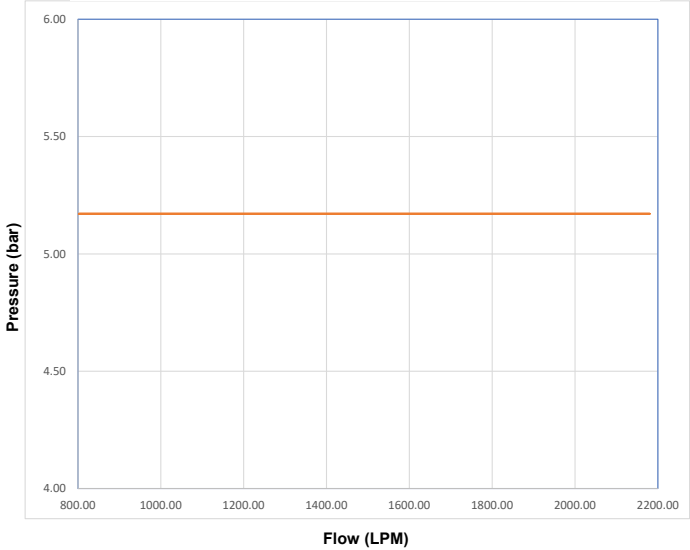
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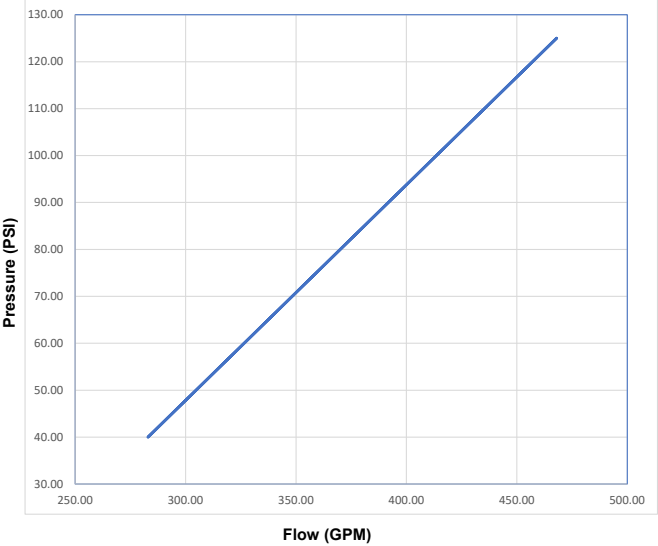
Graph 4.7A: VFM - FM - Ethanol - 4" Foam Maker (USP 3%)



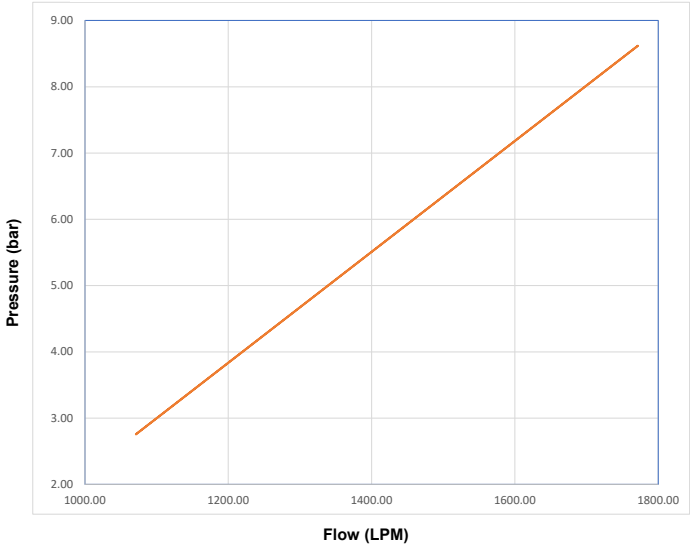
Graph 4.7B: VFM - FM - Ethanol - 4" Foam Maker (USP 3%) metric



Graph 4.8A: VFM - FM - Ethanol (2) - 4" Foam Maker (USP 3%)



Graph 4.8B: VFM - FM - Ethanol (2) - 4" Foam Maker (USP 3%) metric





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DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFM Foam Maker

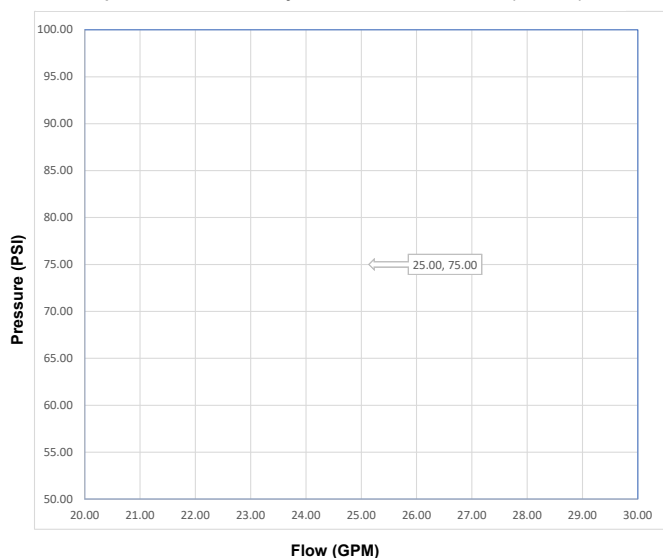
Table 5: FM Approvals for Model VFM Foam Maker (Ethyl Acetate)^{1,4}

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
ARK 3%	1.5"	75	5.17	75	5.17	25	42	25	314	0.399	10.13	0.60	24.45	5.1
	2.5"	75	5.17	75	5.17	183	692.7	183	692.7	1.050	26.67	0.60	24.45	5.2
	3"	125	8.62	125	8.62	172	651	172	651	0.906	23.01	0.60	24.45	5.3

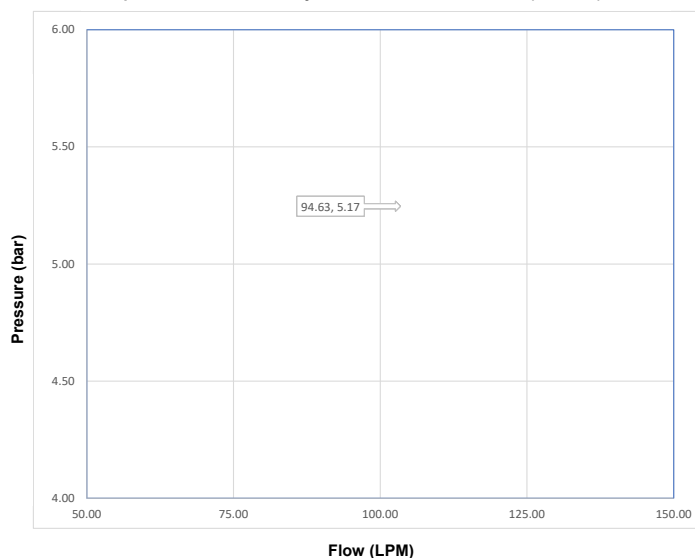
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

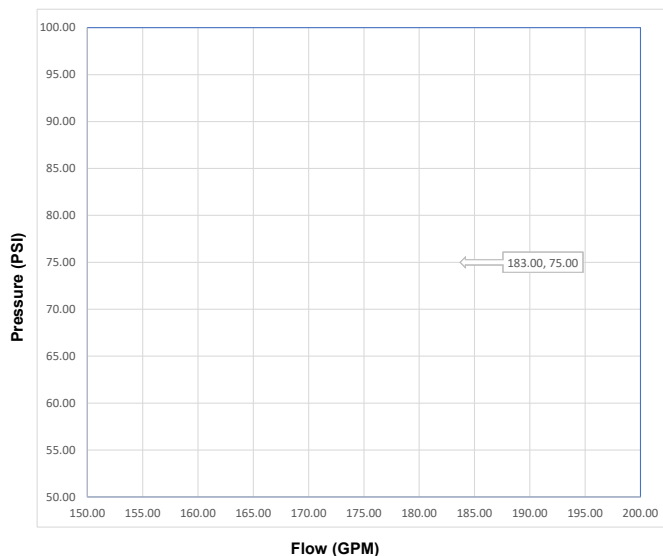
Graph 5.1A: VFM - FM - Ethyl Acetate - 1.5" Foam Maker (ARK 3%)



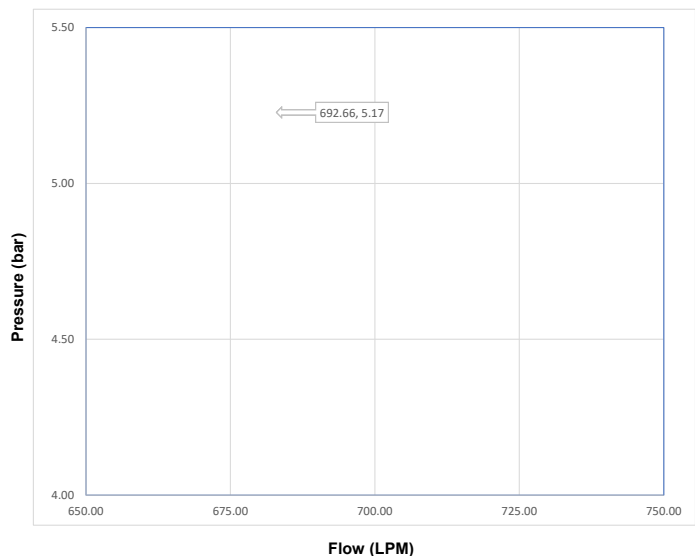
Graph 5.1B: VFM - FM - Ethyl Acetate - 1.5" Foam Maker (ARK 3%) metric



Graph 5.2A: VFM - FM - Ethyl Acetate - 2.5" Foam Maker (ARK 3%)



Graph 5.2B: VFM - FM - Ethyl Acetate - 2.5" Foam Maker (ARK 3%) metric



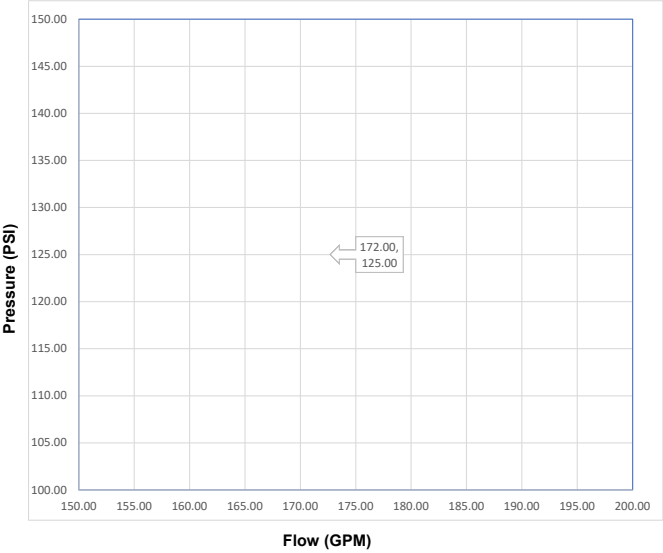


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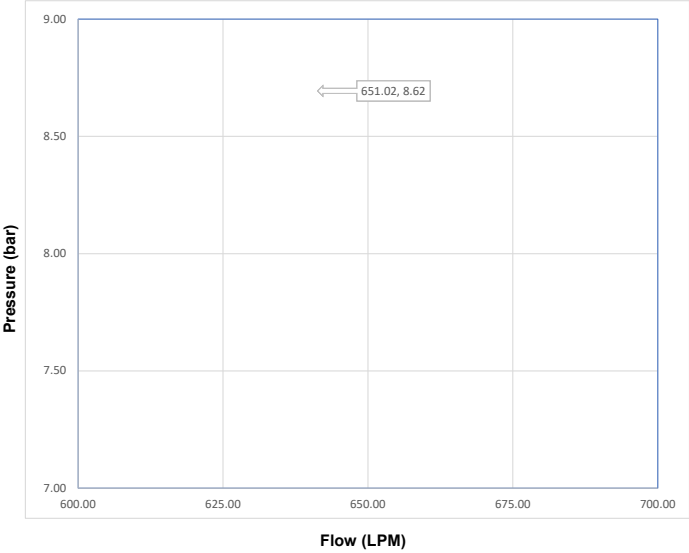
DISCHARGE DEVICES FOR
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Graph 5.3A: VFM - FM - Ethyl Acetate - 3" Foam Maker (ARK 3%)



Graph 5.3B: VFM - FM - Ethyl Acetate - 3" Foam Maker (ARK 3%) metric





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DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFM Foam Maker

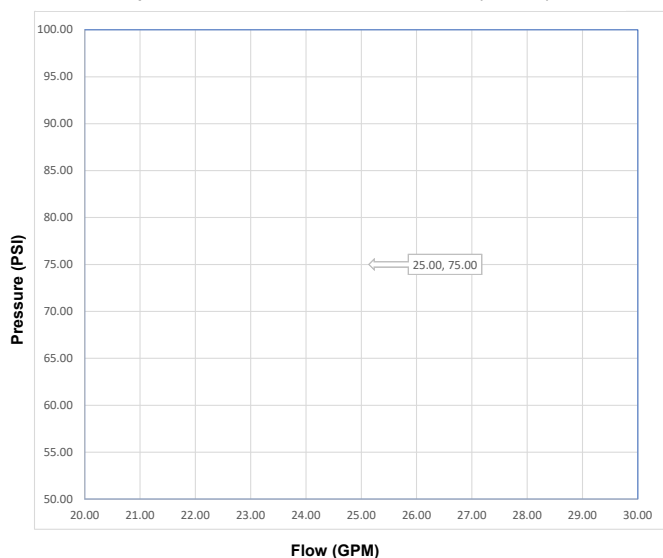
Table 6: FM Approvals for Model VFM Foam Maker (MEK^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
ARK 3%	1.5"	75	5.17	75	5.17	25	94.6	25	94.6	0.399	10.13	0.60	24.45	6.1
	2.5"	75	5.17	75	5.17	183	692.7	183	692.7	1.050	26.67	0.60	24.45	6.2
	3"	125	8.62	125	8.62	172	651	172	651	0.906	23.01	0.60	24.45	5.3

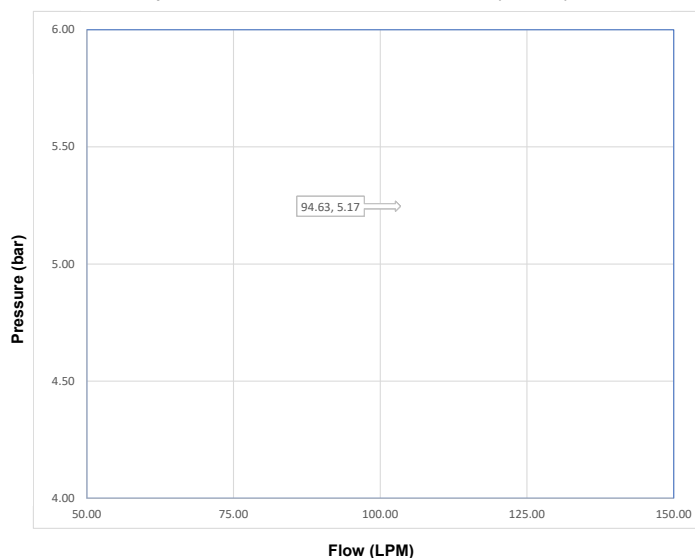
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

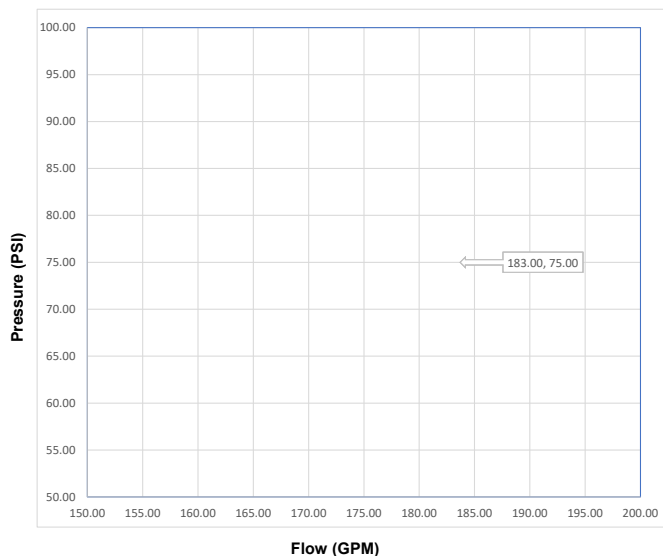
Graph 6.1A: VFM - FM - MEK - 1.5" Foam Maker (ARK 3%)



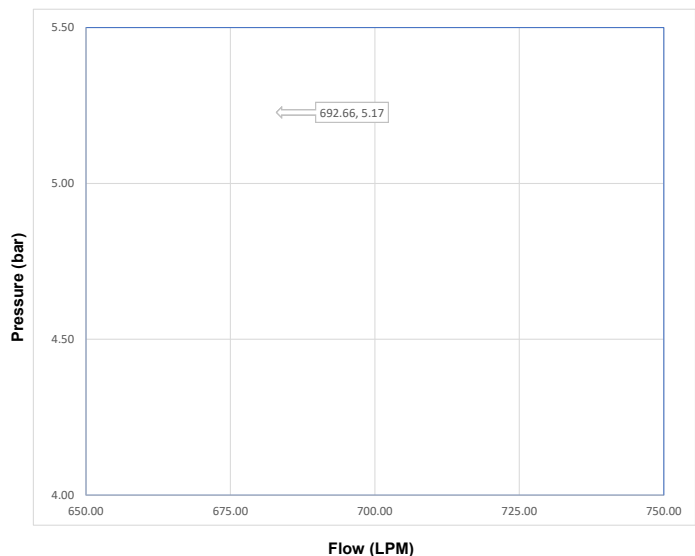
Graph 6.1B: VFM - FM - MEK - 1.5" Foam Maker (ARK 3%) metric



Graph 6.2A: VFM - FM - MEK - 2.5" Foam Maker (ARK 3%)



Graph 6.2B: VFM - FM - MEK - 2.5" Foam Maker (ARK 3%) metric



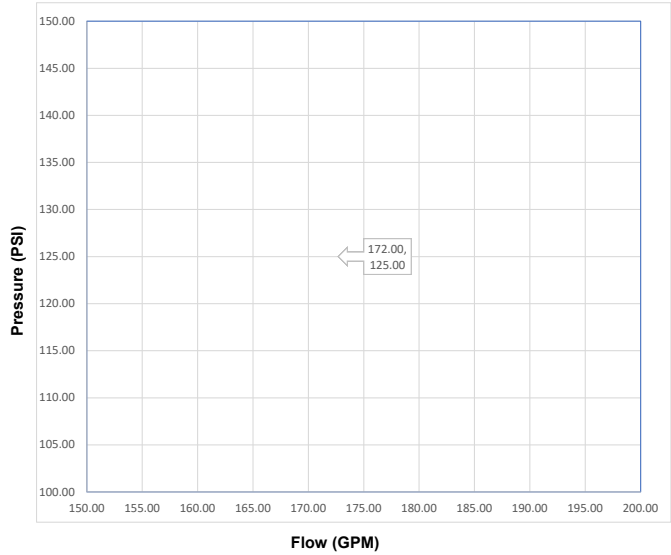


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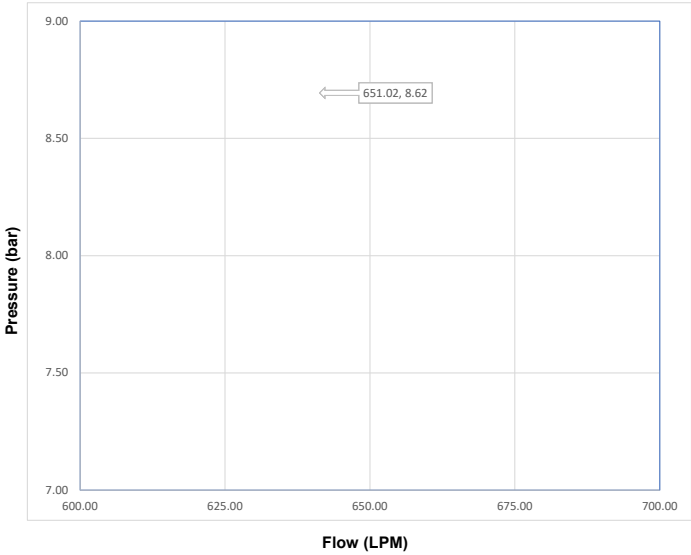
DISCHARGE DEVICES FOR
USE WITH SFFF FOAM
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Model VFM Foam Maker

Graph 6.3A: VFM - FM - MEK - 3" Foam Maker (ARK 3%)



Graph 6.3B: VFM - FM - MEK - 3" Foam Maker (ARK 3%) metric





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DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFM Foam Maker

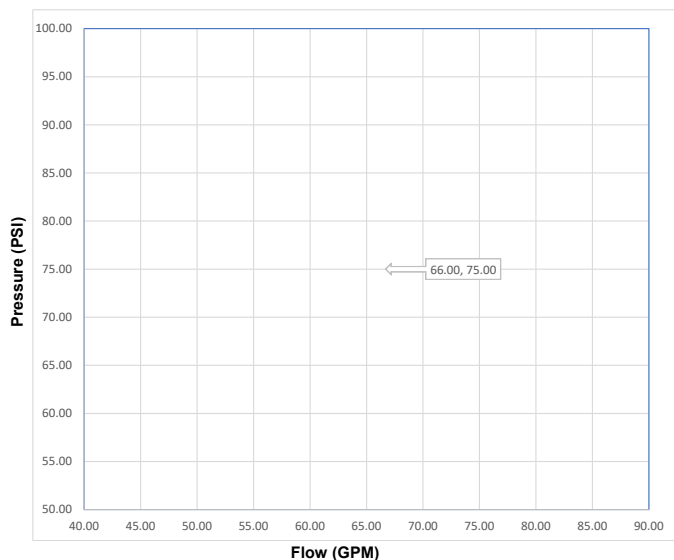
Table 7: FM Approvals for Model VFM Foam Maker (Miscella)^{1,4}

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
USP 3%	1.5"	75	5.17	75	5.17	66	250	66	250	0.635 – 0.635	16.13 – 16.13	0.167	6.8	7.1
	4"	125	8.62	125	8.62	755	2858	755	2858	1.900 – 1.900	48.26 – 48.26	0.167	6.8	7.2

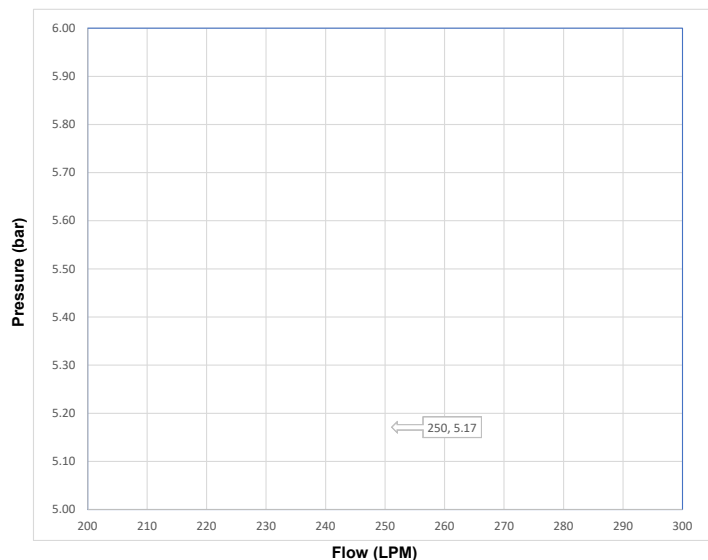
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

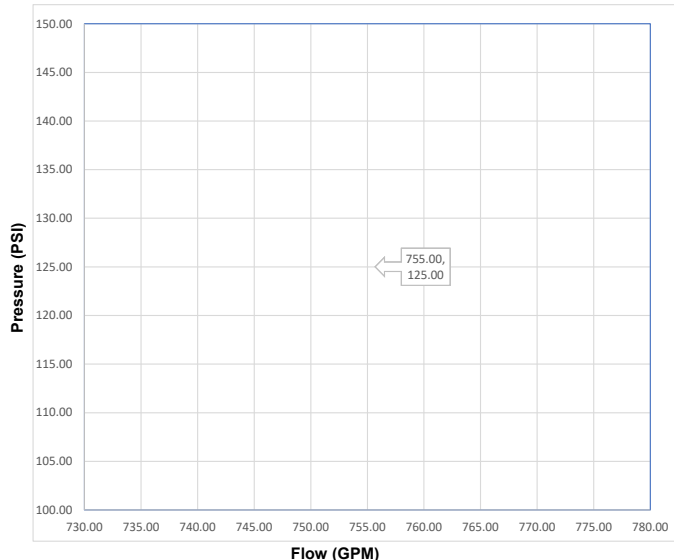
Graph 7.1A - VFM - FM - Miscella 1.5" Foam Maker (USP 3%)



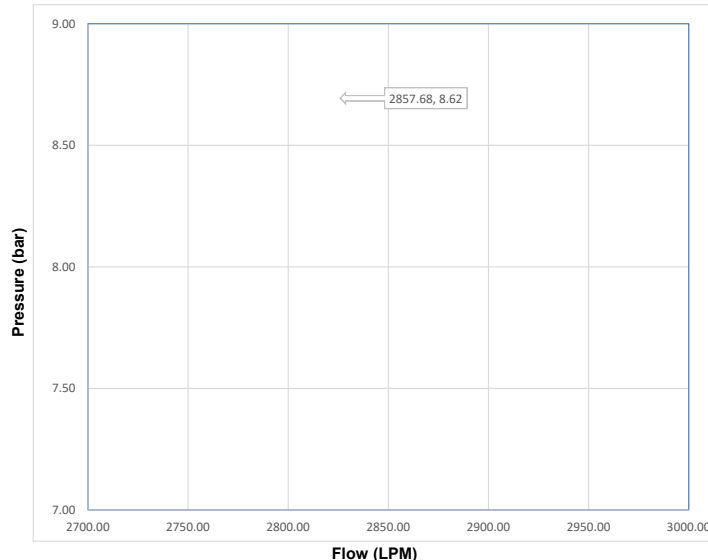
Graph 7.1B- VFM - FM - Miscella 1.5" Foam Maker (USP 3%) metric



Graph 7.2A - VFM - FM - Miscella 2.5" Foam Maker (USP 3%)



Graph 7.2B- VFM - FM - Miscella 2.5" Foam Maker (USP 3%) metric





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Model VFM Foam Maker

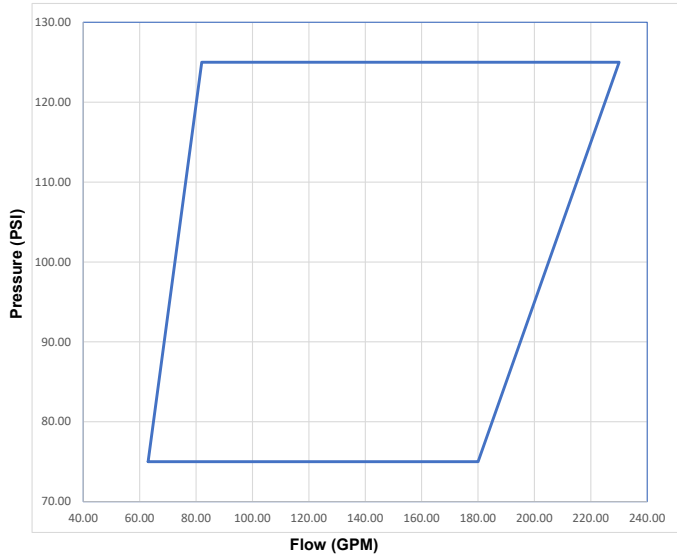
Table 8: FM Approvals for Model VFM Foam Maker (Methanol^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
USP 3%	2.5"	75	5.17	125	8.62	63	238.5	230	870.6	0.600 – 1.050	15.24 – 26.67	0.167	6.8	8.1
	3"	40	2.76	125	8.62	101	382.3	493	1866	0.906 – 1.531	23.01 – 38.89	0.167	6.8	8.2
	4"	75	5.17	75	5.17	212	802.4	576	2180.2	1.142 – 1.900	29.01 – 48.26	0.167	6.8	8.3
	4"	40	2.76	125	8.62	283	1071.2	468	1771.4	1.498	38.05	0.167	6.8	8.4

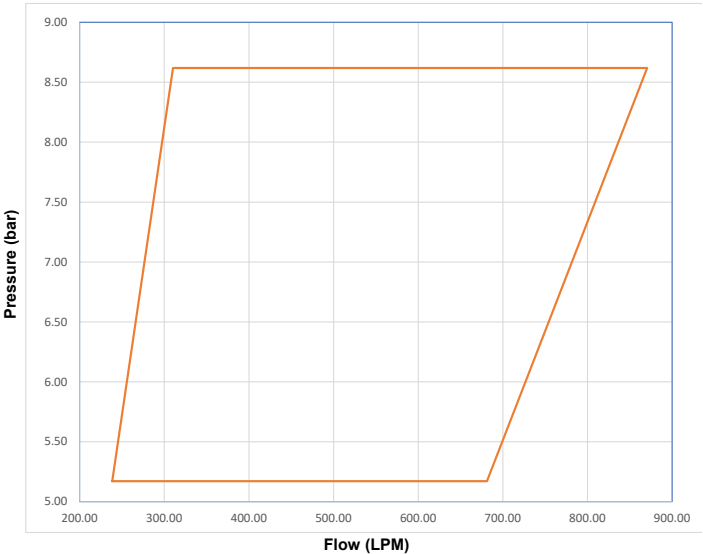
Footnotes:

- 1. This table shows listings available at the time of publication.
- 2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
- 3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
- 4. Refer to the graphs below for design range.

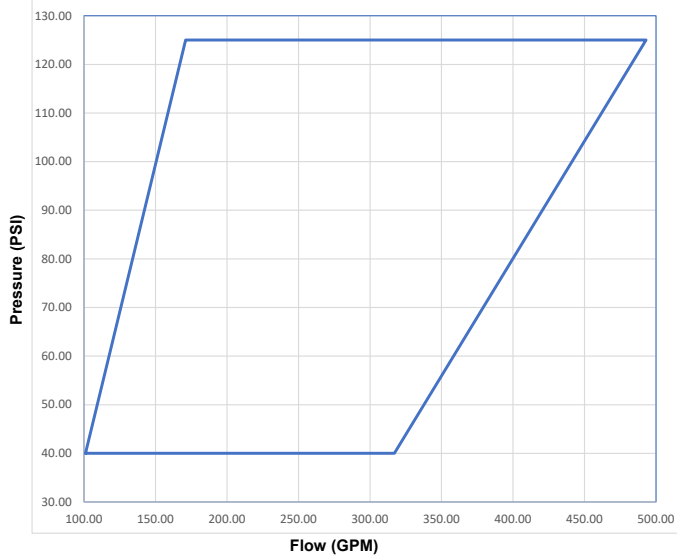
Graph 8.1A - VFM - FM - Methanol 2.5" Foam Maker (USP 3%)



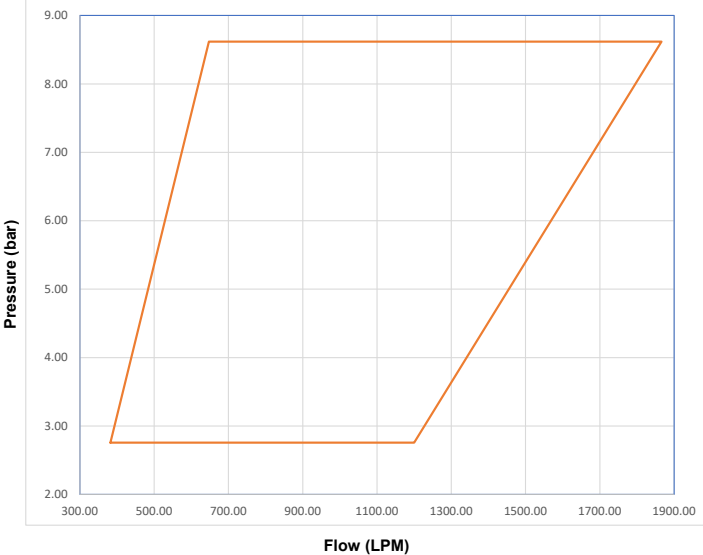
Graph 8.1B - VFM - FM - Methanol 2.5" Foam Maker (USP 3%) metric



Graph 8.2A - VFM - FM - Methanol 3" Foam Maker (USP 3%)



Graph 8.2B - VFM - FM - Methanol 3" Foam Maker (USP 3%)



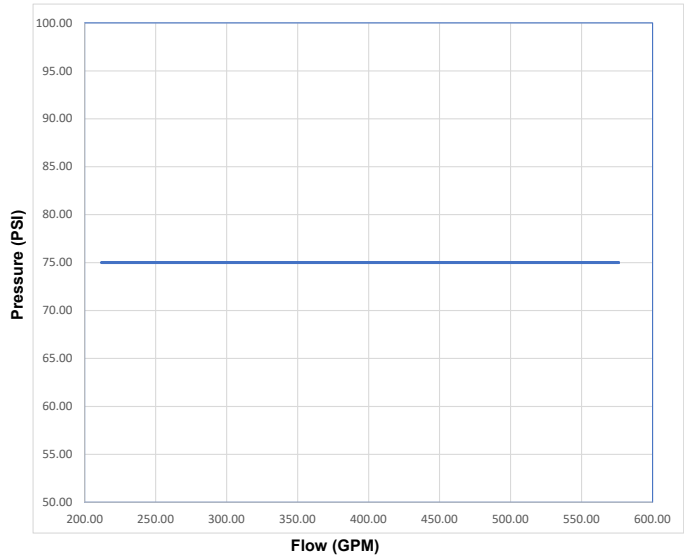


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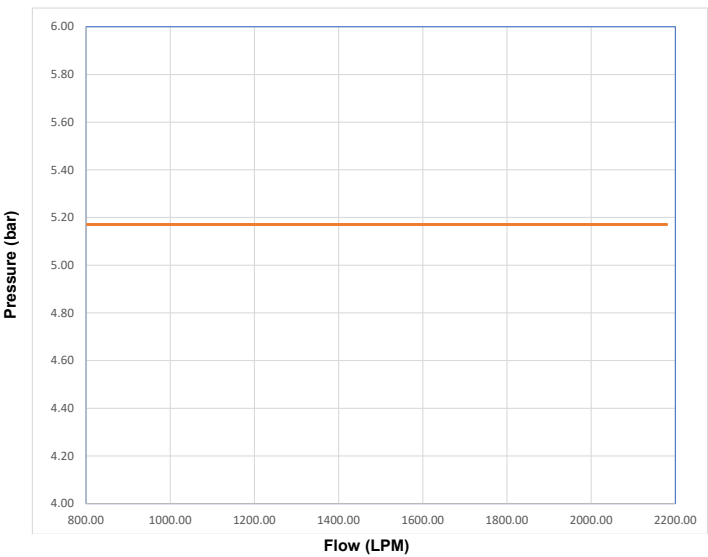
DISCHARGE DEVICES FOR
USE WITH SFFF FOAM
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Model VFM Foam Maker

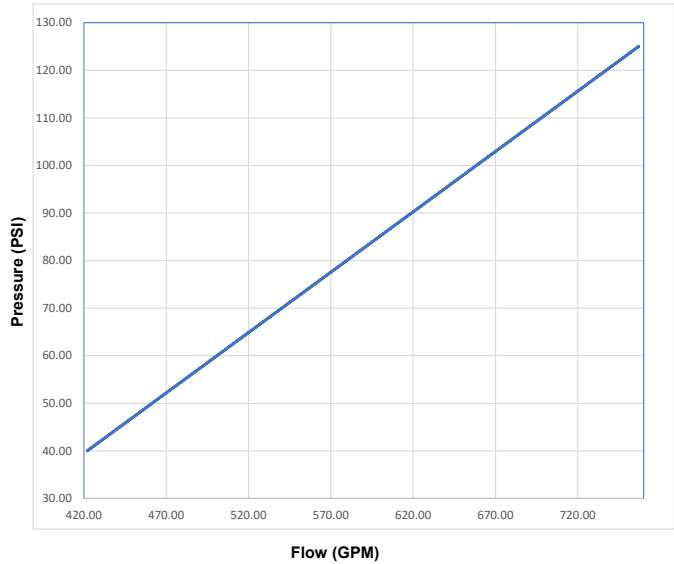
Graph 8.3A - VFM - FM - Methanol 4" Foam Maker (USP 3%)



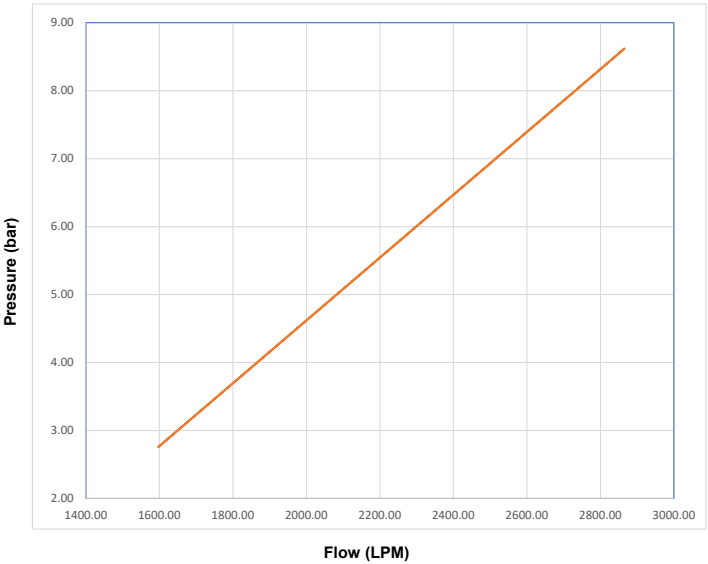
Graph 8.3B - VFM - FM - Methanol 4" Foam Maker (USP 3%) metric



Graph 8.3A - VFM - FM - Methanol (2) 4" Foam Maker (USP 3%)



Graph 8.3B - VFM - FM - Methanol (2) 4" Foam Maker (USP 3%)





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Model VFM Foam Maker

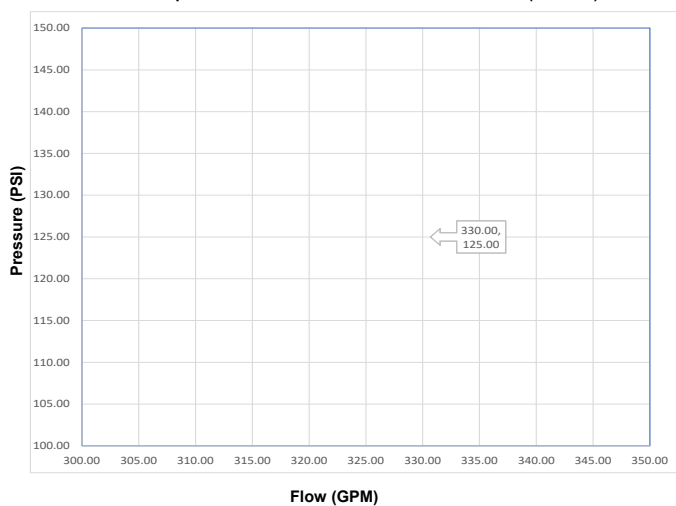
Table 9: FM Approvals for Model VFM Foam Maker (Hexane^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
USP 3%	3"	125	8.62	125	8.62	330	1249	330	1249	1.219	30.96	0.167	6.8	9.1
	4"	75	5.17	75	5.17	212	802	212	802	1.142	29.01	0.167	6.8	9.2

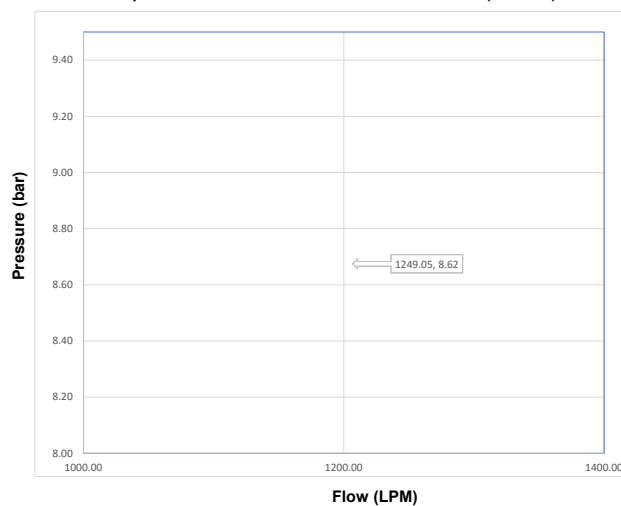
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

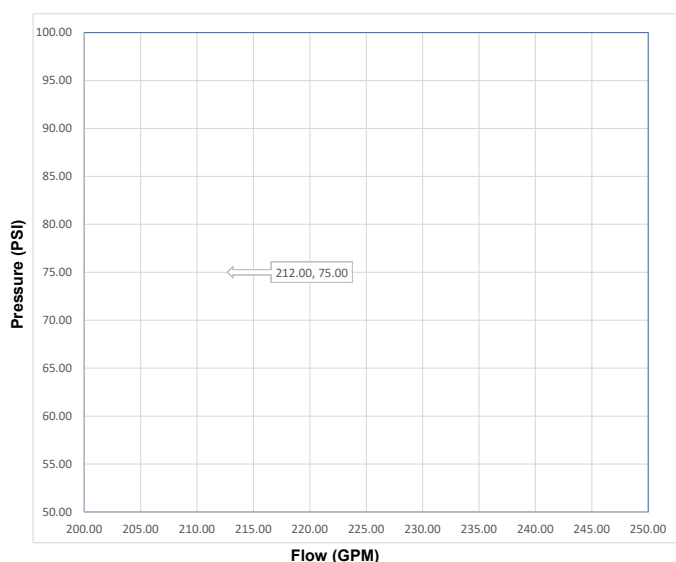
Graph 9.1A - VFM - FM - Hexane - 3" Foam Maker (USP 3%)



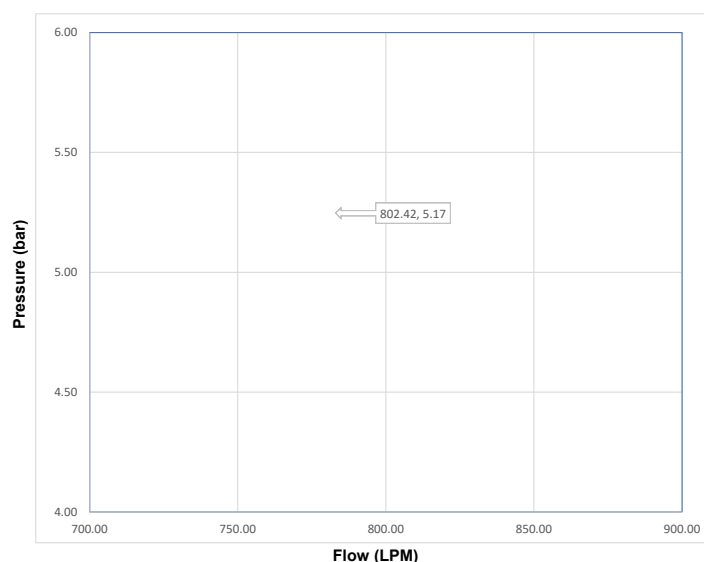
Graph 9.1B - VFM - FM - Hexane - 3" Foam Maker (USP 3%) metric



Graph 9.2A - VFM - FM - Hexane - 4" Foam Maker (USP 3%)



Graph 9.2B - VFM - FM - Hexane - 4" Foam Maker (USP 3%) metric





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DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFM Foam Maker

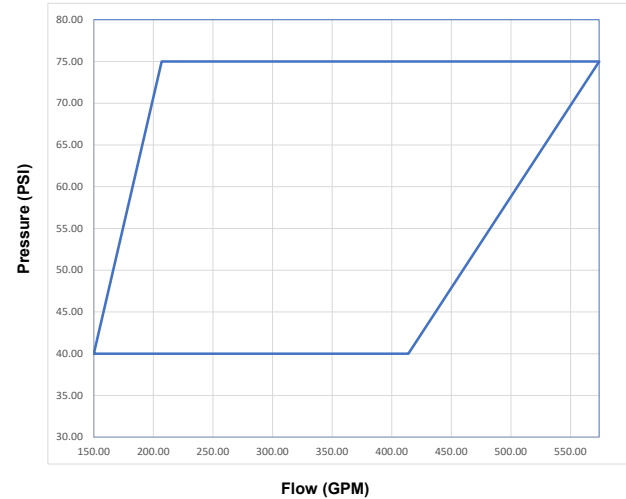
Table 10: FM Approvals for Model VFM Foam Maker (Jet A1^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum				Approved Foam Design Density ²		
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
USP 3%	4"	40	2.76	75	5.17	150	567.8	574	2172.6	1.142 – 1.900	29.01 – 48.26	0.167	6.8	10.1

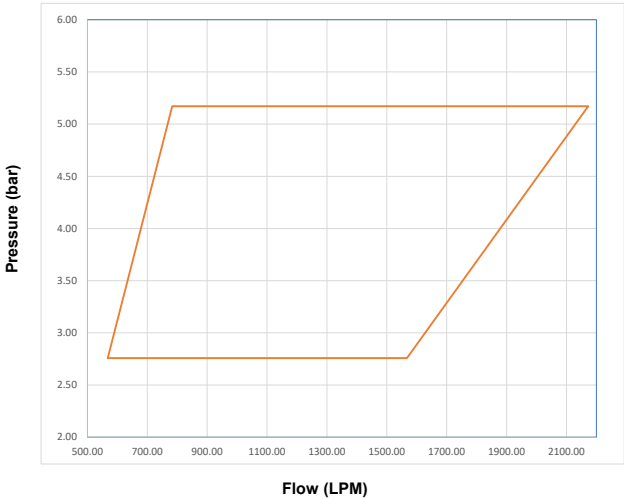
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

Graph 10.1A - VFM - FM - Jet A1 - 4" Foam Maker (USP 3%)



Graph 10.1B - VFM - FM - Jet A1 - 4" Foam Maker (USP 3%) metric





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DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFM Foam Maker

Table 11: UL Listing for Model VFM Foam Maker Hyrdocarbons (Heptane^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
USP 3%	2.5"	40	(2.76)	125	8.62	46	174	226	855	0.632 – 0.720	16.05 – 18.29	0.10	4.08	5.1

Footnotes:

1.

This table shows listings available at the time of publication.

2.

Density indicated is minimum application density required per UL162 Standard for Foam Extinguishing Systems. This density cannot be reduced.

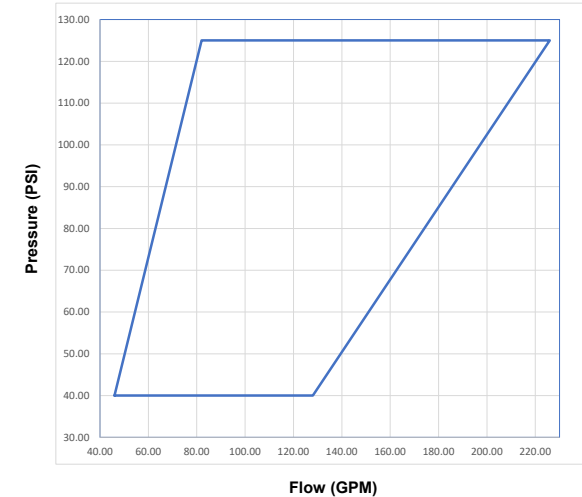
3.

Working pressure on the upstream side of the inlet orifice of the foam chamber.

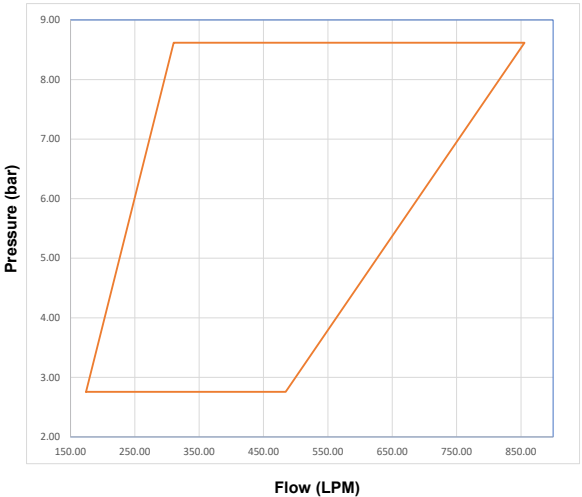
4.

Refer to the graphs below for design range.

Graph 11.1A - VFM - FM - Hydrocarbons (Heptane) - 2.5" Foam Maker (USP 3%)



Graph 11.1B - VFM - FM - Hydrocarbons (Heptane) - 2.5" Foam Maker (USP 3%) metric



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DISCHARGE DEVICES FOR
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Model VFM Foam Maker

Table 12: Tested per UL162 for Model VFM Foam Maker (Ethanol^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
USP 3%	2.5"	75	5.17	125	8.62	63	238.5	226	855	0.632 – 1.050	16.05 – 26.67	0.167	6.8	12.1
	2.5"	40	2.76	125	8.62	60	227.1	226	855	0.720 – 1.050	18.29 – 26.67	0.167	6.8	12.2

Footnotes:

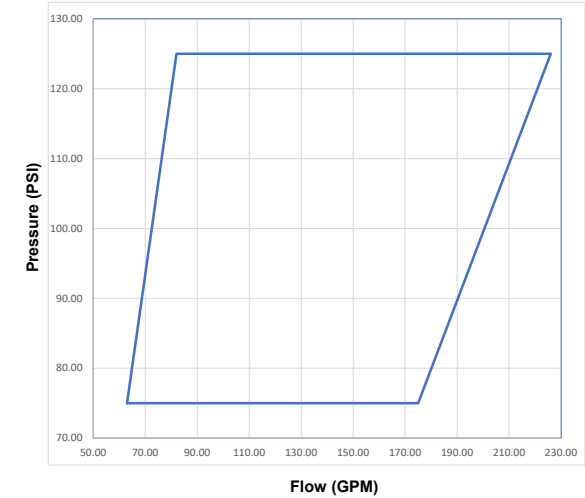
1. This table shows listings available at the time of publication. Fire testing performed in accordance to the procedure in UL 162.

2. Density indicated is minimum application density required per UL162 Standard for Foam Extinguishing Systems. This density cannot be reduced.

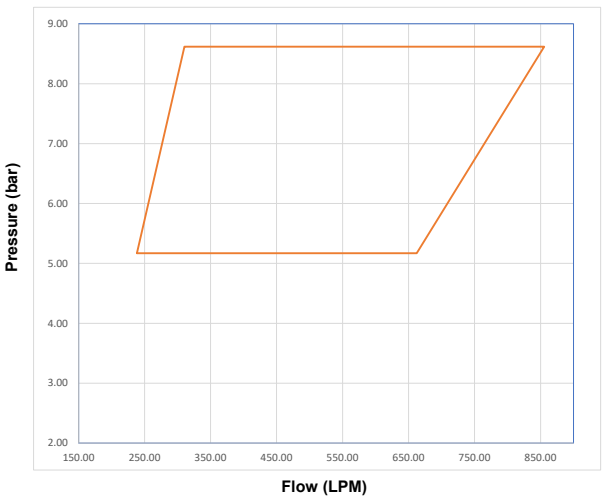
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.

4. Refer to the graphs below for design range.

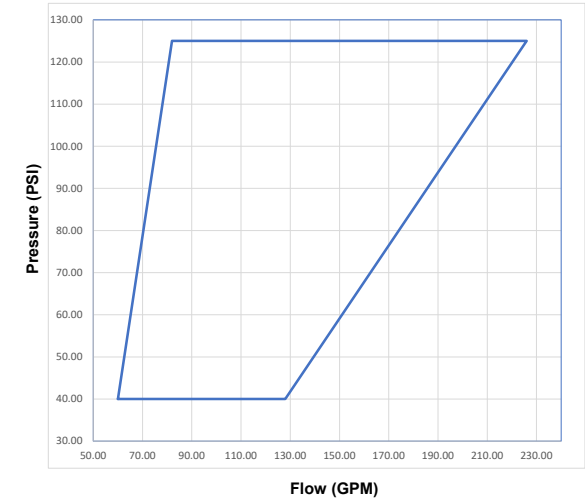
Graph 12.1A - VFM - UL - Ethanol - 2.5" Foam Maker (USP 3%)



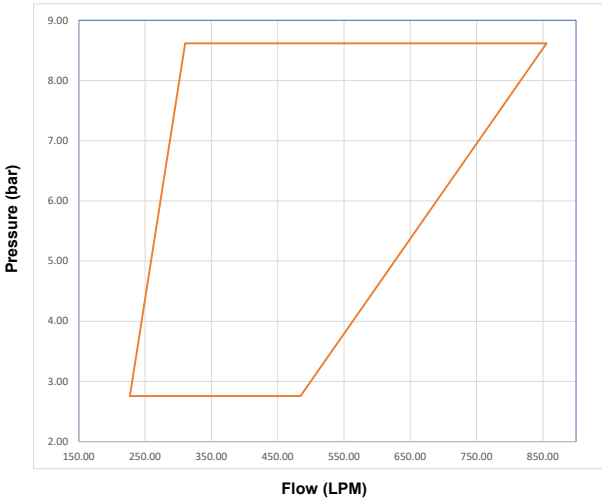
Graph 12.1B - VFM - UL - Ethanol - 2.5" Foam Maker (USP 3%)



Graph 12.2A - VFM - UL - Ethanol (2) - 2.5" Foam Maker (USP 3%)



Graph 12.2B - VFM - UL - Ethanol (2) - 2.5" Foam Maker (USP 3%) metric



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DISCHARGE DEVICES FOR
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CONCENTRATES

Model VFM Foam Maker

Table 13: Tested per UL 162 for Model VFM Foam Maker (Methanol^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
USP 3%	2.5"	75	5.17	125	8.62	63	238.5	226	855	0.632 – 1.050	16.05 – 26.67	0.167	6.8	12.1
	2.5"	40	2.76	125	8.62	60	227.1	226	855	0.720 – 1.050	18.29 – 26.67	0.167	6.8	12.2

Footnotes:

1.

his table shows listings available at the time of publication. Fire testing performed in accordance to the procedure in UL 162.

2.

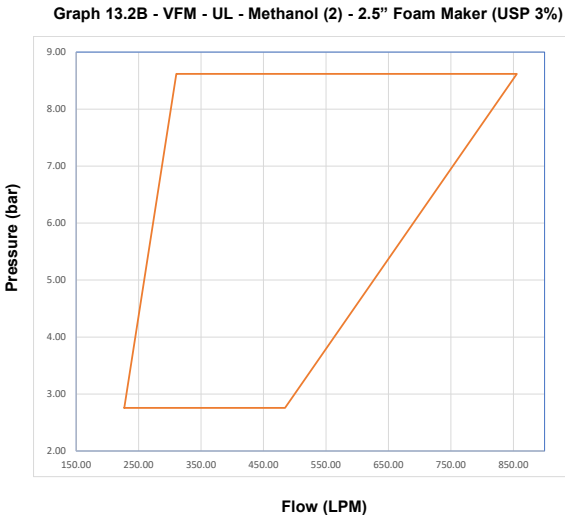
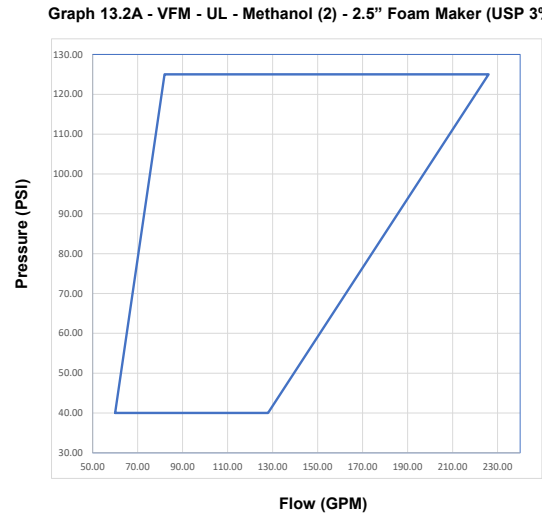
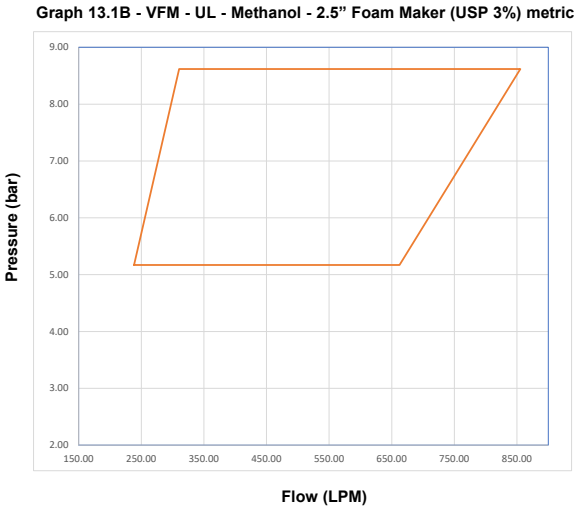
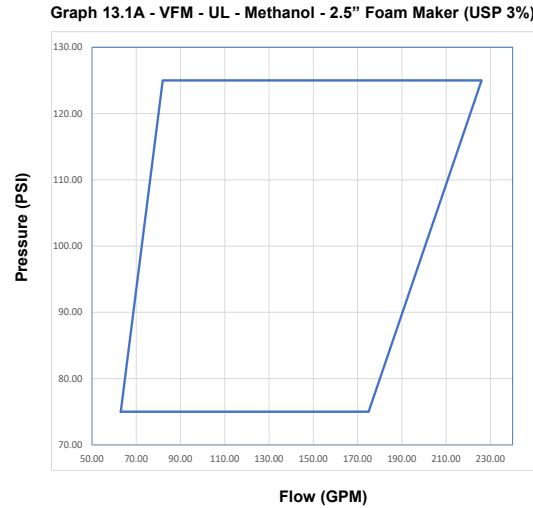
Density indicated is minimum application density required per UL162 Standard for Foam Extinguishing Systems. This density cannot be reduced.

3.

Working pressure on the upstream side of the inlet orifice of the foam chamber.

4.

Refer to the graphs below for design range.





TECHNICAL BULLETIN

DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFC Foam Chamber

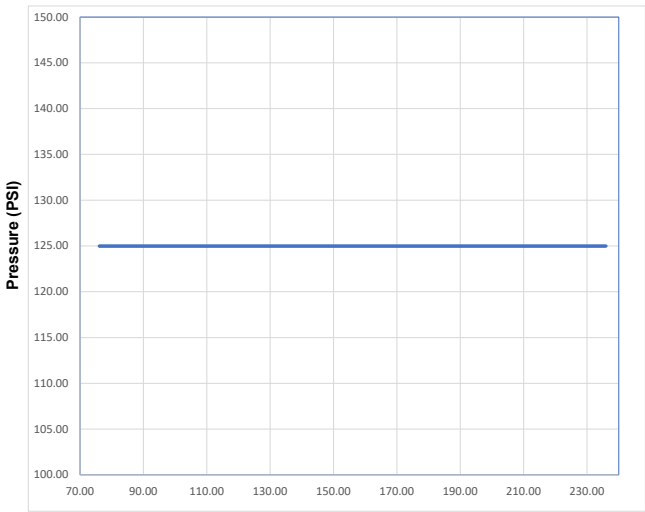
Table 14: FM Approvals for Model VFC Foam Chamber (Methanol^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
USP 3%	2.5	125	8.62	125	8.62	76	287.7	236	893.3	0.600 - 1.050	15.24 - 26.67	0.167	6.8	14.1
	2.5	40	2.76	125	8.62	132	499.6	236	893.3	1.050	26.67	0.167	6.8	14.2
	3	75	5.17	75	5.17	74	280.1	425	1608.6	0.906 - 1.531	23.01 - 38.89	0.167	6.8	14.3
	3	40	2.76	125	8.62	172	651.0	495	1873.6	1.219 - 1.531	30.96 - 38.89	0.167	6.8	14.4
	4	125	8.62	125	8.62	315	1192.3	757	2865.3	1.142 - 1.900	29.01 - 48.26	0.167	6.8	14.5
	4	40	2.76	125	8.62	422	1597.3	757	2865.3	1.900	48.26	0.167	6.8	14.6

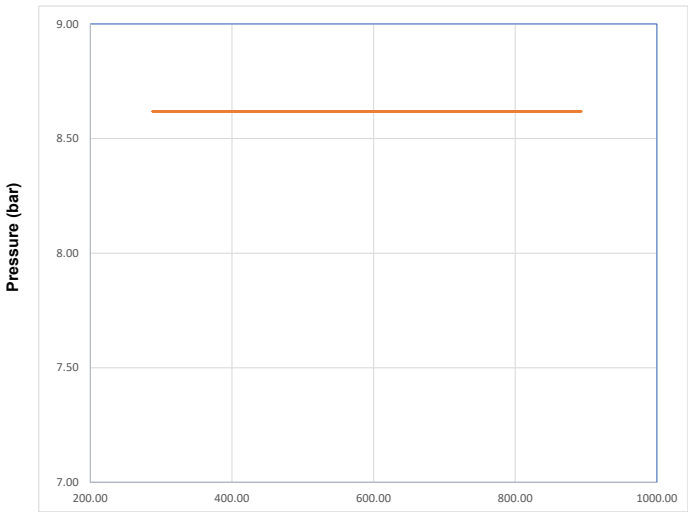
Footnotes:

1. This table shows listings available at the time of publication. Fire testing performed in accordance to the procedure in UL 162.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

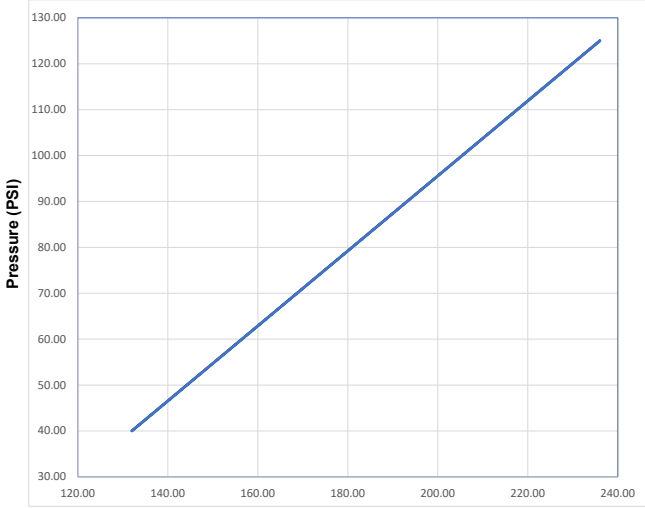
Graph 14.1A - VFC - FM - Methanol - 2.5" Foam Chamber (USP 3%)



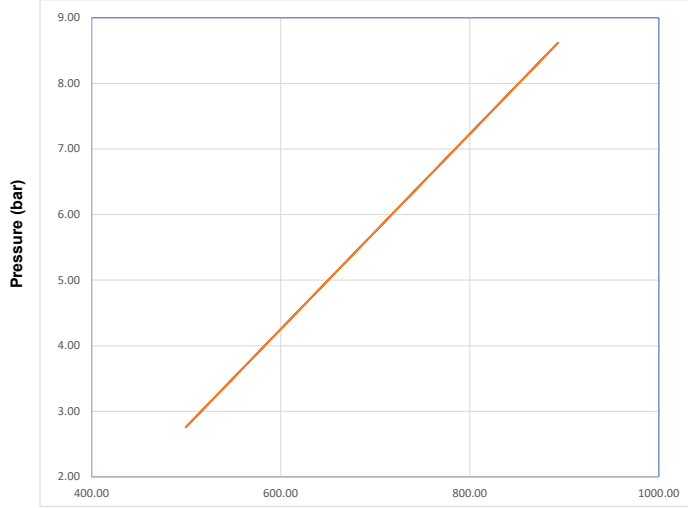
Graph 14.1B - VFC - FM - Methanol - 2.5" Foam Chamber (USP 3%) metric



Graph 14.2A - VFC - FM - Methanol (2) - 2.5" Foam Chamber (USP 3%)



Graph 14.2B - VFC - FM - Methanol (2) - 2.5" Foam Chamber (USP 3%) metric



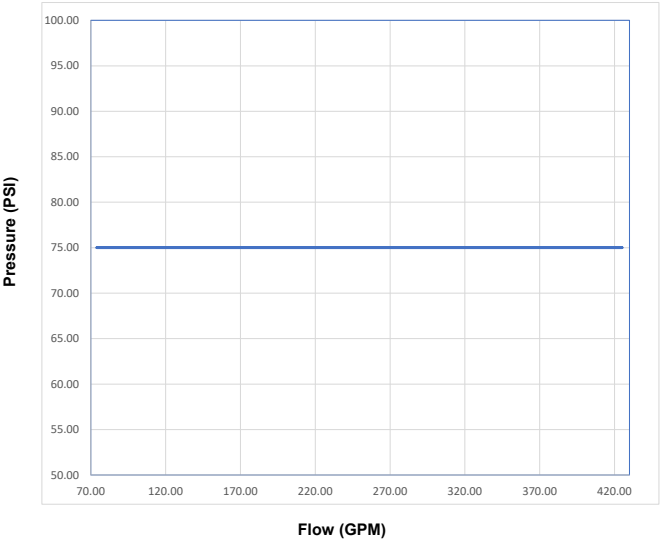


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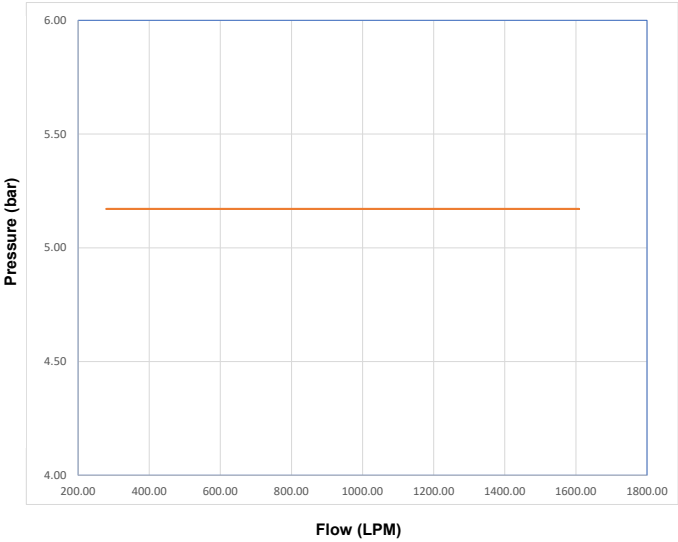
DISCHARGE DEVICES FOR
USE WITH SFFF FOAM
CONCENTRATES

Model VFC Foam Chamber

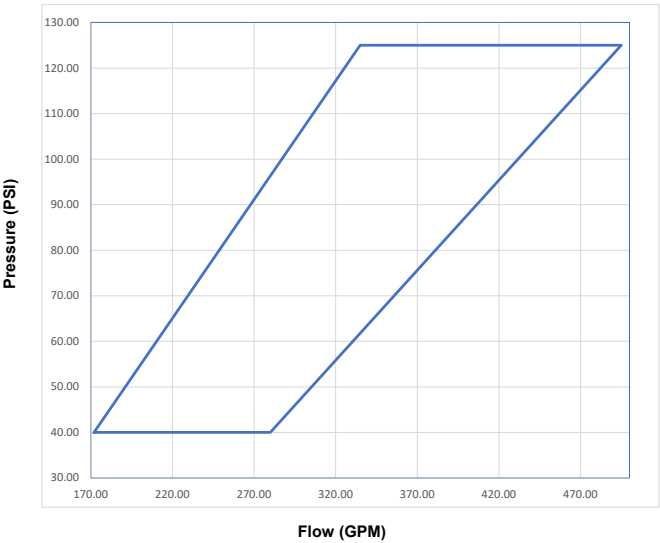
Graph 14.3A - VFC - FM - Methanol - 3" Foam Chamber (USP 3%)



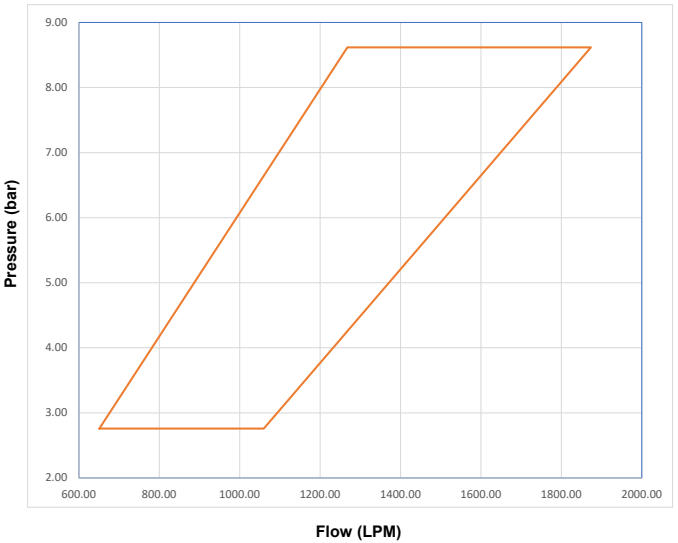
Graph 14.3B - VFC - FM - Methanol - 3" Foam Chamber (USP 3%) metric



Graph 14.4A - VFC - FM - Methanol (2) - 3" Foam Chamber (USP 3%)



Graph 14.4B - VFC - FM - Methanol (2) - 3" Foam Chamber (USP 3%) metric



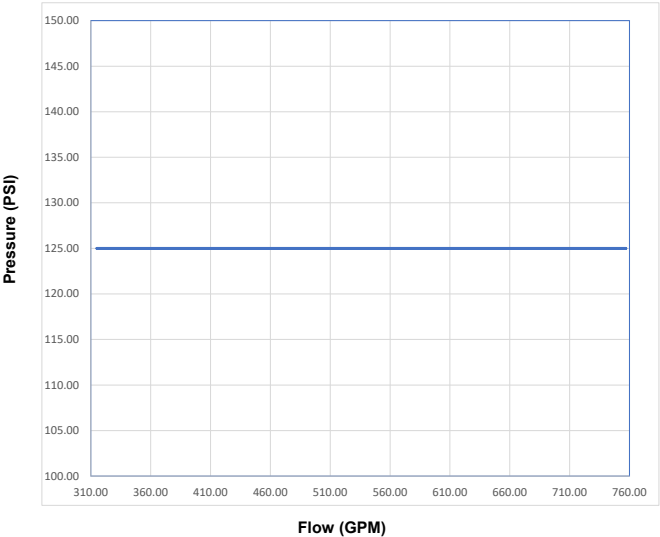


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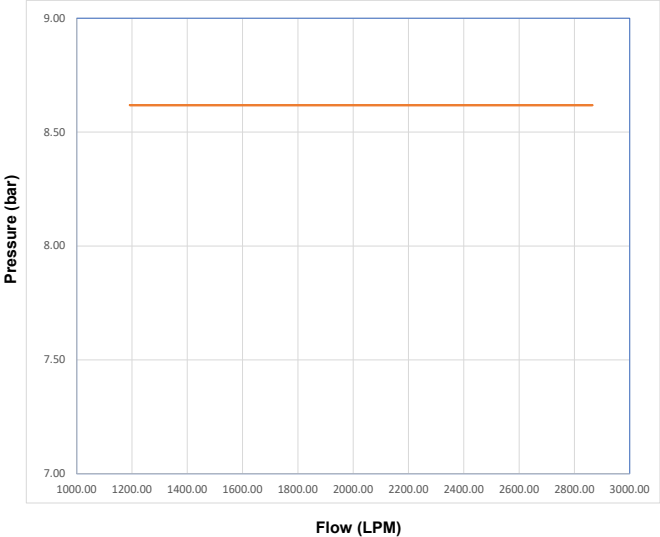
DISCHARGE DEVICES FOR
USE WITH SFFF FOAM
CONCENTRATES

Model VFC Foam Chamber

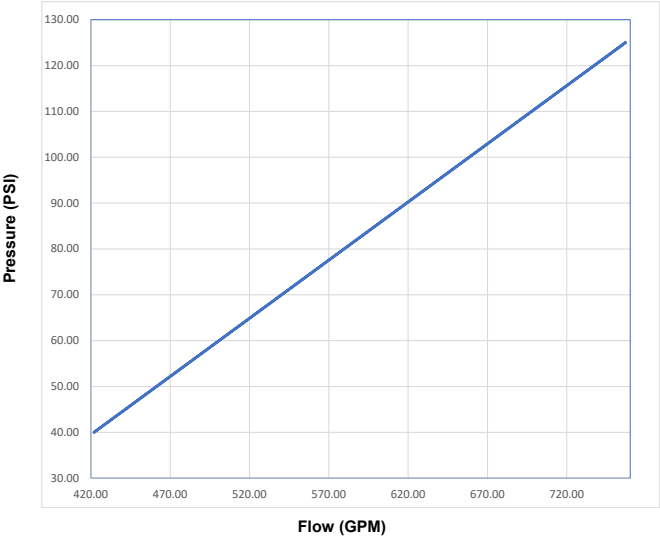
Graph 14.5A - VFC - FM - Methanol - 4" Foam Chamber (USP 3%)



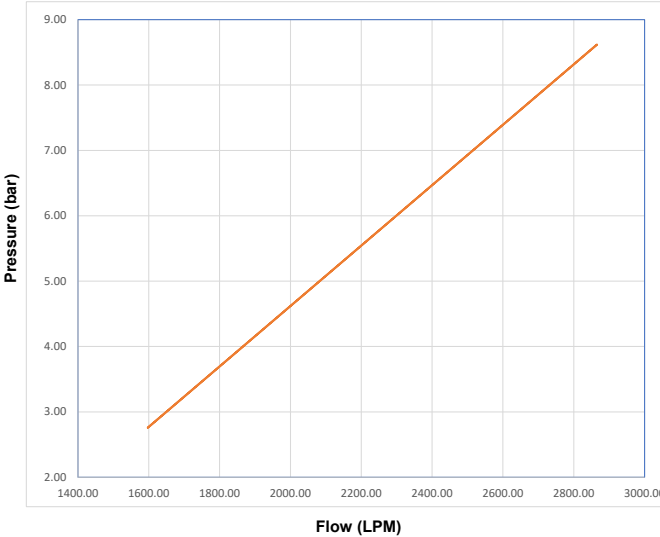
Graph 14.5B - VFC - FM - Methanol - 4" Foam Chamber (USP 3%) metric



Graph 14.6A - VFC - FM - Methanol (2) - 4" Foam Chamber (USP 3%)



Graph 14.6B - VFC - FM - Methanol (2) - 4" Foam Chamber (USP 3%) metric





TECHNICAL BULLETIN

DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFC Foam Chamber

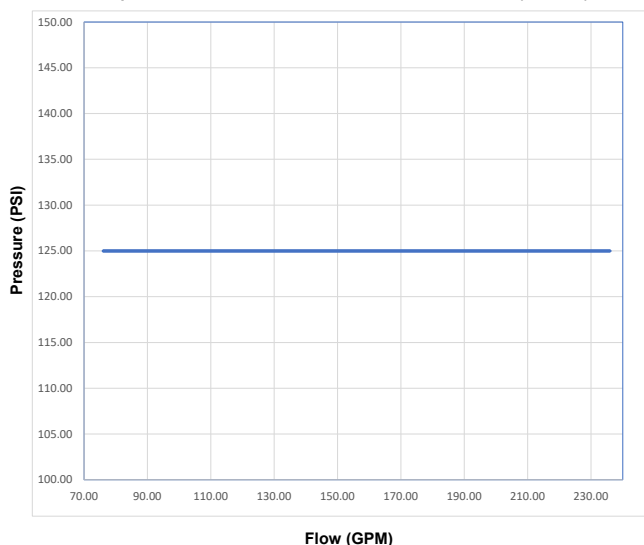
Table 15: FM Approvals for Model VFC Foam Chamber (Ethanol^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
USP 3%	2.5	125	8.62	125	8.62	76	287.7	236	893.3	0.600 - 1.050	15.24 - 26.67	0.167	6.8	15.1
	2.5	40	2.76	125	8.62	132	499.6	236	893.3	1.050	26.67	0.167	6.8	15.2
	3	75	5.17	75	5.17	74	280.1	425	1608.6	0.906 - 1.531	23.01 - 38.89	0.167	6.8	15.3
	3	40	2.76	125	8.62	172	651.0	495	1873.6	1.219 - 1.531	30.96 - 38.89	0.167	6.8	15.4
	4	125	8.62	125	8.62	315	1192.3	757	2865.3	1.142 - 1.900	29.01 - 48.26	0.167	6.8	15.5
	4	40	2.76	125	8.62	422	1597.3	757	2865.3	1.900	48.26	0.167	6.8	15.6
ARK 3%	2.5	40	2.76	125	8.62	43	162.8	226	855.4	0.600 - 1.050	15.24 - 26.67	0.167	6.8	15.7
	3	40	2.76	125	8.62	96	363.4	480	1816.8	0.906 - 1.531	23.01 - 38.89	0.167	6.8	15.8
	4	40	2.76	40	2.76	154	582.9	418	1582.1	1.142 - 1.900	29.01 - 48.26	0.167	6.8	15.9

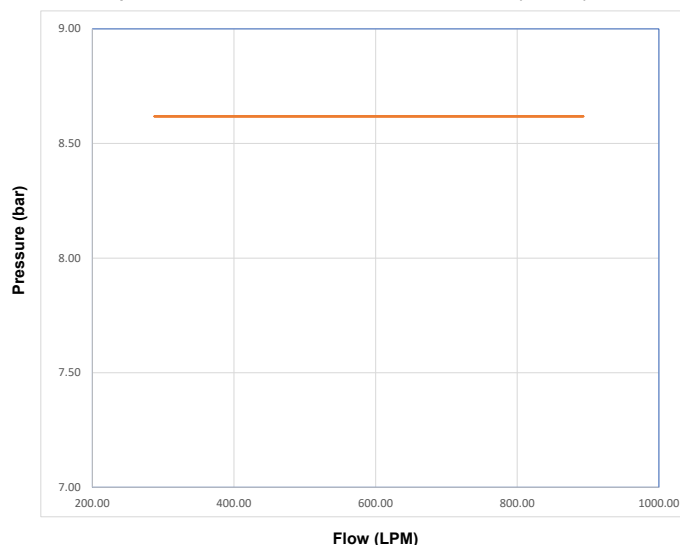
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

Graph 15.1A - VFC - FM - Ethanol - 2.5" Foam Chamber (USP 3%)



Graph 15.1A - VFC - FM - Ethanol - 2.5" Foam Chamber (USP 3%) metric



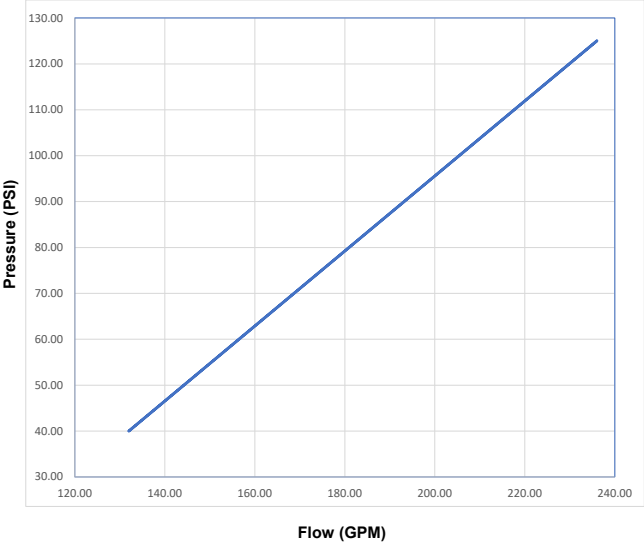


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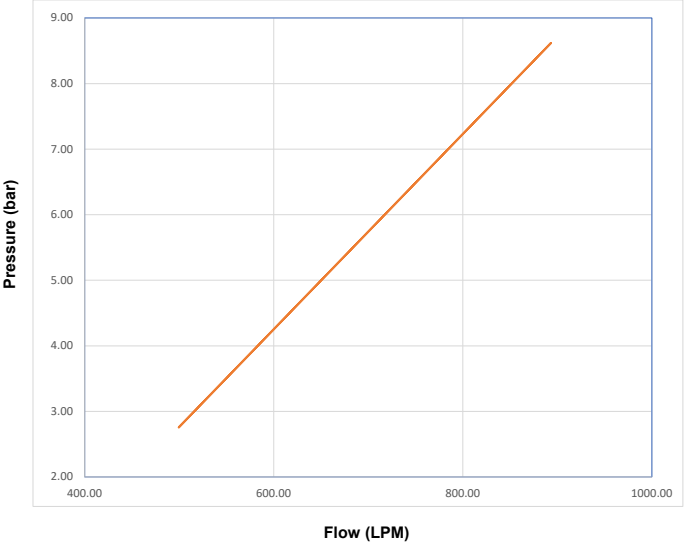
DISCHARGE DEVICES FOR
USE WITH SFFF FOAM
CONCENTRATES

Model VFC Foam Chamber

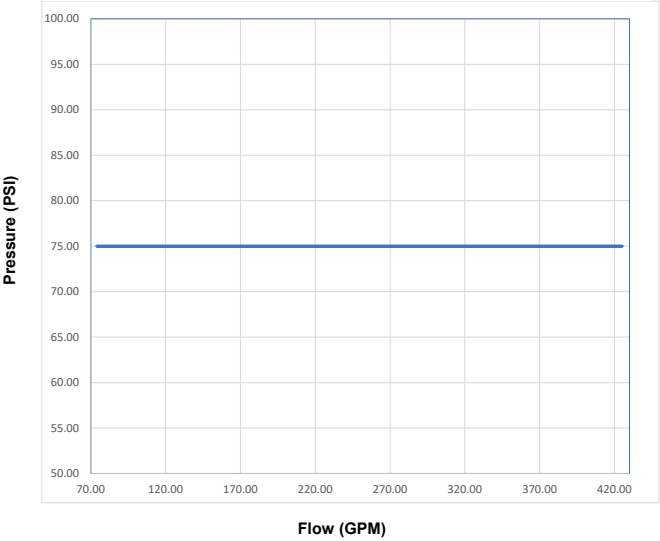
Graph 15.2A - VFC - FM - Ethanol (2) - 2.5" Foam Chamber (USP 3%)



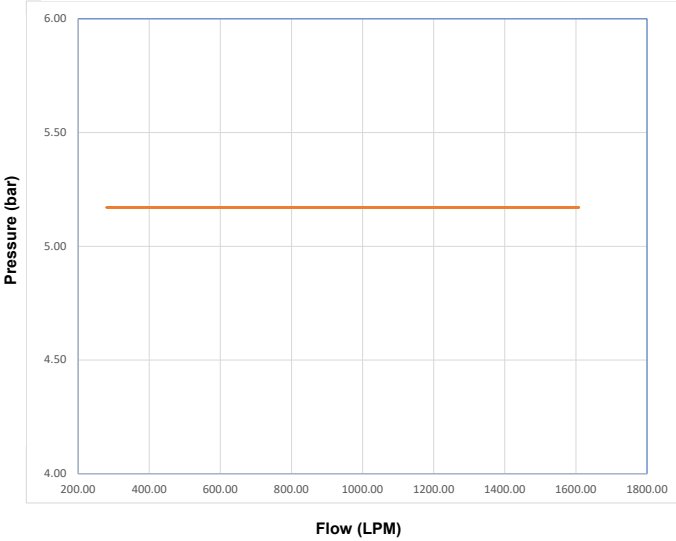
Graph 15.1B - VFC - FM - Ethanol (2) - 2.5" Foam Chamber (USP 3%) metric



Graph 15.3A - VFC - FM - Ethanol (3) - 3" Foam Chamber (USP 3%)



Graph 15.3B - VFC - FM - Ethanol (3) - 3" Foam Chamber (USP 3%) metric



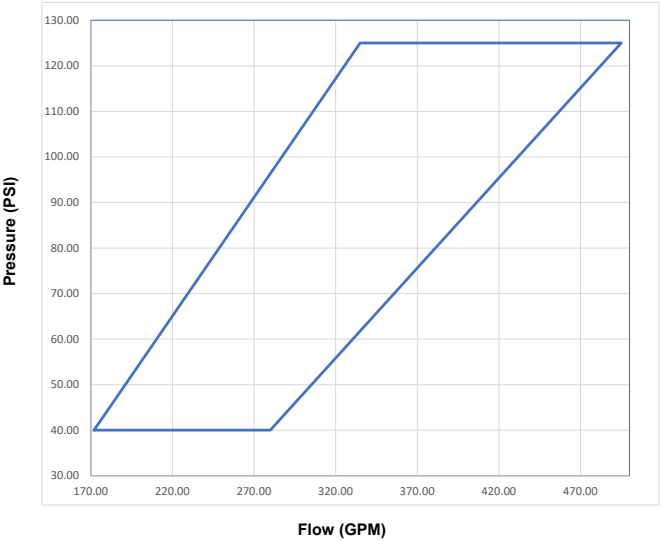


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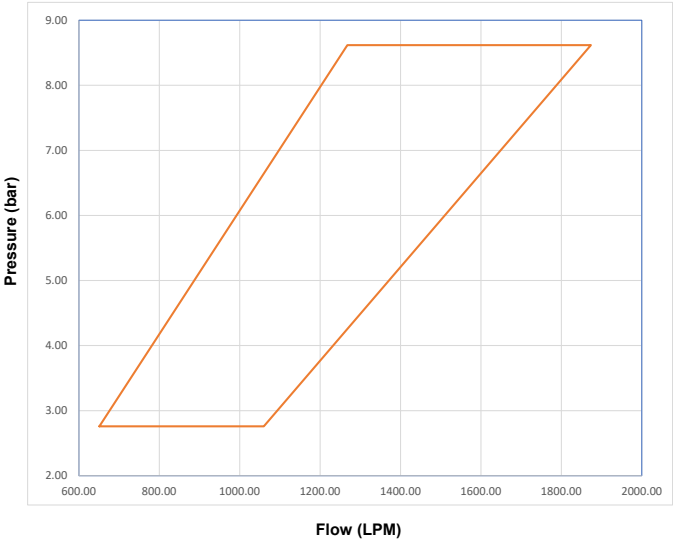
DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFC Foam Chamber

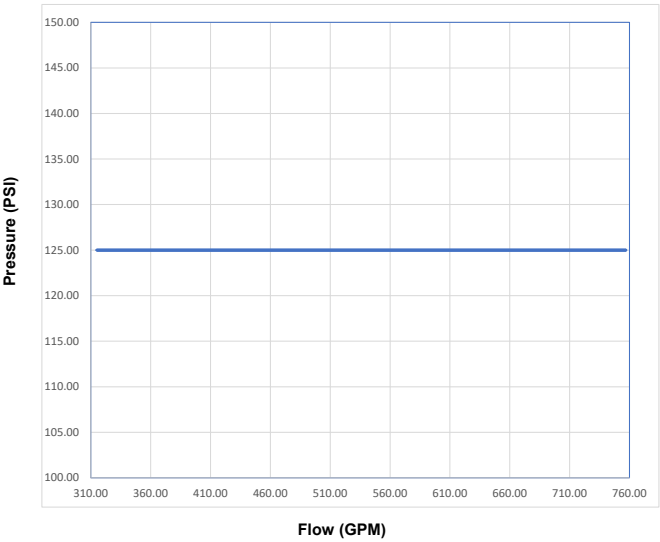
Graph 15.4A - VFC - FM - Ethanol (2) - 3" Foam Chamber (USP 3%)



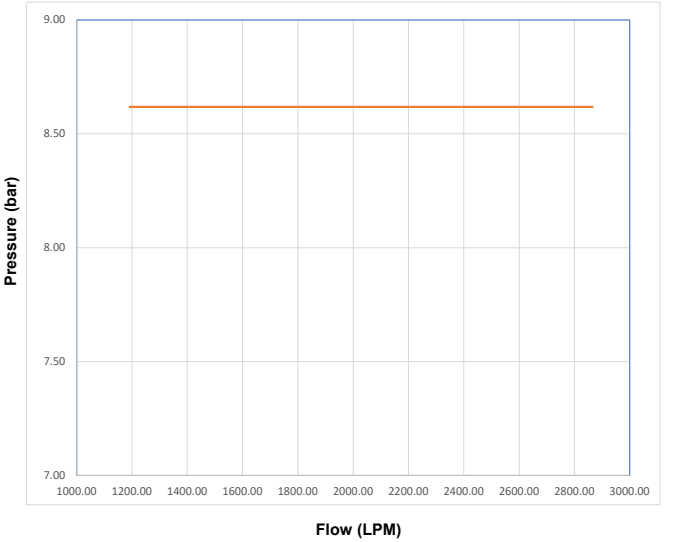
Graph 15.4B - VFC - FM - Ethanol (2) - 3" Foam Chamber (USP 3%) metric



Graph 15.5A - VFC - FM - Ethanol - 4" Foam Chamber (USP 3%)



Graph 15.5B - VFC - FM - Ethanol - 4" Foam Chamber (USP 3%) metric



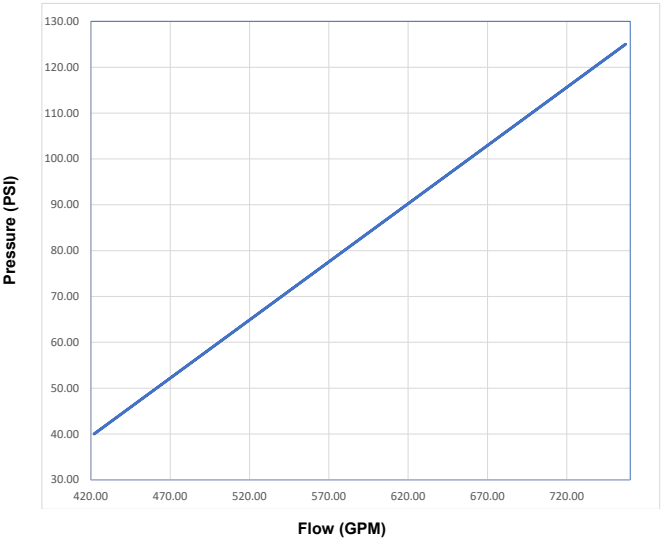


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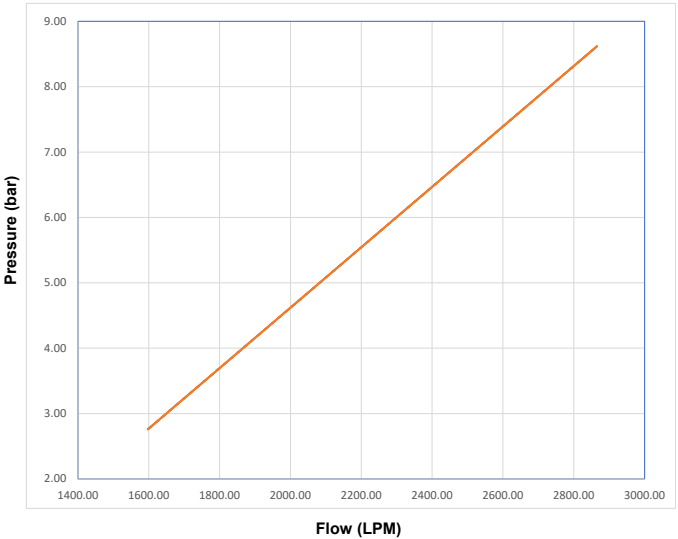
DISCHARGE DEVICES FOR
USE WITH SFFF FOAM
CONCENTRATES

Model VFC Foam Chamber

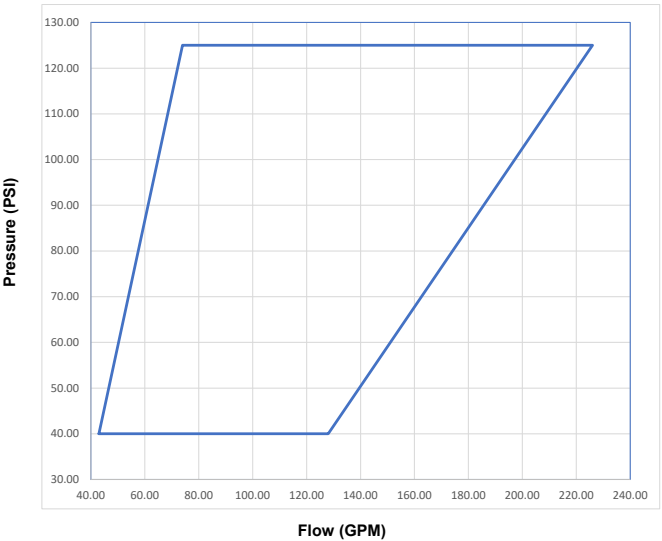
Graph 15.6A - VFC - FM - Ethanol (2) - 4" Foam Chamber (USP 3%)



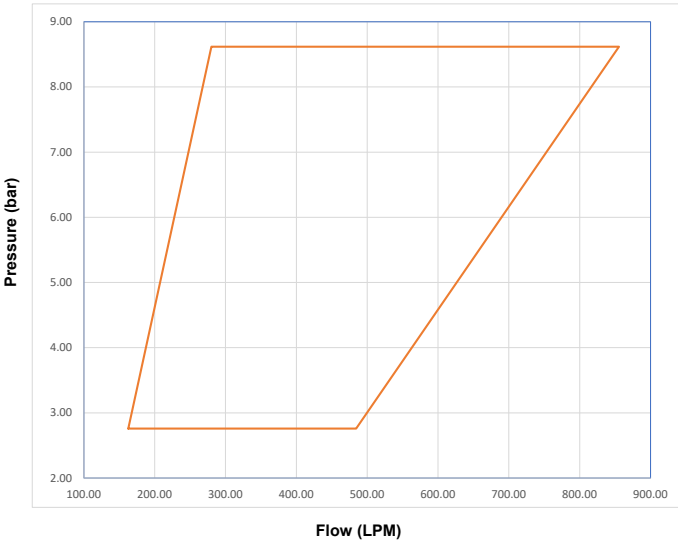
Graph 15.6B - VFC - FM - Ethanol (2) - 4" Foam Chamber (USP 3%) metric



Graph 15.7A - VFC - FM - Ethanol - 2.5" Foam Chamber (ARK 3%)



Graph 15.7B - VFC - FM - Ethanol - 2.5" Foam Chamber (ARK 3%) metric



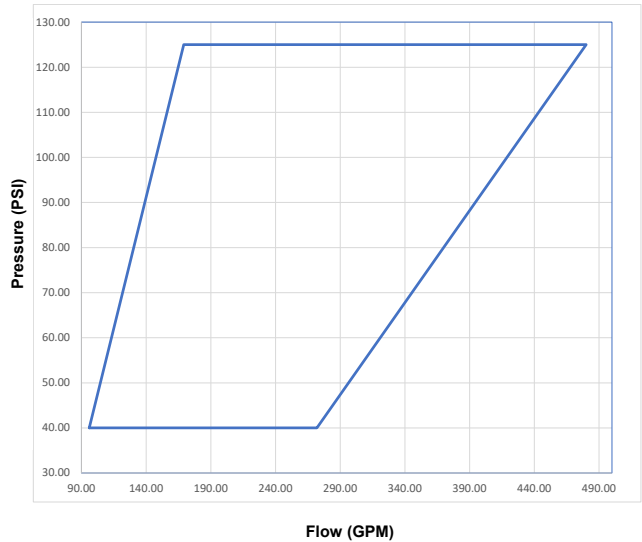


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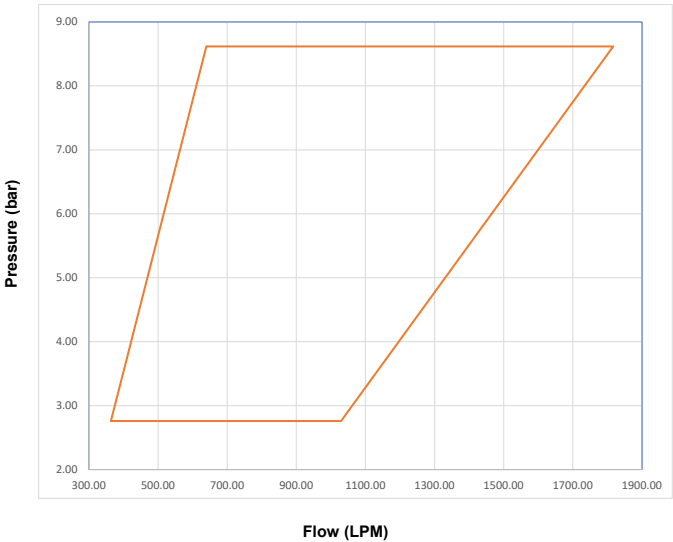
DISCHARGE DEVICES FOR
USE WITH SFFF FOAM
CONCENTRATES

Model VFC Foam Chamber

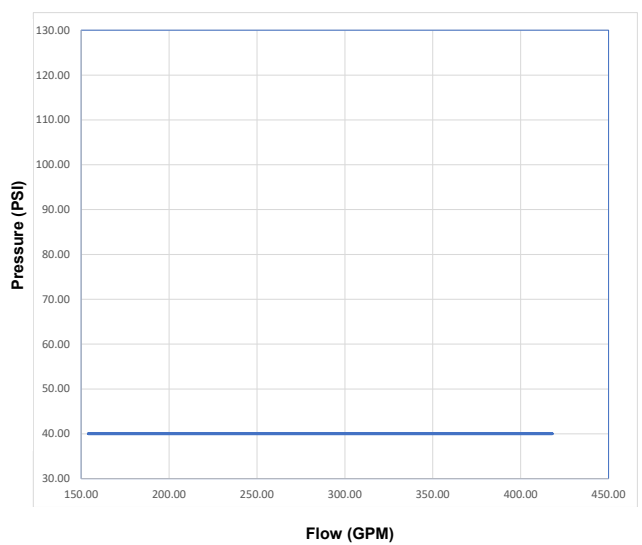
Graph 15.8A - VFC - FM - Ethanol - 3" Foam Chamber (ARK 3%)



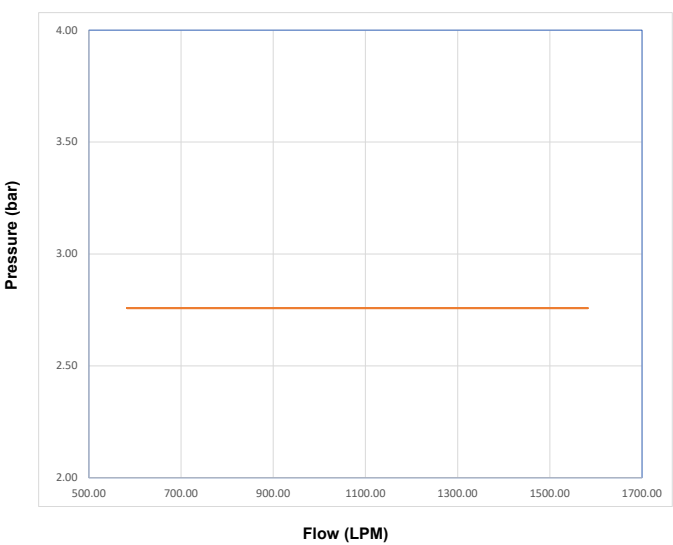
Graph 15.8B - VFC - FM - Ethanol - 2.5" Foam Chamber (ARK 3%) metric



Graph 15.9A - VFC - FM - Ethanol - 4" Foam Chamber (ARK 3%)



Graph 15.9B - VFC - FM - Ethanol - 4" Foam Chamber (ARK 3%) metric





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DISCHARGE DEVICES FOR
USE WITH SFFF FOAM
CONCENTRATES

Model VFC Foam Chamber

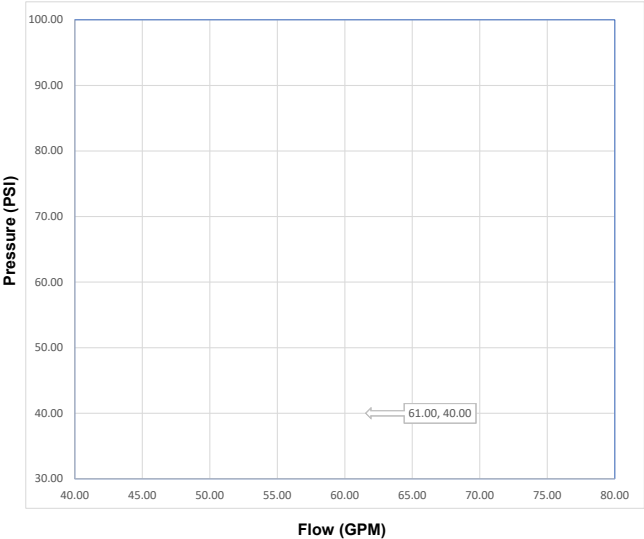
Table 16: FM Approvals for Model VFC Foam Chamber (Hexane^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
USP 3%	2.5	40	2.76	40	2.76	61	230.9	61	230.9	0.748	19.00	0.167	6.8	16.1
	3	40	2.76	40	2.76	96	363.4	96	363.4	0.906	23.01	0.167	6.8	16.2
	4	40	2.76	40	2.76	168	635.9	168	635.9	1.142	29.01	0.167	6.8	16.3

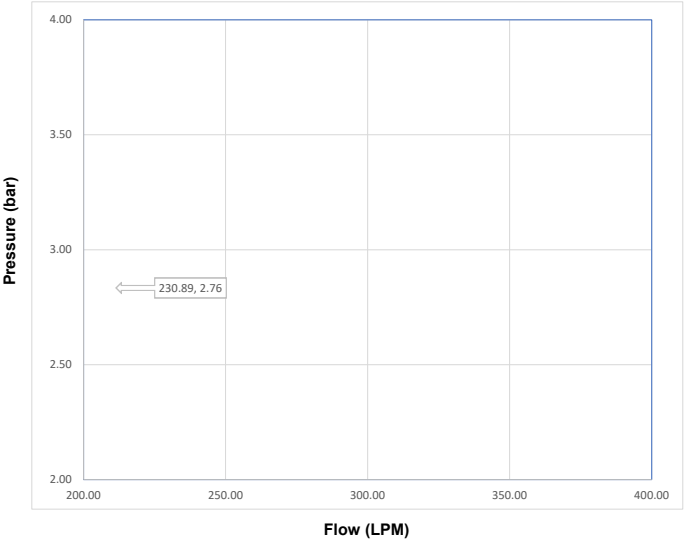
Footnotes:

- 1. This table shows listings available at the time of publication.
- 2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
- 3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
- 4. Refer to the graphs below for design range.

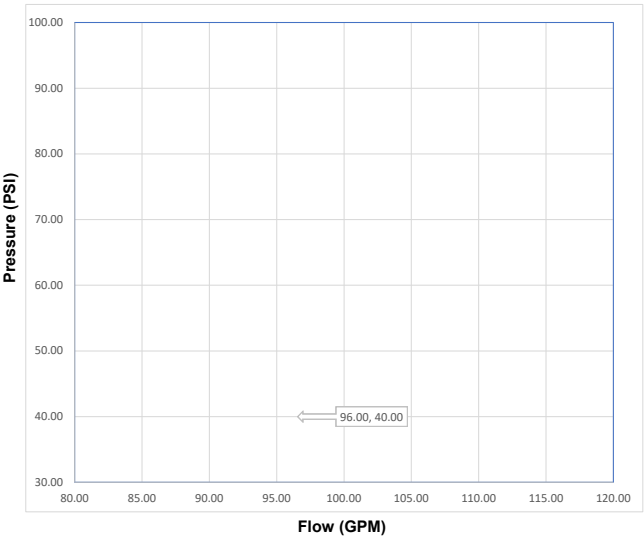
Graph 16.1A - VFC - FM - Hexane - 2.5" Foam Chamber (USP 3%)



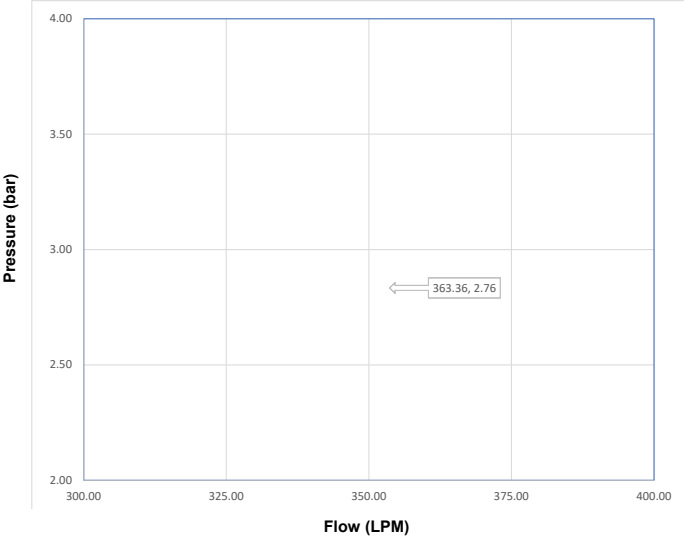
Graph 16.1B - VFC - FM - Hexane - 2.5" Foam Chamber (USP 3%) metric



Graph 16.2A - VFC - FM - Hexane - 3" Foam Chamber (USP 3%)



Graph 16.2B - VFC - FM - Hexane - 3" Foam Chamber (USP 3%) metric



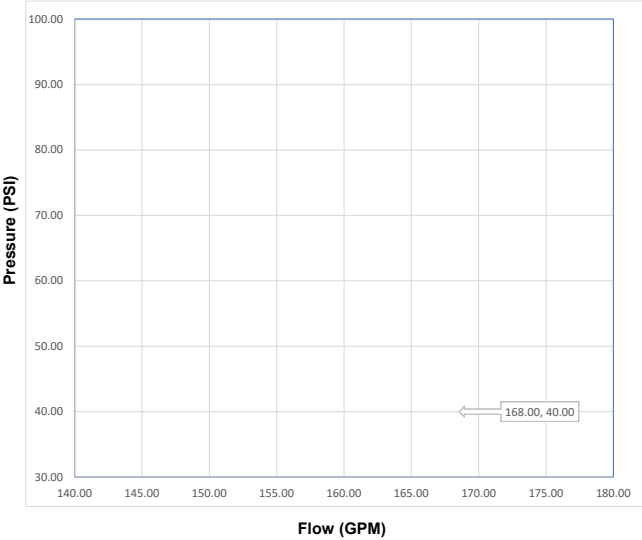


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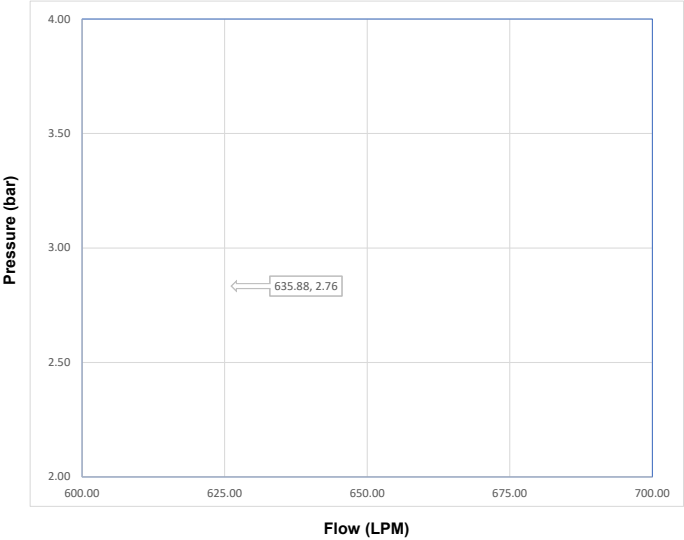
DISCHARGE DEVICES FOR
USE WITH SFFF FOAM
CONCENTRATES

Model VFC Foam Chamber

Graph 16.3A - VFC - FM - Hexane - 4" Foam Chamber (USP 3%)



Graph 16.3B - VFC - FM - Hexane - 4" Foam Chamber (USP 3%) metric





TECHNICAL BULLETIN

DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFC Foam Chamber

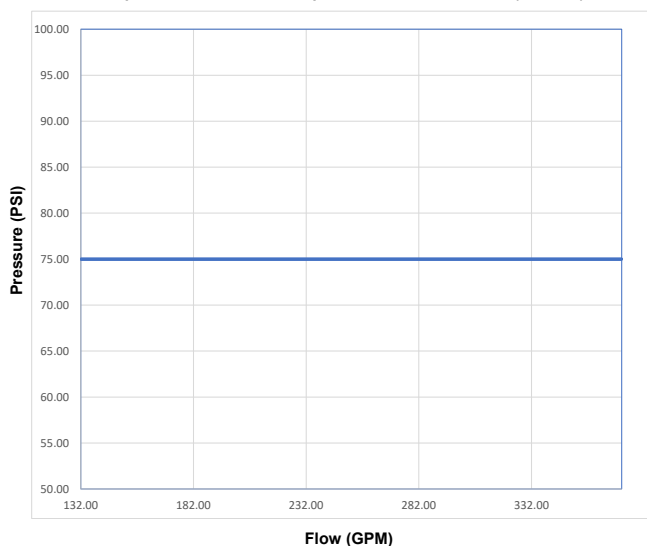
Table 17: FM Approvals for Model VFC Foam Chamber (Heptane^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
USP 3%	3	75	5.17	75	5.17	132	499.6	372	1408	0.906 - 1.531	23.01 - 38.89	0.10	4.08	17.1
ARK 3%	2.5	40	2.76	125	8.62	43	162.8	226	855.4	0.600 - 1.050	15.24 - 26.67	0.20	8.15	17.2
	3	40	2.76	125	8.62	96	363.4	480	1816.8	0.906 - 1.531	23.01 - 38.89	0.20	8.15	17.3
	4	40	2.76	125	8.62	154	582.9	740	2800.9	1.142 - 1.900	29.01 - 48.26	0.20	8.15	17.4

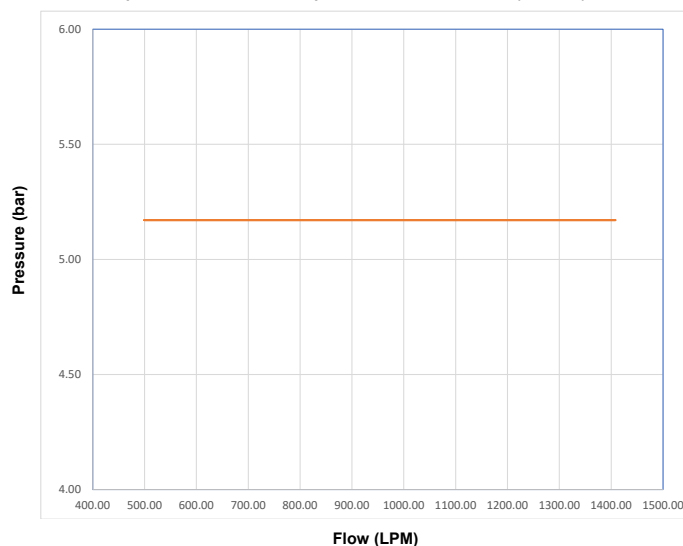
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

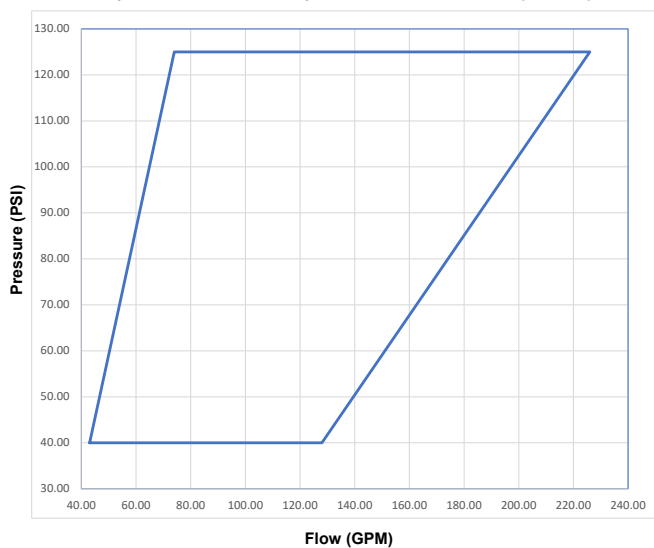
Graph 17.1A - VFC - FM - Heptane - 3" Foam Chamber (USP 3%)



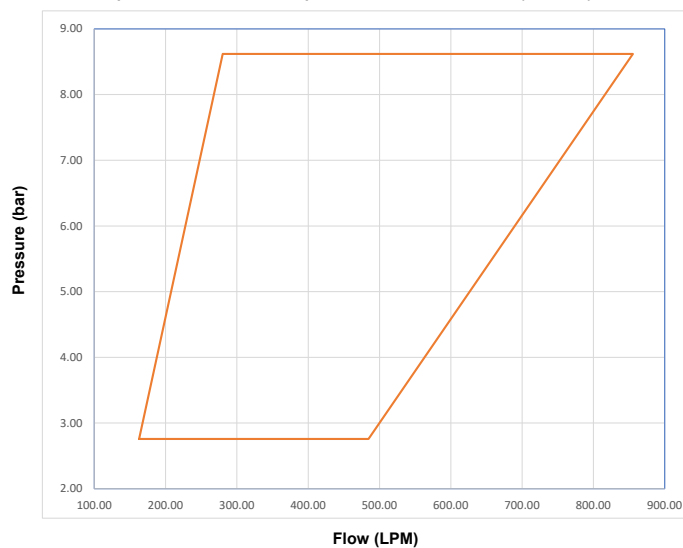
Graph 17.1B - VFC - FM - Heptane - 3" Foam Chamber (USP 3%) metric



Graph 17.2A - VFC - FM - Heptane - 2.5" Foam Chamber (ARK 3%)



Graph 17.2B - VFC - FM - Heptane - 2.5" Foam Chamber (ARK 3%) metric



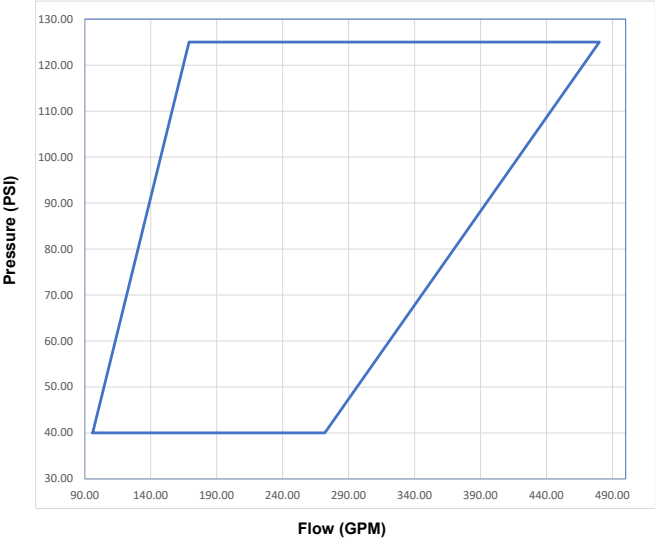


TECHNICAL BULLETIN

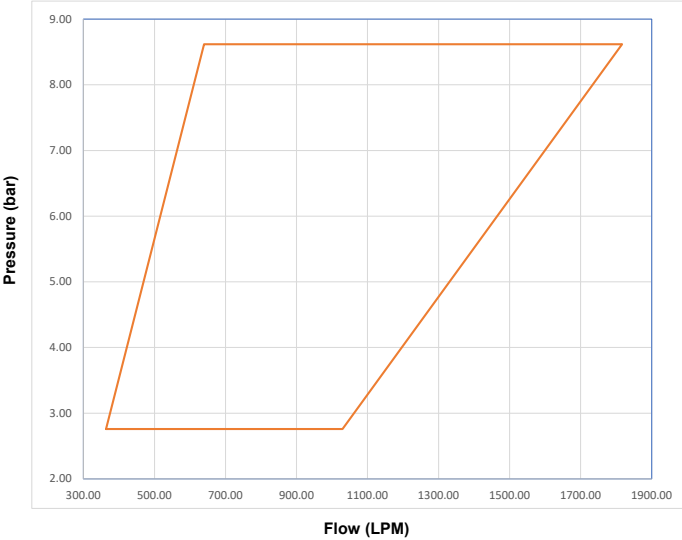
DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFC Foam Chamber

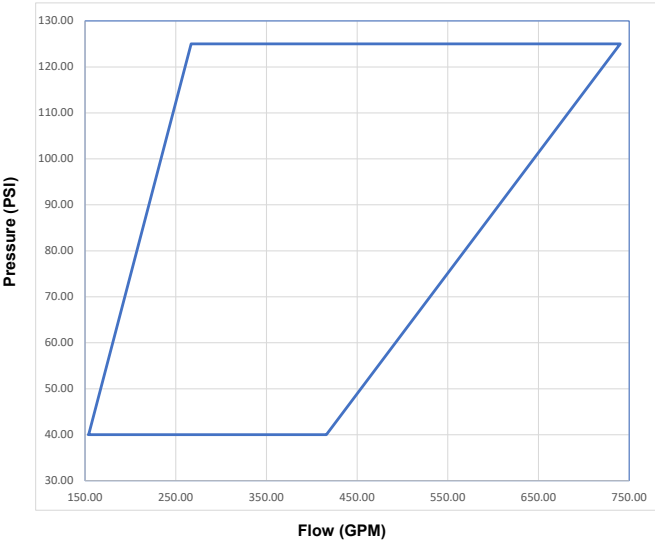
Graph 17.3A - VFC - FM - Heptane - 3" Foam Chamber (ARK 3%)



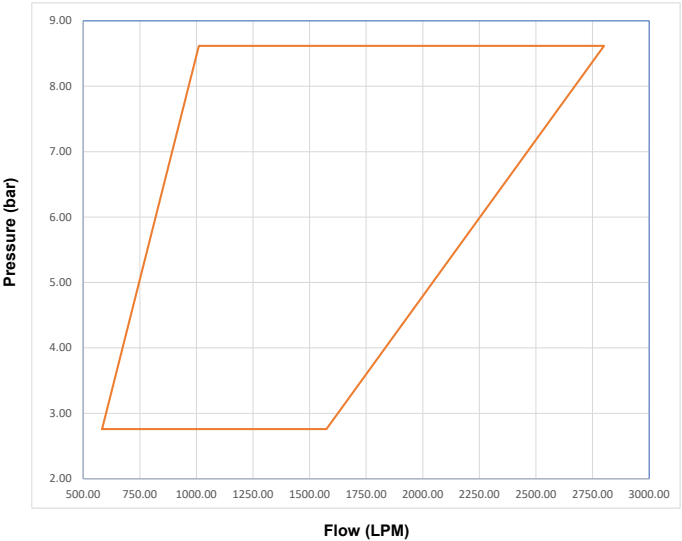
Graph 17.3B - VFC - FM - Heptane - 3" Foam Chamber (ARK 3%) metric



Graph 17.4A - VFC - FM - Heptane - 4" Foam Chamber (ARK 3%)



Graph 17.4B - VFC - FM - Heptane - 4" Foam Chamber (ARK 3%) metric





TECHNICAL BULLETIN

DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

Model VFC Foam Chamber

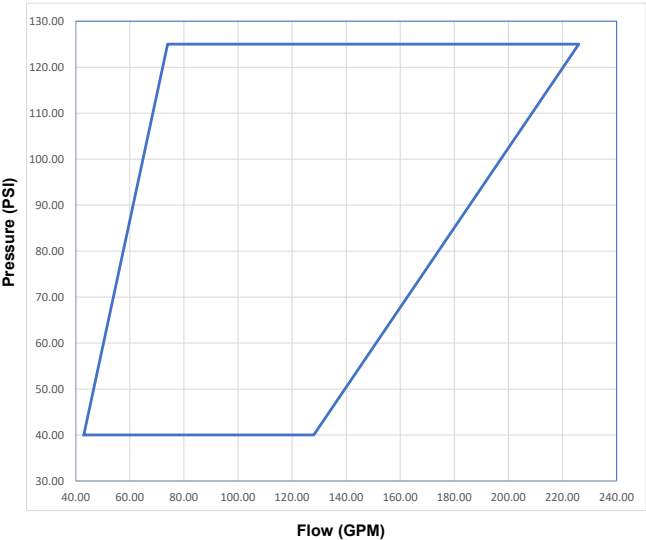
Table 18: FM Approvals for Model VFC Foam Chamber (IPA^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
ARK 3%	2.5	40	2.76	125	8.62	43	162.8	226	855.4	0.600 - 1.050	15.24 - 26.67	0.25	10.19	18.1
	3	40	2.76	125	8.62	96	363.4	480	1816.8	0.906 - 1.531	23.01 - 38.89	0.25	10.19	18.2
	4	40	2.76	125	8.62	154	582.9	740	2800.9	1.142 - 1.900	29.01 - 48.26	0.25	10.19	18.3

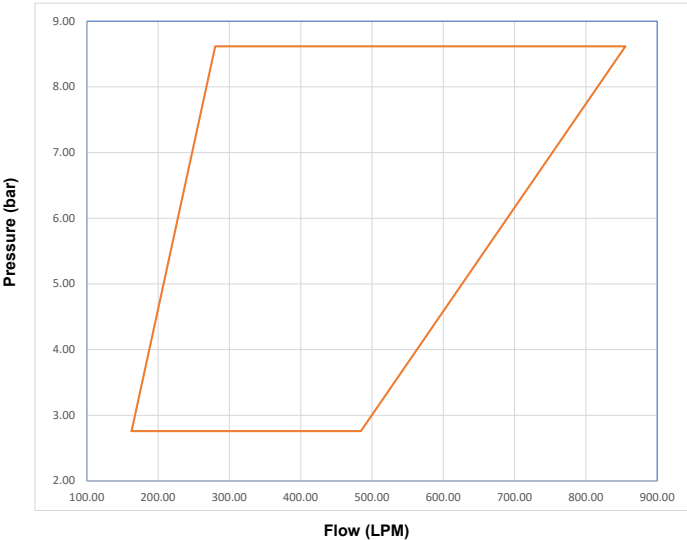
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

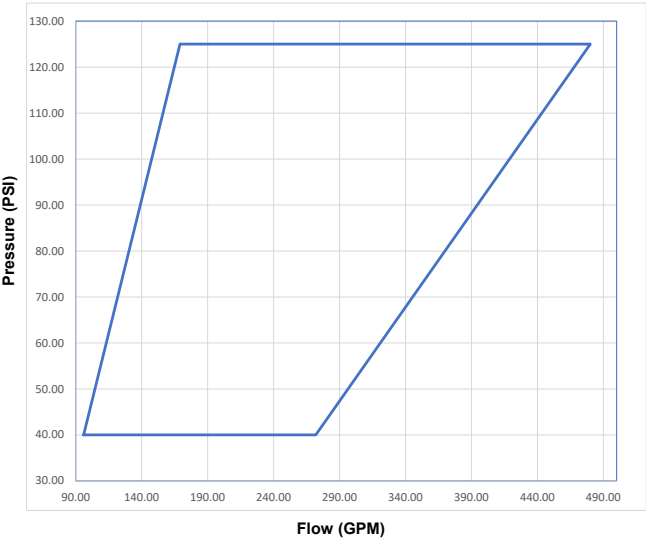
Graph 18.1A - VFC - FM - IPA - 2.5" Foam Chamber (ARK 3%)



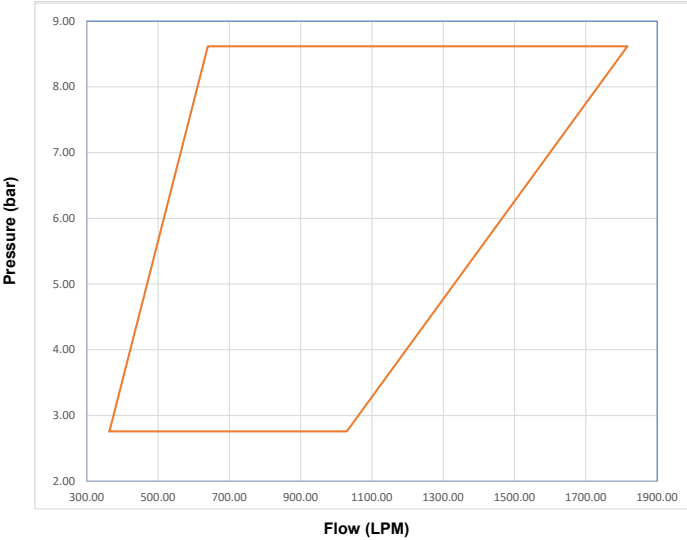
Graph 18.1B - VFC - FM - IPA - 2.5" Foam Chamber (ARK 3%) metric



Graph 18.2A - VFC - FM - IPA - 3" Foam Chamber (ARK 3%)



Graph 18.2B - VFC - FM - IPA - 3" Foam Chamber (ARK 3%) metric



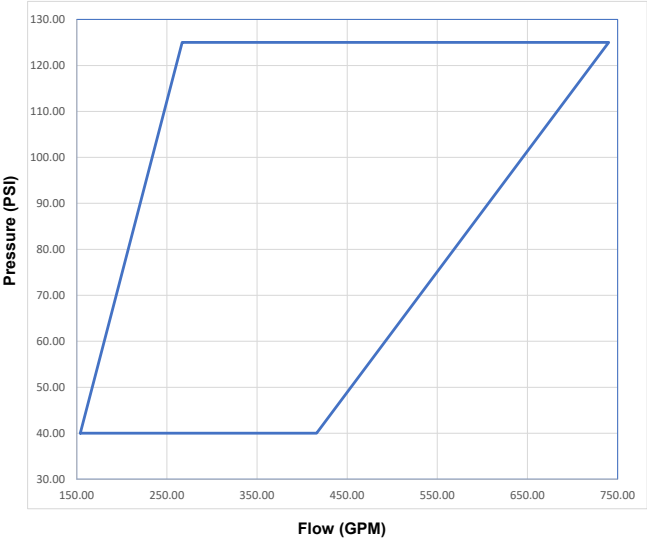


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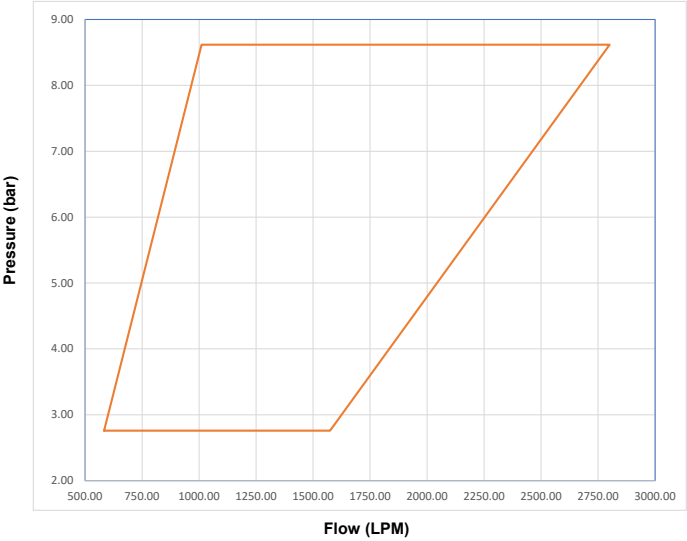
DISCHARGE DEVICES FOR
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Graph 18.3A - VFC - FM - IPA - 4" Foam Chamber (ARK 3%)



Graph 18.3B - VFC - FM - IPA - 4" Foam Chamber (ARK 3%) metric





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Model VFC Foam Chamber

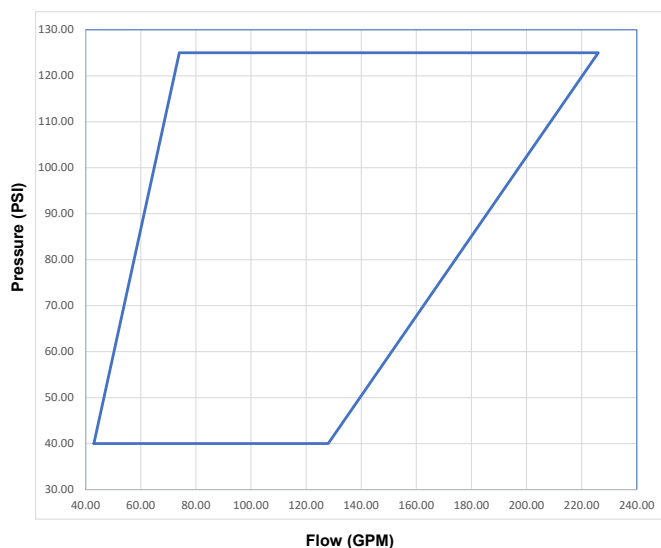
Table 19: FM Approvals for Model VFC Foam Chamber (Acetone^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
ARK 3%	2.5	40	2.76	125	8.62	43	162.8	226	855.4	0.600 - 1.050	15.24 - 26.67	0.20	8.15	19.1
	3	40	2.76	125	8.62	96	363.4	480	1816.8	0.906 - 1.531	23.01 - 38.89	0.20	8.15	19.2
	4	40	2.76	40	2.76	154	582.9	418	1582.1	1.142 - 1.900	29.01 - 48.26	0.20	8.15	19.3

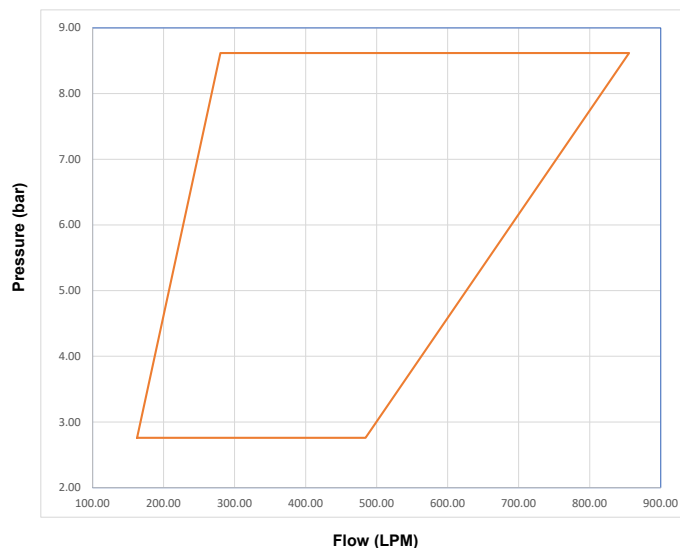
Footnotes:

1. This table shows listings available at the time of publication.
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
4. Refer to the graphs below for design range.

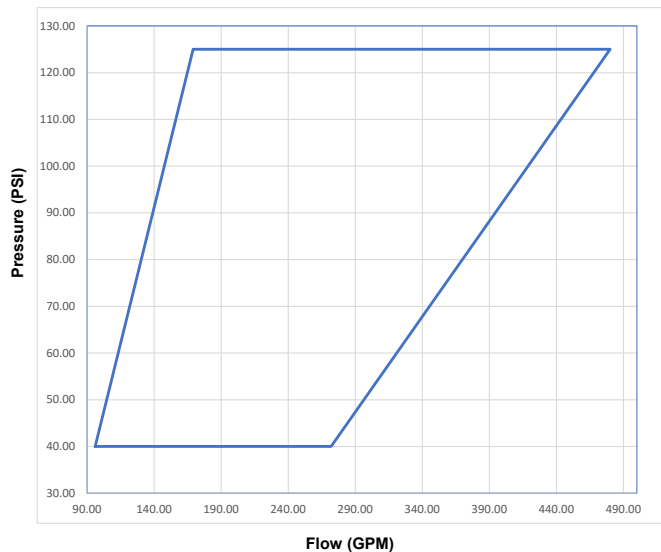
Graph 19.1A - VFC - FM - Acetone - 2.5" Foam Chamber (ARK 3%)



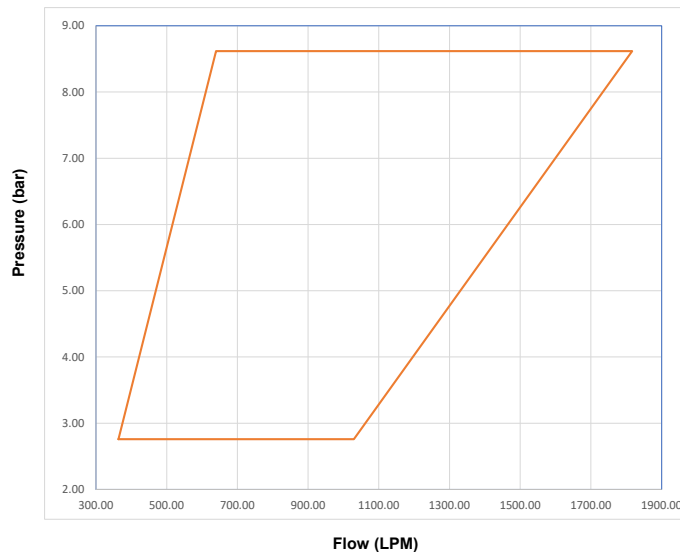
Graph 19.1B - VFC - FM - Acetone - 2.5" Foam Chamber (ARK 3%) metric



Graph 19.2A - VFC - FM - Acetone - 3" Foam Chamber (ARK 3%)



Graph 19.2B - VFC - FM - Acetone - 3" Foam Chamber (ARK 3%) metric



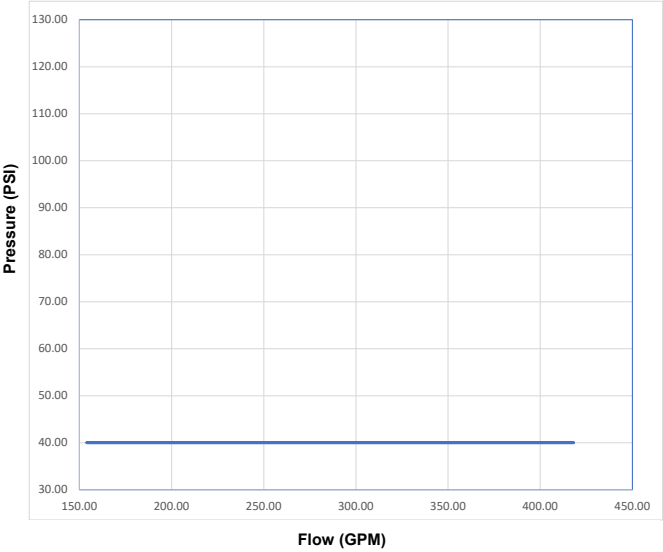


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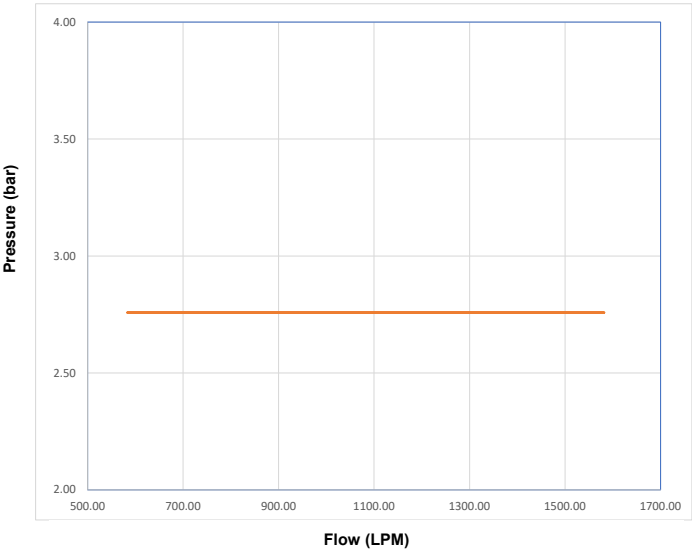
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Graph 19.2A - VFC - FM - Acetone - 4" Foam Chamber (ARK 3%)



Graph 19.2B - VFC - FM - Acetone - 4" Foam Chamber (ARK 3%) metric



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Model VFC Foam Chamber

Table 20: FM Approvals for Model VFC Foam Chamber (Ethyl Acetate^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
ARK 3%	2.5	40	2.76	40	2.76	43	162.8	43	162.8	0.600	15.24	0.60	24.45	20.1

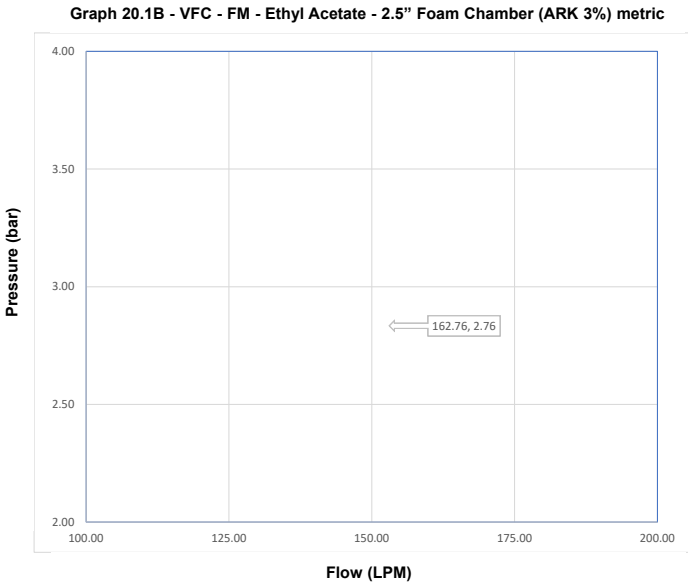
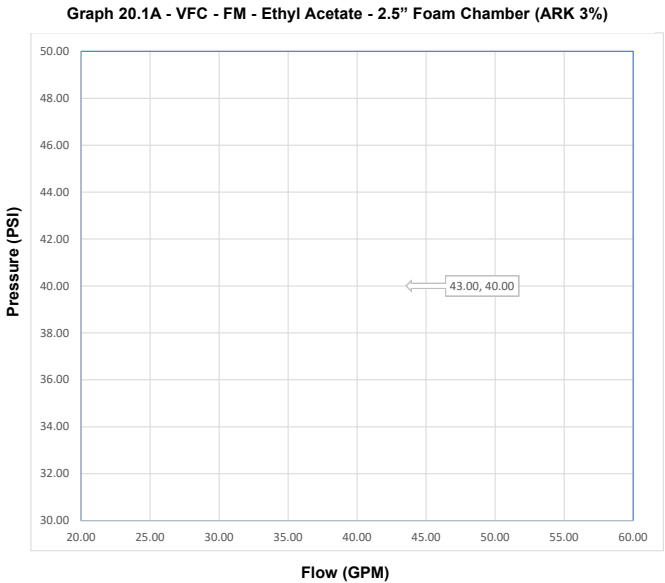
Footnotes:

1. This table shows listings available at the time of publication.

2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.

3. Working pressure on the upstream side of the inlet orifice of the foam chamber.

4. Refer to the graphs below for design range.



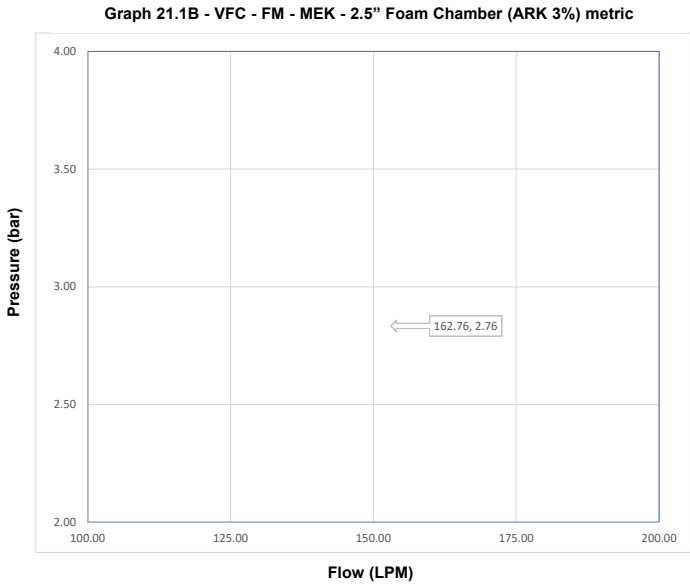
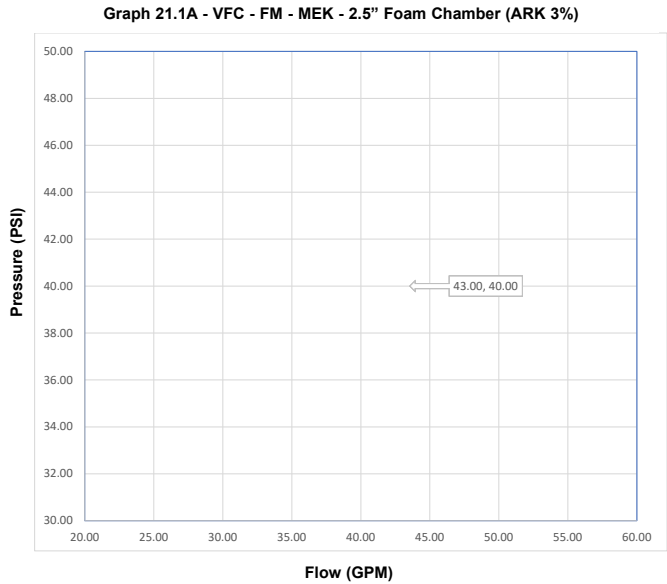
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Table 21: FM Approvals for Model VFC Foam Chamber (MEK^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Approved Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft ²	Lpm/m ²	
ARK 3%	2.5	40	2.76	40	2.76	43	162.8	43	162.8	0.600	15.24	0.60	24.45	21.1
Footnotes:														
1. This table shows listings available at the time of publication.														
2. Density indicated is minimum application density required per FM5130 for Foam Equipment and Liquid Concentrates. This density cannot be reduced.														
3. Working pressure on the upstream side of the inlet orifice of the foam chamber.														
4. Refer to the graphs below for design range.														



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Table 22: UL Listings for Model VFC Foam Chamber (Hydrocarbons - Heptane^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
USP 3%	3"	45	3.10	125	8.61	101	382	480	1817	0.906 – 1.531	23.01 – 39.89	0.10	4.08	22.1
ARK 3%	3"	75	5.17	130	8.93	96	363.4	480	1816.8	0.906 – 1.531	23.01 – 39.89	0.10	4.08	22.2

Footnotes:

1.

2.

3.

4.

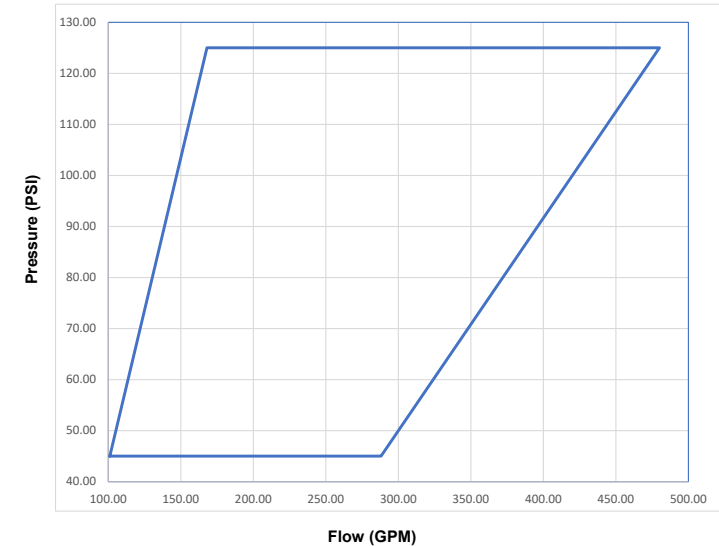
This table shows listings available at the time of publication. Fire testing performed in accordance to the procedure in UL 162.

Density indicated is minimum application density required per UL162 Standard for Foam Extinguishing Systems. This density cannot be reduced.

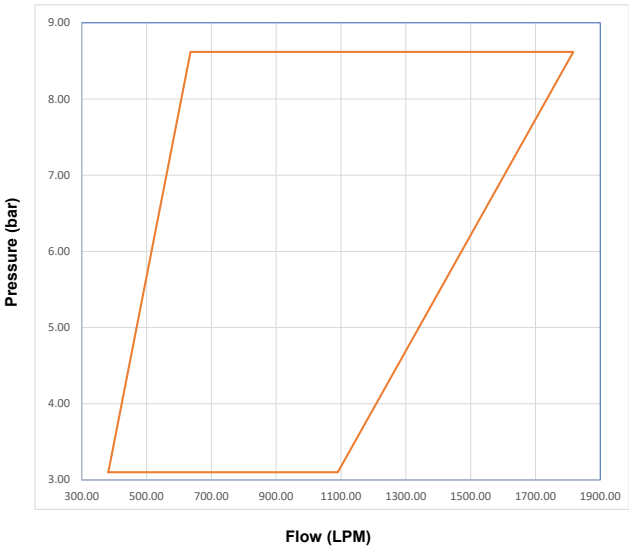
Working pressure on the upstream side of the inlet orifice of the foam chamber.

Refer to the graphs below for design range.

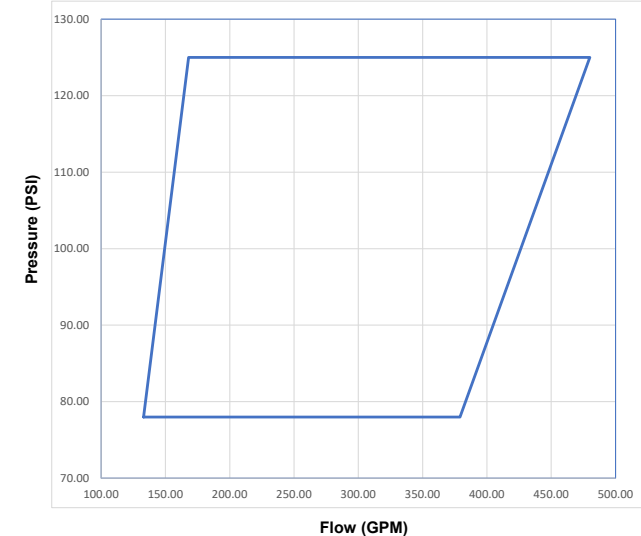
Graph 22.1A - VFC - UL - Hydrocarbons (Heptane) - 3" Foam Chamber (USP 3%)



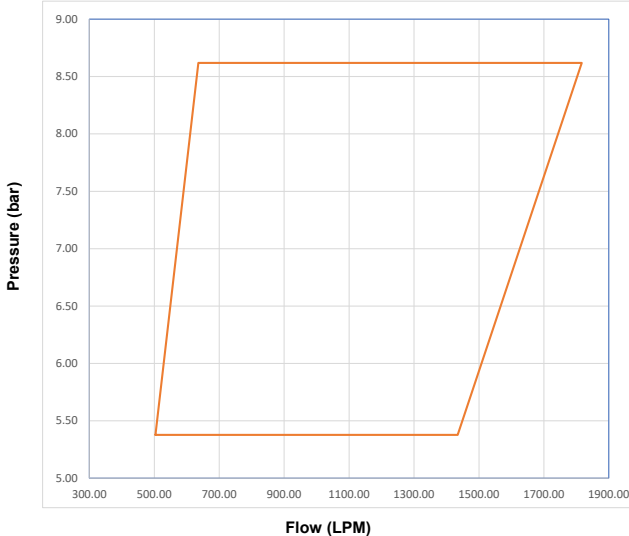
Graph 22.1B - VFC - UL - Hydrocarbons (Heptane) - 3" Foam Chamber (USP 3%)



Graph 22.2A - VFC - UL - Hydrocarbons (Heptane) - 3" Foam Chamber (ARK 3%)



Graph 22.2B - VFC - UL - Hydrocarbons (Heptane) - 3" Foam Chamber (ARK 3%)





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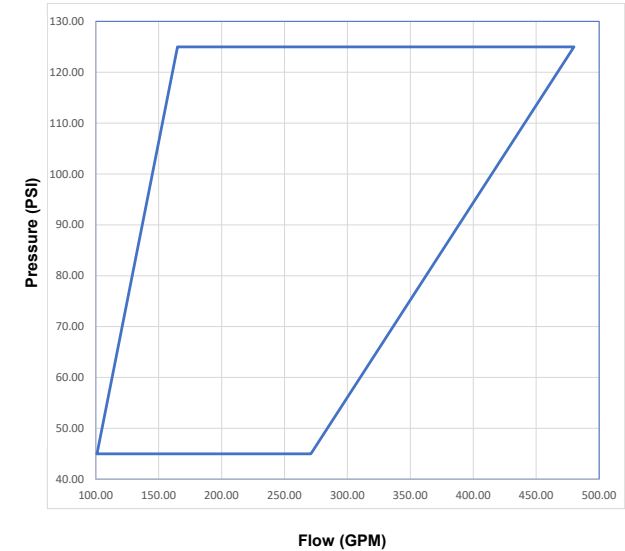
Table 23: Tested per UL 162 for Model VFC Foam Chamber (Ethanol^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
USP 3%	3"	45	3.10	125	8.61	101	382	480	1817	0.906 – 1.531	23.01 – 39.89	0.167	6.8	23.1

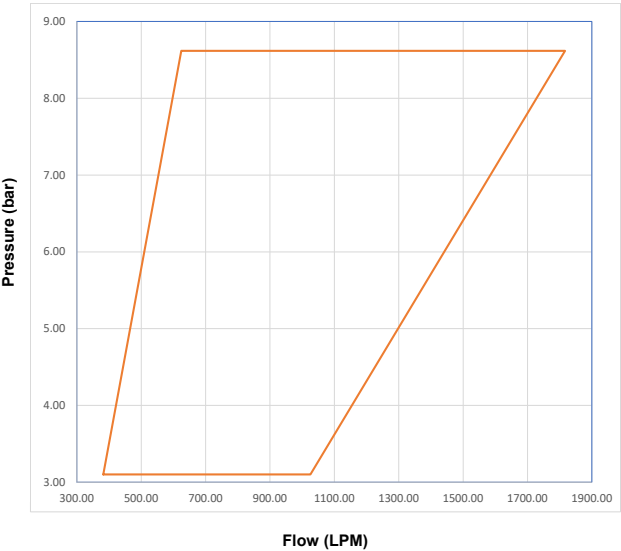
Footnotes:

- 1. This table shows listings available at the time of publication. Fire testing performed in accordance to the procedure in UL 162.
- 2. Density indicated is minimum application density required per UL162 Standard for Foam Extinguishing Systems. This density cannot be reduced.
- 3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
- 4. Refer to the graphs below for design range.

Graph 23.1A - VFC - UL - Ethanol - 3" Foam Chamber (USP 3%)



Graph 23.1B - VFC - UL - Ethanol - 3" Foam Chamber (USP 3%) metric





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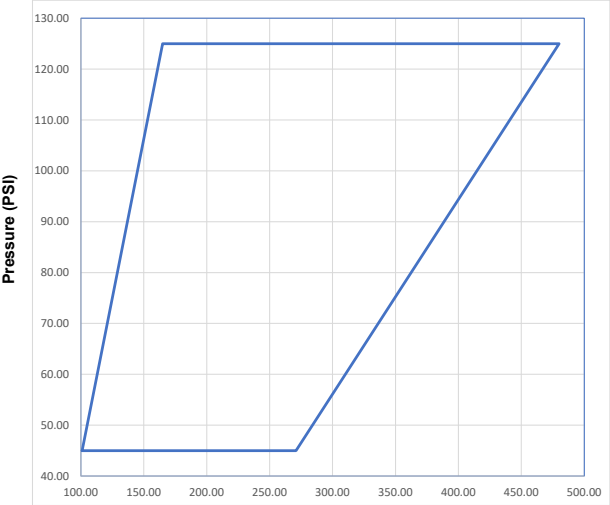
Table 24: Tested per UL 162 for Model VFC Foam Chamber (Methanol^{1,4})

Foam Concentrate	Inlet Size	Working Pressure ³				Flow Range				Orifice Range		Minimum Listed Foam Design Density ²		Graph ⁴ Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft²	Lpm/m²	
USP 3%	3"	45	3.10	125	8.61	101	382	480	1817	0.906 – 1.531	23.01 – 39.89	0.167	6.8	24.1

Footnotes:

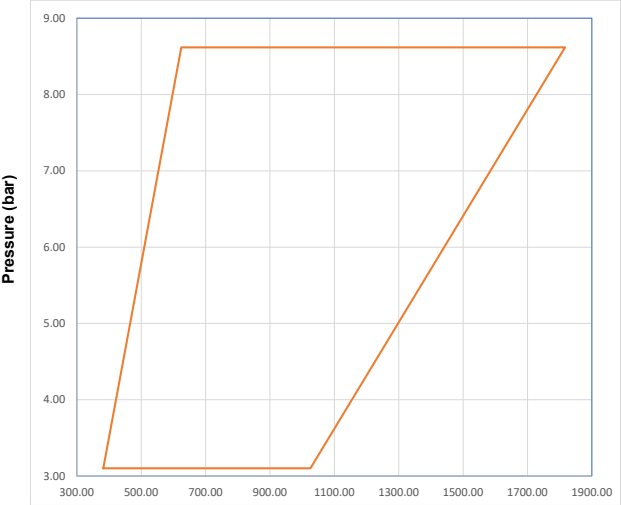
- 1. This table shows listings available at the time of publication. Fire testing performed in accordance to the procedure in UL 162.
- 2. Density indicated is minimum application density required per UL162 Standard for Foam Extinguishing Systems. This density cannot be reduced.
- 3. Working pressure on the upstream side of the inlet orifice of the foam chamber.
- 4. Refer to the graphs below for design range.

Graph 24.1A - VFC - UL - Methanol - 3" Foam Chamber (USP 3%)



Flow (LPM)

Graph 24.1B - VFC - UL - Methanol - 3" Foam Chamber (USP 3%) metric



Flow (LPM)