



# TECHNICAL BULLETIN

## DISCHARGE DEVICES FOR USE WITH SFFF FOAM CONCENTRATES

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058  
 Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com  
 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	Description
Model VFM Foam Maker	1	Model VFM Foam Maker FM Approvals for Heptane using ARK 3% and USP 3% Foam concentrates.
	2	Model VFM Foam Maker FM Approvals for Alcohol (IPA) using ARK 3% Foam concentrate.
	3	Model VFM Foam Maker FM Approvals for Ketone (Acetone) using ARK 3% Foam concentrate.
	4	Model VFM Foam Maker FM Approvals for Ethanol using ARK 3% Foam concentrate.
	5	Model VFM Foam Maker UL Listings for Hydrocarbons using USP 3% Foam concentrate.
Model VFC Foam Chamber	6	Model VFC Foam Chamber UL Listings for Heptane using USP 3% Foam concentrate.



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### Model VFM Foam Maker

Table 1: Model VFM Foam Maker (Heptane)

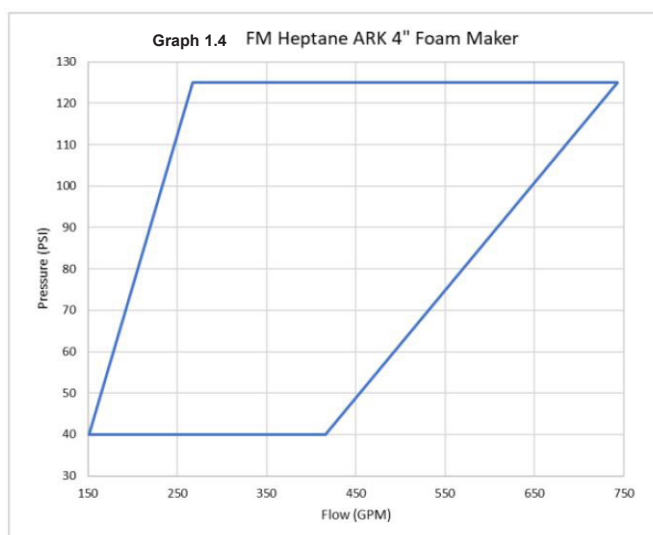
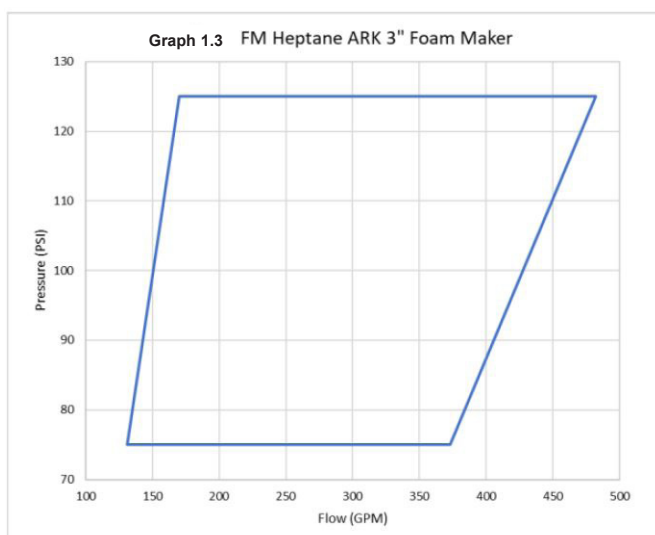
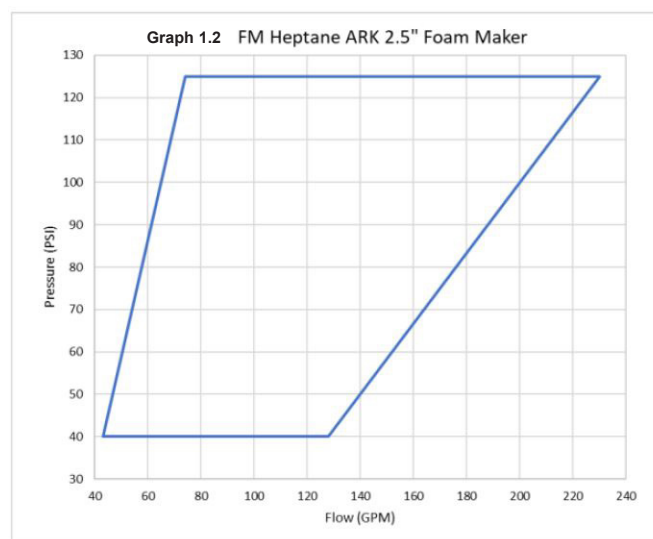
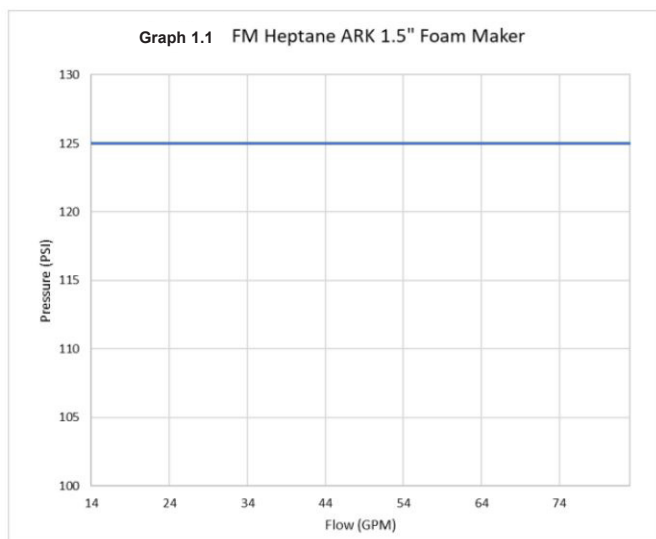
FM APPROVALS: HEPTANE														
Foam Concentrate	Inlet Size	Working Pressure <sup>3</sup>				Flow Range				Orifice Range		Minimum Listed Foam Design Density <sup>2</sup>		Graph Ref <sup>4</sup>
		Minimum		Maximum		Minimum		Maximum		Inch	mm	gpm/ft <sup>2</sup>	Lpm/m <sup>2</sup>	
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM					
ARK 3%	1.5"	125	8.62	125	8.62	14	53	83	314	0.250-0.635	6.35-16.13	0.20	8.2	1.1
	2.5"	40	2.76	125	8.62	43	163	230	870	0.600-1.050	15.24-26.67	0.20	8.2	1.2
	3"	75	5.17	125	8.62	131	495	482	1824	0.906-1.531	23.01-38.89	0.20	8.2	1.3
	4"	40	2.76	125	8.62	151	572	743	2812	1.142-1.900	29.01-48.26	0.20	8.2	1.4
USP 3%	2.5"	40	2.76	125	8.62	45	170	230	871	0.600-1.050	15.24-26.67	0.10	4.1	1.5
	3"	40	2.76	75	5.17	101	382	392	1484	0.906-1.531	23.01-38.89	0.10	4.1	1.6

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

2. Density indicated is minimum application density required per FM5130 Standard 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 maker.

4. Please refer to the graphs below for design range.



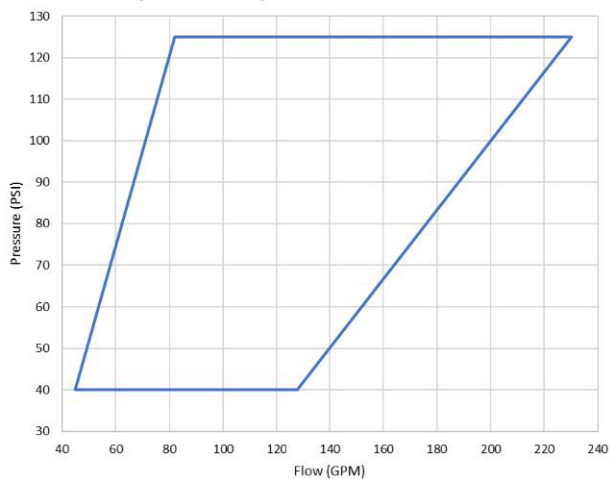


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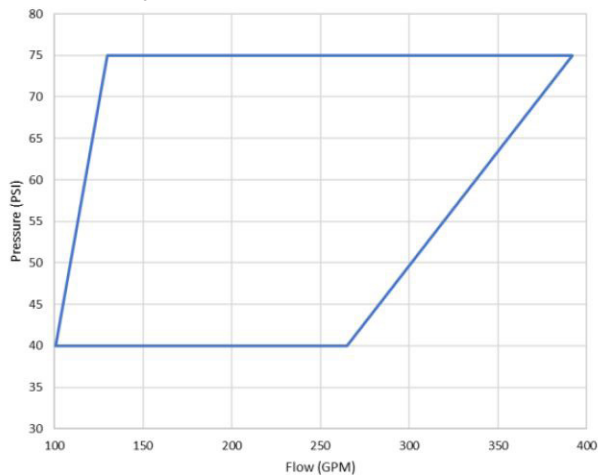
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Graph 1.5 FM Heptane USP 2.5" Foam Maker



Graph 1.6 FM Heptane USP 3" Foam Maker





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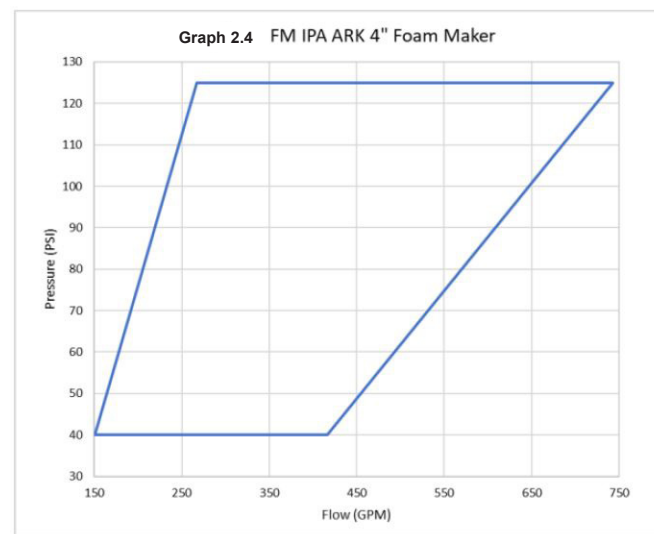
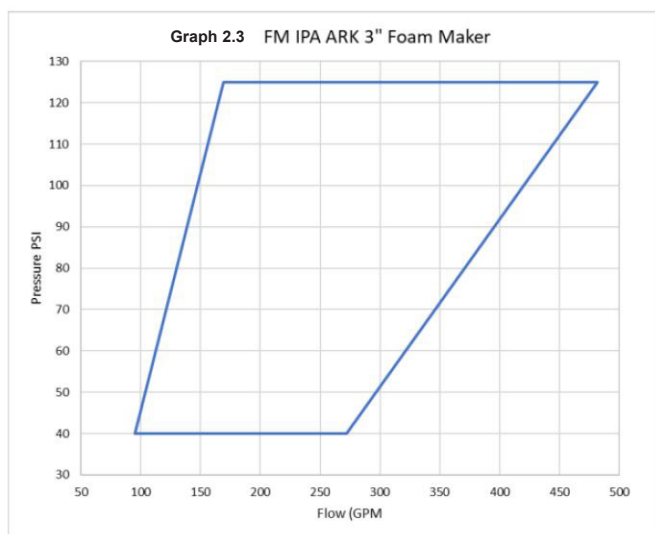
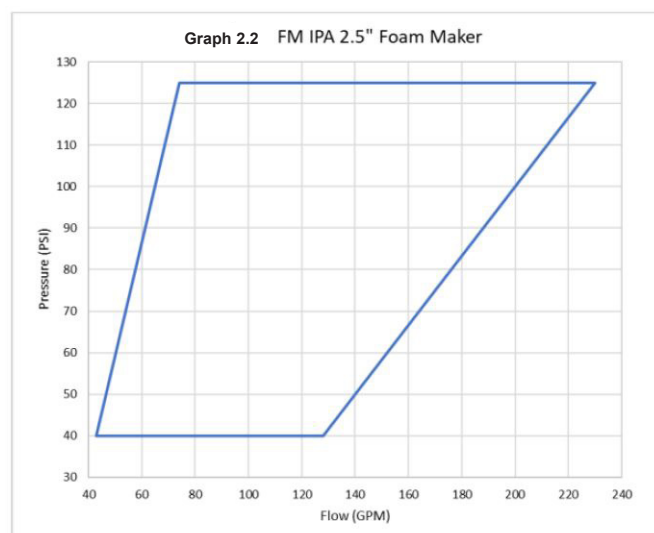
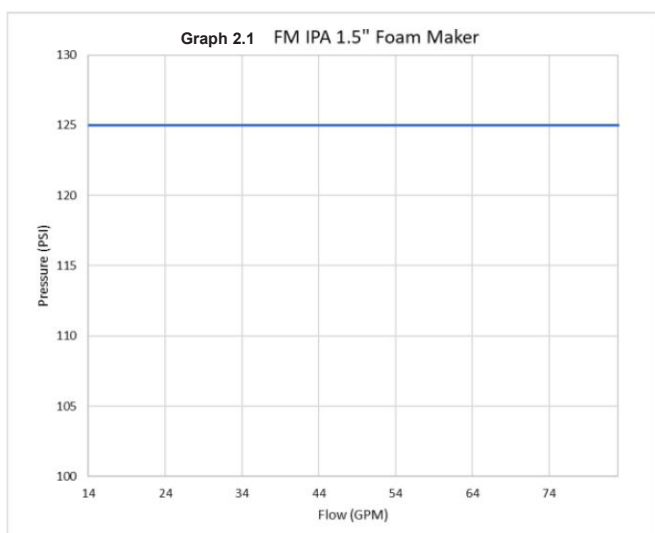
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Table 2: Model VFM Foam Maker (Alcohol - IPA)

FM APPROVALS: ALCOHOL - IPA 14														
Foam Concentrate	Inlet Size	Working Pressure 3				Flow Range				Orifice Range		Minimum Listed Foam		Graph 4
		Minimum		Maximum		Minimum		Maximum		Inch	mm	gpm/ft <sup>2</sup>	Lpm/m <sup>2</sup>	
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM					
ARK 3%	1.5"	125	8.62	125	8.62	14	53	83	314	0.250-0.635	6.35-16.13	0.25	10.2	2.1
	2.5"	40	2.76	125	8.62	43	163	230	870	0.600-1.050	15.24-26.67	0.25	10.2	2.2
	3"	40	2.76	125	8.62	95	360	482	1824	0.906-1.531	23.01-38.89	0.25	10.2	2.3
	4"	40	2.76	125	8.62	151	572	743	2812	1.142-1.900	29.01-48.26	0.25	10.2	2.4

1. This table shows approvals available at the time of publication.
2. Density indicated is minimum application density required per FM5130 Standard for Foam Extinguishing Systems. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam maker.
4. Please refer to the graphs below for design range.





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Table 3: Model VFM Foam Maker (Ketone - Acetone)

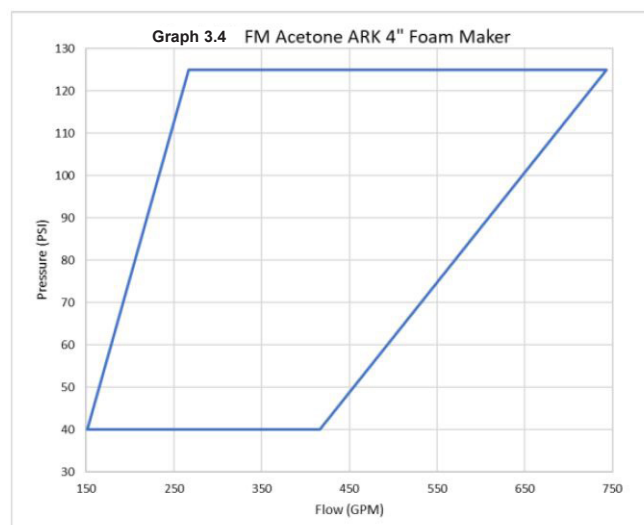
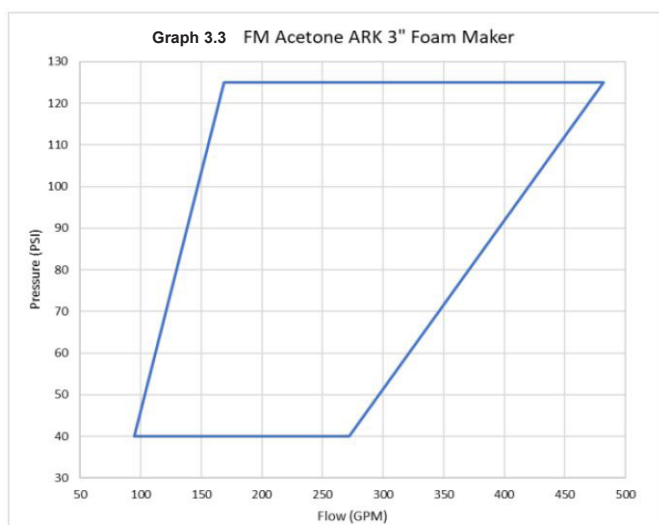
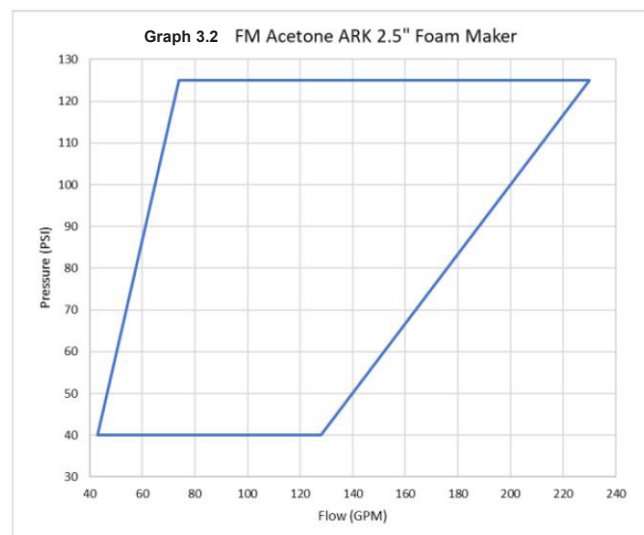
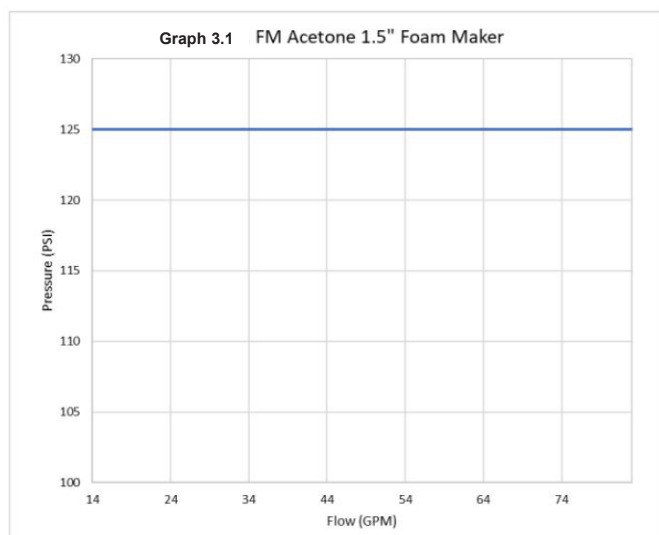
FM APPROVALS: KETONE - ACETONE <sup>14</sup>														
Foam Concentrate	Inlet Size	Working Pressure <sup>3</sup>				Flow Range				Orifice Range		Minimum Listed Foam		Graph <sup>4</sup>
		Minimum		Maximum		Minimum		Maximum		Inch	mm	gpm/ft <sup>2</sup>	Lpm/m <sup>2</sup>	
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM					
ARK 3%	1.5"	125	8.62	125	8.62	14	53	83	314	0.250-0.635	6.35-16.13	0.20	8.2	3.1
	2.5"	40	2.76	125	8.62	43	163	230	870	0.600-1.050	15.24-26.67	0.20	8.2	3.2
	3"	40	2.76	125	8.62	95	360	482	1824	0.906-1.531	23.01-38.89	0.20	8.2	3.3
	4"	40	2.76	125	8.62	151	572	743	2812	1.142-1.900	29.01-48.26	0.20	8.2	3.4

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

2. Density indicated is minimum application density required per FM5130 Standard for Foam Extinguishing Systems. This density cannot be reduced.

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

4. Please refer to the graphs below for design range.





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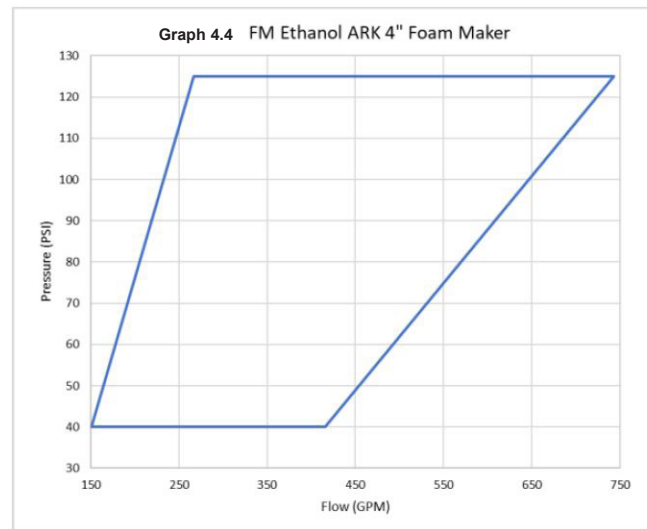
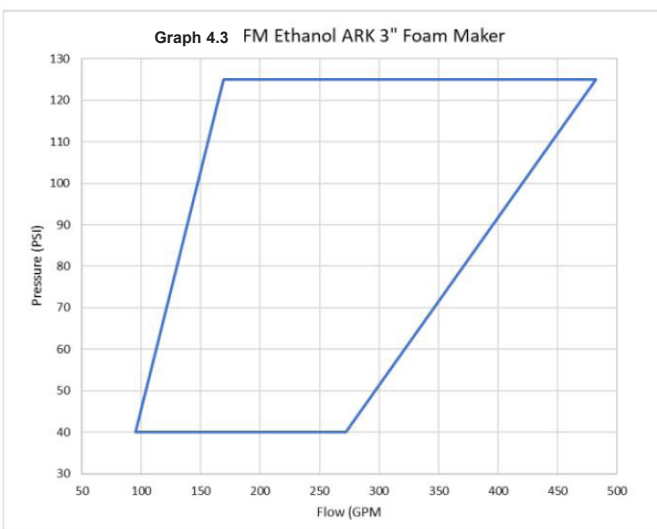
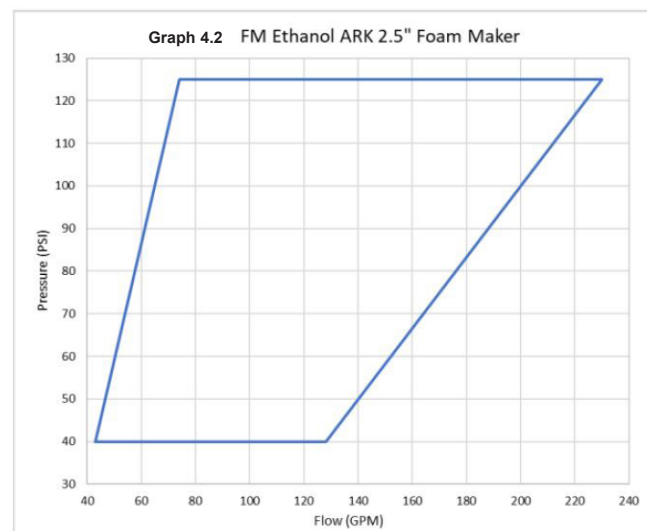
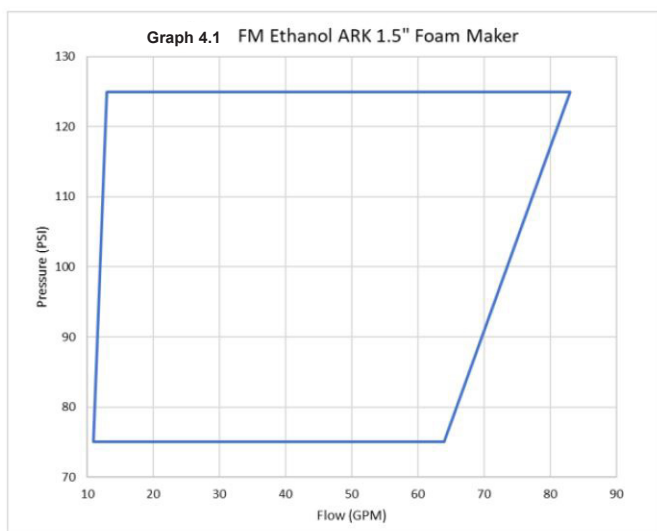
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Table 4: Model VFM Foam Maker (Ethanol)

FM APPROVALS: ETHANOL <sup>14</sup>														
Foam Concentrate	Inlet Size	Working Pressure <sup>3</sup>				Flow Range				Orifice Range		Minimum Listed Foam		Graph <sup>4</sup>
		Minimum		Maximum		Minimum		Maximum		Inch	mm	gpm/ft <sup>2</sup>	Lpm/m <sup>2</sup>	
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM					
ARK 3%	1.5"	75	5.17	125	8.62	11	42	83	314	0.250-0.635	6.35-16.13	0.16	6.4	4.1
	2.5"	40	2.76	125	8.62	43	163	230	870	0.600-1.050	15.24-26.67	0.16	6.4	4.2
	3"	40	2.76	125	8.62	95	360	482	1824	0.906-1.531	23.01-38.89	0.16	6.4	4.3
	4"	40	2.76	125	8.62	151	572	743	2812	1.142-1.900	29.01-48.26	0.16	6.4	4.4

1. This table shows approvals available at the time of publication.
2. Density indicated is minimum application density required per FM5130 Standard for Foam Extinguishing Systems. This density cannot be reduced.
3. Working pressure on the upstream side of the inlet orifice of the foam maker.
4. Please refer to the graphs below for design range.





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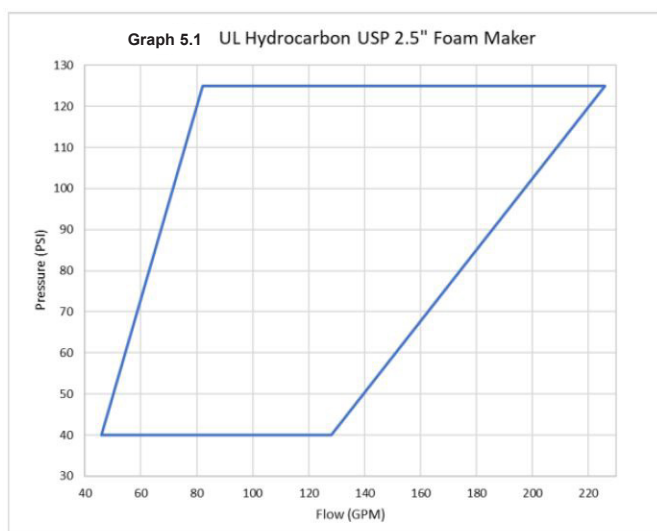
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Table 5: Model VFM Foam Maker (Hydrocarbons)

UL LISTINGS: HYDROCARBONS <sup>1,4</sup>														
Foam Concentrate	Inlet Size	Working Pressure <sup>3</sup>				Flow Range				Orifice Range		Minimum Listed Foam		Graph <sup>4</sup>
		Minimum		Maximum		Minimum		Maximum		Inch	mm	gpm/ft <sup>2</sup>	Lpm/m <sup>2</sup>	
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM					
USP 3%	2.5"	40	2.76	125	8.62	46	174	226	855	0.632	0.72	0.10	4.1	5.1

1. This table shows approvals 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 maker.  
 4. Please refer to the graphs below for design range.





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### Model VFC Foam Chamber

Table 6: Model VFC Foam Chamber (Hydrocarbons - Heptane)

UL Listing: Heptane <sup>1,4</sup>														
Foam Concentrate	Inlet Size	Working Pressure <sup>1</sup>				Flow Range				Orifice Range		Minimum Listed Foam Design Density		Graph Reference
		Minimum		Maximum		Minimum		Maximum						
		PSI	bar	PSI	bar	GPM	LPM	GPM	LPM	Inches	mm	gpm/ft <sup>2</sup>	Lpm/m <sup>2</sup>	
USP 3%	3"	45	3.10	125	8.61	101	382	480	1817	0.906 – 1.531	23 – 39	0.10	4.1	6.1

**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 6.1 UL Hydrocarbon USP 3" Foam Chamber

