

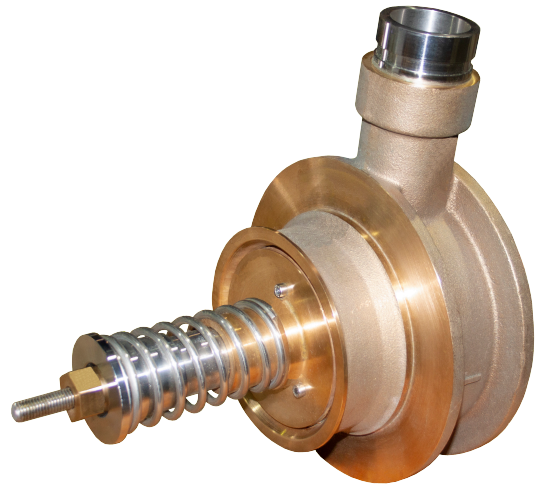
WIDE RANGE BLADDER TANK PROPORTIONERS

MODEL LFP-6 and LFP-8

NPR105

Approvals: UL with Universal^{®F3} Green AR-Synthetic Foam

- Designed to Meet the Proportioning Requirements of NFPA 16:2015 Chapter 4 and EN 13565-1:2003+A1:2007 Chapter 7
- UL Approved for Use with National Foam Universal^{®F3} Green AR-Synthetic Foam Concentrate
- Foam Proportioning as Low as 64 GPM (242 LPM)
- Allows the Use of Lower Cost Bladder Tank Foam-Water Sprinkler Systems
- Less Total System Hardware and Maintenance Required with Minimal Moving Parts and No Electrical Hook-Up Required



Description

National Foam Wide Range Bladder Tank Proportioners are designed for use with National Foam's Universal Green 3%-3% AR-Synthetic Foam Concentrate. The proportioners function by metering foam concentrate into the water supply line. Upon system actuation, incoming water applies pressure to the concentrate in the bladder, which supplies pressurized concentrate to the proportioning device. The foam-water solution is then piped to the discharge devices in the hazard area.

When installed in a closed head, wet sprinkler system, the proportioner operates as follows:

- With the proportioner properly installed in the sprinkler riser, the water pressure is equal on both sides of the proportioner. As sprinkler heads open in a fire situation, foam concentrate is added into the water stream through a precisely machined metering tube.
- As more sprinkler heads open, the increase in water flow causes the deflector to open more, increasing the orifice size on the metering tube, allowing more foam concentrate into the water stream. This feature gives the proportioner the ability to properly proportion at both extremely low flow rates and at extremely high flow rates.

Each proportioner consists of a cast bronze body, bronze deflector, stainless steel spring, and stainless steel foam metering tube.

The LFP Model Proportioner is available in two standard sizes (6 in. and 8 in.) and is designed to fit between two 6 in. (DN150) or 8 in. (DN200) ANSI Class 150 (DIN PN16) pipe flanges. A minimum of five pipe diameters of straight pipe is necessary upstream and downstream of the proportioner.

Features

- Designed to Meet the Proportioning Requirements of NFPA 16:2015 Chapter 4 and EN 13565-1:2003+A1:2007 Chapter 7
- UL Approved for Use with National Foam Universal^{®F3} Green Foam Concentrate
- Foam Proportioning as Low as 64 GPM (242 LPM) - 4 Heads
- Allows the Use of Lower Cost Bladder Tank Foam-Water Sprinkler Systems
- Less Total System Hardware and Maintenance Required with Minimal Moving Parts
- No Electrical Hook-Up Required

Applications

The National Foam Model LFP Wide Range Proportioner is UL Approved for use with National Foam Universal^{®F3} Green 3%-3% AR-Synthetic Foam Concentrate. Refer to the Systems Specifications for other NF foam concentrates that have been tested for use with this proportioner.

The NF Model LFP proportioner is designed for use with bladder tank systems only. Refer to the System Specifications for the equivalent lengths the proportioners may be installed from the bladder tank. The normal swing check, concentrate isolation, and hydraulic valve(s) do not have to be included in this equivalent length calculation.

The Model LFP proportioner is designed to proportion and control the mixing of the foam concentrate into a water stream over a wide range of water flow rates and pressures. The proportioners have been tested by the foam concentrate manufacturer and are capable of proportioning at flow rates as low as 64 GPM (242 LPM) to as high as 3,188 GPM (12,068 LPM) with a maximum working pressure of 233 psi (16 bar).

NFPA 30:2015 Chapter 16 requires properly proportioned foam solution to be generated with as few as four sprinklers flowing. In many foam-water sprinkler systems, this condition would produce flows considerably less than the minimum design flow of conventional proportioning equipment. Control of the fire may not be established if the installed proportioner is unable to correctly proportion foam across the entire critical flow range. The flow capacity of the Model LFP Wide Range Proportioner allows foam to be proportioned properly across a wide design range for a system.

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Designed with NFPA 16 and EN 13565 in mind, these proportioners are well suited for closed head foam-water sprinkler application where the system flow may start low and increase as more sprinklers open.

Other applications where this product can be used:

Tank farm protection systems, as per NFPA 11:2016 using foam chambers or other means of foam delivery, where

varied flow rates are encountered in conjunction with requirements for supplementary foam handline(s).

Closed head foam-water sprinkler systems including warehouse storage, chemical processing, loading racks, and anywhere flammable liquids are used, stored, processed, or transported.

Approvals and Listings

- UL Approved with Universal[®]F3 Green AR-Synthetic Foam

Technical Information

Materials of Construction:

Body:Cast Bronze

Deflector:.....Bronze

Spring:Stainless Steel

Foam Metering Tube:.....Stainless Steel

* Typical Flow Ranges							
		Minimum Flow		Maximum Flow		Hydraulic Loss (Using DN50 Pipe Except Where Noted)	
Model	Foam Concentrate	GPM	LPM	GPM	LPM	Equivalent Feet	Equivalent Meters
LFP-6	Universal Green	64	242	2,744	10,387	12 - 35	3.7 - 10.7
LFP-8	Universal Green	76	288	3,188	12,068	12 - 35	3.7 - 10.7

*Refer to UL directory for specific flow range for each foam concentrate.

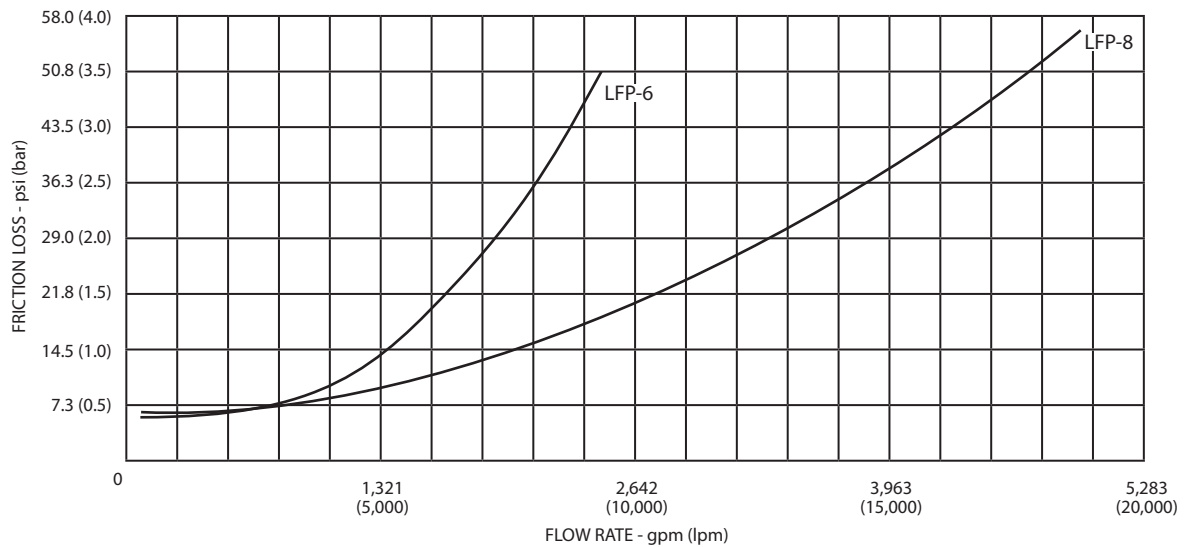
Proportioner Information											
		Minimum Inlet Pressure		Maximum Inlet Pressure		Upstream Straight Pipe Length		Downstream Straight Pipe Length		Approx. Weight	
Model	Size	psi	bar	psi	bar	in.	mm	in.	mm	lb.	kg
LFP-6	6 in. (DN150)	14.5	1	232.1	16	29.5	750	29.7	750	28.7	13
LFP-8	8 in. (DN200)	14.5	1	232.1	16	39.4	1,000	39.4	1,000	55.1	25

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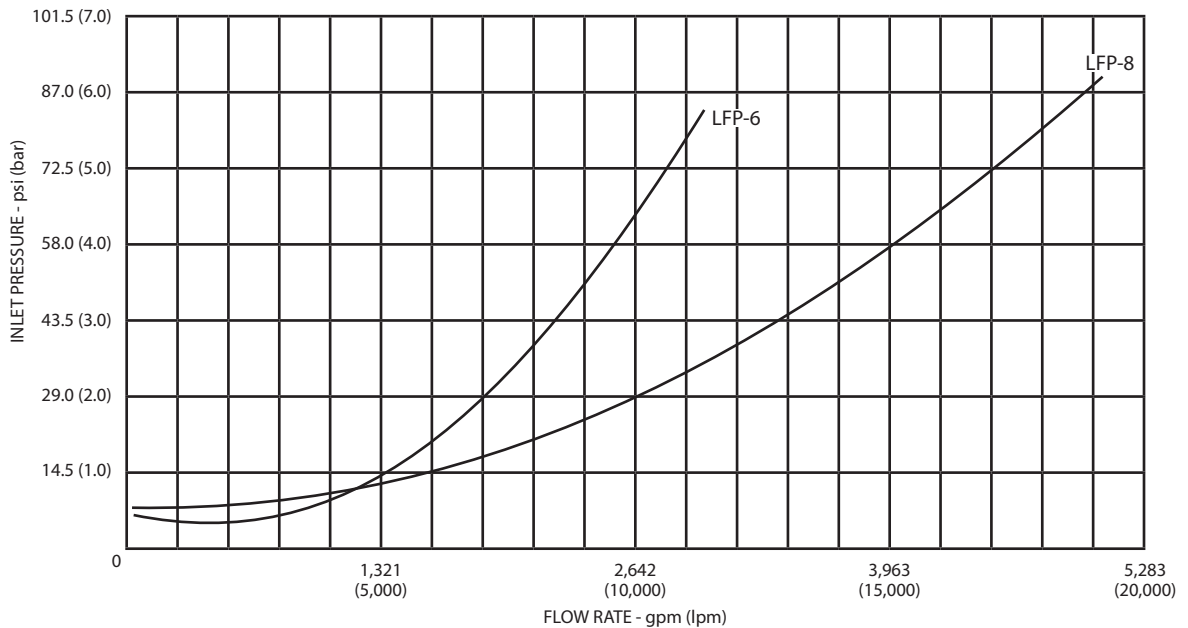
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LFP Models Friction Loss



LFP Models Minimum Inlet Pressure

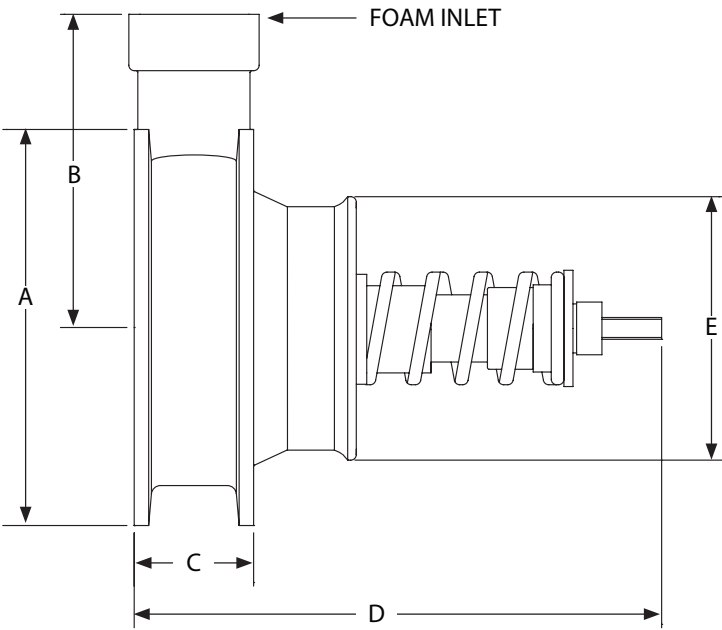


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Proportioner Dimensions											
		A		B		C		D		E	
Model	Foam Inlet	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
LFP-6	2 in. BSP(F)	8.6	218	6.8	172	2.7	69	11.2	281	5.7	145
LFP-6	2 in. Groove	8.6	218	8.0	202	2.7	69	11.2	281	5.7	145
LFP-8	2.5 in. BSP (F) and 3 in. Groove	10.7	271	9.7	246	3.6	90.8	12.8	326	8.0	203



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ORDERING INFORMATION						
Size	Model	% Injection	Foam Concentrate Inlet	Part Number	Weight lb (kg)	Approx. Shipping Cube ft ³ (m ³)
<i>Universal Green 3%-3% Foam Concentrate</i>						
6"	LFP-6-3 BT-BSP	3%	BSP Female	1233-8101-1	27.5 (12.5)	2.17 (0.06)
6"	LFP-6-3-BT-GR	3%	Grooved	1233-8101-2	27.5 (12.5)	2.17 (0.06)
6"	LFP-6-6-BT-BSP	6%	BSP Female	1233-8101-3	27.5 (12.5)	2.17 (0.06)
6"	LFP-6-6-BT-GR	6%	Grooved	1233-8101-4	27.5 (12.5)	2.17 (0.06)
8"	LFP-8-3 BT-BSP	3%	BSP Female	1233-8101-5	51 (23)	3.75 (0.1)
8"	LFP-8-3-BT-GR	3%	Grooved	1233-8101-6	51 (23)	3.75 (0.1)
8"	LFP-8-6 BT-BSP	6%	BSP Female	1233-8101-7	51 (23)	3.75 (0.1)
8"	LFP-8-6-BT-GR	6%	Grooved	1233-8101-8	51 (23)	3.75 (0.1)

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National Foam operates a continuous program of product development. The right is therefore reserved to modify any specification without prior notice and National Foam should be contacted to ensure that the current issues of all technical data sheets are used.

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