Lebanon Fire District Pump Chart

Pump Pressure Cheat Sheet

Line	Length	Nozzle	GPM	EDP
1¾ Crosslay	150'	SB	150	**120**
1¾ Crosslay	150'	Metro 1	150	**120**
1 ¾ Crosslay	200'	Metro 1	150	**130**
Front Bumper	100'	Metro 1	150	**100**
2 ½ Preconnect	150'	1⅛" SB	265	**80**
3" Blitz Line	150'	Blitz Fire	500	**130**
1" Reel/Flue Fires	100'	Chimney Nozzle	40	**80**

House Bundles

Extended off 2 ½"	100'	Metro 1	150	**110**
Extended off 150' 1 ¾"	100'	Metro 1	150	**165**
Extended off 200' 1 ¾"	100'	Metro 1	150	**185**

Nozzle Volumes

Metro 1	150 GPM
Metro 2	250 GPM
SB (1 ¾")	150 GPM
1 1/8" SB (2 ½")	265 GPM
1" Wildland Nozzle	10/24 GPM
1 ½" Wildland Nozzle	95 GPM
Forestry Nozzle	20 GPM
Chimney Nozzle	40 GPM

Monitor Nozzles

1⅜" tip	**80 PSI** (SB, at the Nozzle)	500 GPM
1½" tip		600 GPM
1¾" tip		800 GPM
2" tip		1000 GPM
Combination	100 PSI	1000 GPM
Blitzfire	100 PSI	500 GPM

Hydrant Flow Capabilities

Drop from static to residual pressure

10% drop	3 like flows
15% drop	2 like flows
25% drop	1 like flow

Foam

Class A		0.3%
Class B		3%
Eductor	200 PSI @ eductor, within 100' of the nozzle	

Pump Math Formulas

EDP = NP + FL + Appliance + Elevation

FL = C x (Q/100)^2 x (L/100)

Nozzle Pressures (NP)

Smooth Bore Handheld	50 PSI
Metro 1 & 2	50 PSI
Wildland Nozzle	100 PSI
Smooth Bore Master Stream	80 PSI
Combination Master Stream	100 PSI
Chimney Nozzle	60 PSI

Friction Loss (FL) in PSI per 100' Hose

	150 GPM	250 GPM	300 GPM	500 GPM	750 GPM	1000 GPM
1¾"	35	97				
2½"	4.5	12.5	18			
3"			7	20	45	80
4"			2	5	11.5	20

Appliance Friction Loss

Master Stream	25 PSI
Appliances if flowing more than 350 GPM	10 PSI
Standpipe	25 PSI
Aerial Waterway	25 PSI

Elevation

10 ft of elevation change	**5 PSI**
Every floor above the 1st floor	

Coefficients (C)

Diameter	Coefficient
1 ½"	24
1 ¾"	15.5
2 ½"	2
3"	0.8
4"	0.2
5"	0.08

Useful Information

Elevated Master Stream	EDP = 125 + Elevation
Relay pumping	40 PSI at pump panel
FDCs	EDP = 150
Standpipes	25 PSI and 5 PSI each floor

Lebanon Fire District Pump Chart

Fire Flow Formula

$$\left(\frac{Length * Width}{3} \right) \text{ x Percent involved} = GPM$$

Key Hydrants

North Lebanon	Reeves Parkway and Hwy 20
West Lebanon	12th and W Tangent St
	West of Montessa Way
	Airport and Airway Rd
South Lebanon	Weirich and Hwy 20
East Lebanon	Grant St and Berlin Rd

GPM Supply for Rural Operations

Tender fill time
1. Record the time of the tender's fill cycle.
2. Round time to the nearest half minute, convert to a decimal -
3. Divide the tender's gallon capacity by the minutes.

$$\frac{\text{Gallon Capacity}}{\text{Minutes}} = \text{Available GPM}$$

Notes