



LFD Pump Chart



Pump Pressure Cheat Sheet				
Line	Length	Nozzle	GPM	PDP
1 3/4" Crosslay	150'	Metro I	150	130
1 3/4" Crosslay	200'	Metro I	150	150
Front Bumper	100'	Metro I	150	120
2 1/2" Preconnect	150'	1 1/8 SB	300	80
3" Blitzfire Line	150'	Blitzfire (100PSI)	500	130
Hose Bundle Extended off 2 1/2"	2 1/2'-150' 1 3/4'-100'	Metro 2	250	150

Nozzle Pressures	
Master Streams – Smooth Bore	80 PSI
Master Streams – Combination	100 PSI
Smooth Bore Handheld	50 PSI
Metro 1 & 2	100 PSI
Wildland Nozzles	50 PSI

Friction Loss in PSI per 100' Hose						
	150 GPM	250 GPM	500 GPM	600 GPM	800 GPM	1000 GPM
1 3/4"	35	97				
2 1/2"	4.5	12.5				
3"			20	29	51	80
4"			5	7	13	20

Required Fire Flow Calculations

$$\left(\frac{\text{Length} \times \text{Width}}{3} \right) \times \text{Percent Involved} = \text{GPM}$$

Elevation	
5 PSI for every 10' of change in elevation (+/-)	
Or	
5 PSI for every story above the first floor	

Apparatus Operations
Elevated Master Stream - (125 + EL (5 PSI per 100' from ground) = PDP
Relay Pumping - 40 PSI at the engine you are pumping to.
FDC (Sprinkler System) -150 PSI

Appliance Friction Loss	
Appliances (Siamese, Wye, Gates) Only if greater than 350 GPM	10 PSI
Master Stream (Ground Monitor)	25 PSI
Standpipe	25 PSI
Aerial Waterway	25 PSI

Foam
 Class A – Run foam system at 0.3%
 Class B – Run foam system at 3%
 Foam Eductor – 200 PSI at Eductor

Calculating Pump Discharge Pressure (PDP)

Nozzle Pressure
 Friction Loss (Hose size 1)
 Friction Loss (Hose size 2)
 Elevation +/-
 + Appliance Loss (only if flow >350 GPM)
 = Pump Discharge Pressure

Coefficients	
Hose Size	Coefficient
1 1/2"	24
1 3/4"	15.5
2 1/2"	2
3"	0.8
4"	0.2
5"	0.08

Hydrant Flow Capabilities	
Measure drop from static intake pressure to residual intake pressure.	
10 % drop	3 like flows
15% drop	2 like flows
25% drop	1 like flow

Master Stream		
1 3/8" tip	80 PSI (at the Nozzle)	502 GPM
1 1/2" tip		608 GPM
1 3/4" tip		814 GPM
2" tip		1063 GPM



Unit #	Model	Pump	Tank	Foam	Apparatus Type
13	1996 Pierce Freightliner	1000 GPM	750	15 Gal Class A	Pumper
15	1996 Pierce Freightliner	1000 GPM	750	15 Gal Class A	Pumper
16	1994 Ford F-350 Type 6	125 GPM	300	12 Gal Class A	Type 6 / Wildland
19	2006 Pierce Interface	1000 GPM	750	25 Gal Class A	Type 3 / Pumper
21	2007 Pierce Impel	1750 GPM	2500	20 Gal Class A	Pumper/Tender
22	2007 Pierce Impel	1750 GPM	750	20 Gal Class A	Pumper
23	2007 Pierce Impel	1750 GPM	750	20 Gal Class A	Pumper
25	1996 GMC Top Kick Rescue	N/A	N/A	N/A	Rescue
28	2012 KME Freightliner	500 GPM	2000	N/A	Water Tender
29	2012 KME Freightliner	500 GPM	2000	N/A	Water Tender
30	1989 International	150 GPM	1000	25 Gal Class A	Type 3 / Wildland
31	2009 Ford F-550 Type 6	120 GPM	400	10 Gal Class A	Type 6 / Wildland
48	1997 Pierce Saber	1250 GPM	1000	25 Gal Class A	Pumper
45	2019 Pierce Enforcer	1500 GPM	500	20 Gal Class A	Ladder Truck

Tender Delivery Rate	
TC - Tank Capacity (Gallons)	$TC/SCT = TDR$
SCT - Shuttle Cycle Time	
TDR - Tender Delivery Rate	

Pump Discharge Pressure

Nozzle Pressure _____
 Friction Loss 1 _____
 Friction Loss 2 _____
 Elevation _____
 + Appliance _____
 = PDP _____