

HANDLINE = LESS THAN 300 GPM
 50psi NOZZLE PRESSURE
 FORMULA $GPM = 29.7 \cdot D^2 \cdot \sqrt{P}$ (P=7.07)

TIP SIZE	DECIMAL EQUIV.	APPROX GPM
3/4	0.75	100
7/8	0.875	150
1	1	200
1 1/8	1.125	250
1 1/4	1.25	300

MASTER STREAM = GREATER THAN 300gpm
 80 psi NOZZLE PRESSURE
 FORMULA $GPM = 29.7 D^2 \sqrt{P}$ (P=8.94)

TIP SIZE	DECIMAL EQUIV.	APPROX GPM
1 1/4	1.25	400
1 3/8	1.375	500
1 1/2	1.5	600
1 5/8	1.625	700
1 3/4	1.75	800
1 7/8	1.875	900
2	2	1000

CRITICAL VELOCITY

HOSE DIA.	MAX GPM
1 3/4	200
2.5	300
3	500
4	1000
5	1200

MULTIPLE	LINE FL	
2nd Line =	FL X 1/4	or .25
3rd Line =	FL X 1/8	or .125
4th Line =	FL X 1/16	or .0625

HYDRANT	CAPABILITIES
DROP IN PRESSURE	# OF = OR < SETUPS
10% OR LESS	3
11% - 15%	2
16% - 25%	1
OVER 25%	0

PORT SIZE	HYDRANT GPM
2.5	167 X \sqrt{P}
4.5	541 X \sqrt{P}

PUMP RATING	100% 150PSI	70% 200PSI	50% 250PSI
GPM	1500	1050	750
GPM	1250	875	625

FRICITION LOSS PER 100' IN PSI , Q X 100

DIAMETER	Q =1	1.5	2	2.5	3	4	5	6	7	8	9	10	11	12
1 3/4	15.3	34	59											
2 1/2	3	6	10	15	21									
3	1.2	2.4	4	6	8.4	14.4	22							
4	0.27	0.5	0.9	1.4	1.9	3.24	5	7	9.5	12.2	15	19		
5	0.09	0.2	0.3	0.5	0.7	1.12	1.7	2.4	3.3	4.22	5	7	7.8	9.3