



Theoretical Discharge Through Circular Orifices

The Gallons per Minute is determined by the following formula:

$$GPM = 29.83 C d^2 \sqrt{p}$$

C = Nozzle or Outlet Coefficient | d = Accurate Diameter of the Outlet in Inches | p = Pressure Recorded on the Pitot Gauge

U.S. Gallons (231 Cubic Inches) per Minute

Head Lb. per Sq. In	Velocity Discharge Ft. per Sec.	Diameter Orifice (Inches)													
		1 1/8	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2
1	12.2	37.8	46.7	67.2	91.4	119	151	187	226	269	315	366	420	478	604
2	17.25	53.4	66.0	95	129	169	214	264	319	380	446	517	594	676	854
3	21.13	65.4	80.8	116	158	207	262	323	391	465	546	633	727	827	1,045
4	24.39	75.6	93.3	134	183	239	302	373	452	537	631	731	840	955	1,210
5	27.26	84.5	104	150	204	267	338	417	505	601	705	817	938	1,068	1,350
6	29.87	92.5	114	164	224	292	370	457	553	658	772	896	1,028	1,170	1,480
7	32.26	100	123	178	242	316	400	494	597	711	834	967	1,111	1,263	1,600
8	34.49	107	132	190	259	338	427	528	638	760	892	1,034	1,187	1,351	1,710
9	36.58	113	140	201	274	358	453	560	677	806	946	1,097	1,259	1,433	1,815
10	38.56	119	148	212	289	378	478	590	714	850	997	1,156	1,327	1,510	1,910
11	40.45	125	155	223	303	396	501	619	749	891	1,046	1,213	1,392	1,584	2,010
12	42.24	131	162	233	317	414	524	646	782	931	1,092	1,267	1,454	1,655	2,100
13	43.97	136	168	242	330	431	545	673	814	969	1,137	1,318	1,515	1,722	2,180
14	45.63	141	175	251	342	447	566	698	845	1,005	1,180	1,368	1,572	1,787	2,260
15	47.22	146	181	260	354	463	586	722	874	1,040	1,221	1,416	1,626	1,849	2,340
16	48.78	151	187	269	366	478	605	746	903	1,075	1,261	1,463	1,679	1,910	2,420
17	50.28	156	192	277	377	493	623	769	931	1,108	1,300	1,508	1,731	1,969	2,500
18	51.73	160	198	285	388	507	642	791	958	1,140	1,338	1,551	1,781	2,026	2,570
19	53.15	165	203	293	399	521	659	813	984	1,171	1,374	1,594	1,830	2,082	2,640
20	54.54	169	209	300	409	534	676	834	1,010	1,201	1,410	1,635	1,877	2,136	2,710
22	57.19	177	219	315	429	560	709	875	1,059	1,260	1,479	1,715	1,969	2,240	2,840
24	59.74	185	229	329	448	585	741	914	1,106	1,316	1,545	1,791	2,056	2,340	2,970
26	62.18	193	238	343	466	609	771	951	1,151	1,370	1,608	1,864	2,140	2,435	3,090
28	64.52	200	247	356	484	632	800	987	1,194	1,422	1,668	1,935	2,221	2,527	3,210
30	66.79	207	256	368	501	654	828	1,022	1,236	1,472	1,727	2,003	2,299	2,616	3,320
32	68.98	214	264	380	517	676	856	1,055	1,277	1,520	1,784	2,069	2,375	2,702	3,430
34	71.1	220	272	392	533	697	882	1,088	1,316	1,566	1,838	2,132	2,448	2,785	3,540
36	73.16	226	280	403	548	717	908	1,119	1,354	1,612	1,892	2,194	2,519	2,866	3,640
38	75.17	233	288	414	563	736	932	1,150	1,392	1,656	1,944	2,254	2,588	2,944	3,740
40	77.11	239	295	425	578	755	956	1,180	1,428	1,699	1,994	2,313	2,655	3,021	3,840
42	79.03	245	303	435	592	774	980	1,209	1,463	1,741	2,043	2,370	2,721	3,095	3,935
44	80.88	251	310	445	606	792	1,003	1,237	1,497	1,782	2,091	2,426	2,785	3,168	4,030
46	82.7	256	317	455	620	810	1,025	1,265	1,531	1,822	2,138	2,480	2,847	3,239	4,120
48	84.48	262	324	465	633	828	1,047	1,293	1,564	1,861	2,184	2,533	2,908	3,309	4,205
50	86.22	267	330	475	646	845	1,069	1,319	1,596	1,900	2,229	2,586	2,968	3,377	4,290
52	87.93	272	337	485	659	861	1,091	1,345	1,628	1,937	2,274	2,637	3,027	3,444	4,375
54	89.61	277	343	494	672	878	1,111	1,371	1,659	1,974	2,317	2,687	3,085	3,510	4,460
56	91.2	283	350	503	684	894	1,132	1,396	1,689	2,010	2,359	2,736	3,141	3,574	4,540
58	92.87	288	356	512	696	909	1,152	1,421	1,719	2,046	2,401	2,785	3,197	3,637	4,620
60	94.45	293	362	520	708	925	1,171	1,445	1,749	2,081	2,442	2,832	3,252	3,700	4,700

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For more information including a video explaining the conversion of a PSI Pitot Gauge reading to GPM visit: www.qrfs.com/46--How-to-Use-a-Pitot-Gauge-to-Perform-Hydrant-Flow-Testing