OPENCHANNELFLOW

20-Inch Circular Weir for 24-Inch Pipe

2-Inches [5.08 cm] High

do = diameter of circular orifice

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.01	0.12	0.0030					
0.02	0.24	0.0061					
0.03	0.36	0.0091					
0.04	0.48	0.0122					
0.05	0.60	0.0152					
0.06	0.72	0.0183					
0.07	0.84	0.0213					
0.08	0.96	0.0244					
0.09	1.08	0.0274					
0.10	1.20	0.0305					
0.11	1.32	0.0335					
0.12	1.44	0.0366					
0.13	1.56	0.0396					
0.14	1.68	0.0427					
0.15	1.80	0.0457					
0.16	1.92	0.0488					
0.17	2.04	0.0518					
0.18	2.16	0.0549					
0.19	2.28	0.0579					
0.20	2.40	0.0610	0.0121	88.83	0.1279	5.605	20.18
0.21	2.52	0.0640	0.0137	97.24	0.1400	6.135	22.09
0.22	2.64	0.0671	0.0153	106.0	0.1527	6.689	24.08
0.23	2.76	0.0701	0.0172	115.2	0.1658	7.267	26.16
0.24	2.88	0.0732	0.0191	124.7	0.1795	7.868	28.32
0.25	3.00	0.0762	0.0211	134.6	0.1938	8.492	30.57
0.26	3.12	0.0792	0.0233	144.9	0.2085	9.139	32.90
0.27	3.24	0.0823	0.0256	155.5	0.2238	9.809	35.31
0.28	3.36	0.0853	0.0280	166.5	0.2397	10.50	37.81
0.29	3.48	0.0884	0.0306	177.8	0.2560	11.22	40.39
0.30	3.60	0.0914	0.0333	189.5	0.2729	11.96	43.05

Nappe may cling to downstream weir face

$$Q = C_d\left[10.12\left(\frac{h}{d}\right)^{1.975} - 2.66\left(\frac{h}{d}\right)^{3.78}\right](d)^{5/2}$$

where

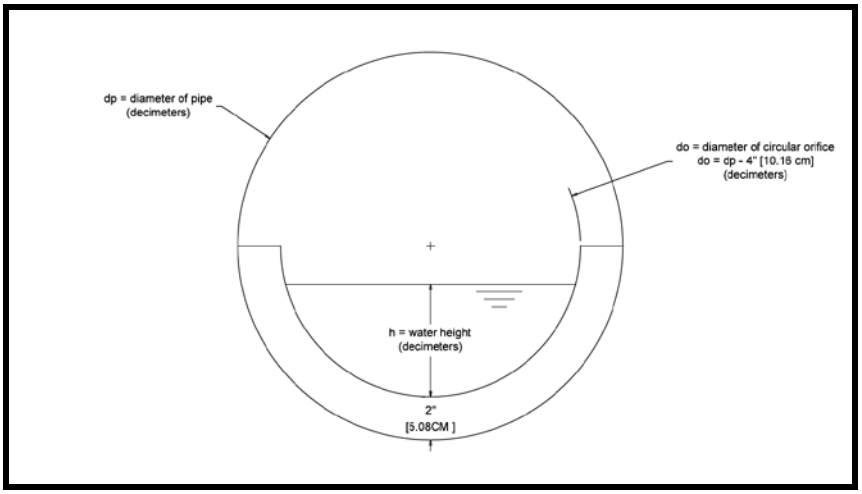
Q = discharge (liters/sec)

d = diameter of circular orifice (decimeters)

h = height over the weir (decimeters)

C_d = coefficient of discharge as given by:

$$C_d = 0.555 + \frac{1}{110\left(\frac{h}{d}\right)} + 0.041\left(\frac{h}{d}\right)$$



Source: Addison, H., Hydraulic Measurements - A Manual for Engineers

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FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.31	3.72	0.0945	0.0362	201.6	0.2902	12.72	45.79
0.32	3.84	0.0975	0.0392	214.0	0.3081	13.50	48.61
0.33	3.96	0.1006	0.0423	226.8	0.3265	14.31	51.52
0.34	4.08	0.1036	0.0456	240.0	0.3455	15.14	54.50
0.35	4.20	0.1067	0.0490	253.5	0.3649	15.99	57.57
0.36	4.32	0.1097	0.0526	267.3	0.3849	16.86	60.71
0.37	4.44	0.1128	0.0563	281.5	0.4053	17.76	63.94
0.38	4.56	0.1158	0.0602	296.1	0.4263	18.68	67.25
0.39	4.68	0.1189	0.0642	311.0	0.4477	19.62	70.63
0.40	4.80	0.1219	0.0684	326.2	0.4697	20.58	74.09
0.41	4.92	0.1250	0.0728	341.8	0.4921	21.57	77.64
0.42	5.04	0.1280	0.0773	357.8	0.5151	22.57	81.26
0.43	5.16	0.1311	0.0820	374.0	0.5385	23.60	84.96
0.44	5.28	0.1341	0.0868	390.7	0.5625	24.65	88.73
0.45	5.40	0.1372	0.0918	407.6	0.5869	25.72	92.58
0.46	5.52	0.1402	0.0970	424.9	0.6118	26.81	96.51
0.47	5.64	0.1433	0.1024	442.6	0.6372	27.92	100.5
0.48	5.76	0.1463	0.1079	460.5	0.6630	29.06	104.6
0.49	5.88	0.1494	0.1136	478.8	0.6894	30.21	108.8
0.50	6.00	0.1524	0.1195	497.5	0.7162	31.39	113.0
0.51	6.12	0.1554	0.1256	516.4	0.7435	32.58	117.3
0.52	6.24	0.1585	0.1318	535.7	0.7713	33.80	121.7
0.53	6.36	0.1615	0.1382	555.3	0.7995	35.03	126.1
0.54	6.48	0.1646	0.1449	575.2	0.8282	36.29	130.7
0.55	6.60	0.1676	0.1517	595.5	0.8573	37.57	135.3
0.56	6.72	0.1707	0.1586	616.0	0.8869	38.87	139.9
0.57	6.84	0.1737	0.1658	636.9	0.9170	40.18	144.7
0.58	6.96	0.1768	0.1732	658.1	0.9475	41.52	149.5
0.59	7.08	0.1798	0.1807	679.6	0.9785	42.88	154.4
0.60	7.20	0.1829	0.1885	701.4	1.010	44.25	159.3
0.61	7.32	0.1859	0.1965	723.6	1.042	45.65	164.3
0.62	7.44	0.1890	0.2046	746.0	1.074	47.06	169.4
0.63	7.56	0.1920	0.2130	768.7	1.107	48.50	174.6
0.64	7.68	0.1951	0.2215	791.7	1.140	49.95	179.8
0.65	7.80	0.1981	0.2303	815.0	1.173	51.42	185.1
0.66	7.92	0.2012	0.2392	838.7	1.207	52.91	190.5
0.67	8.04	0.2042	0.2484	862.6	1.242	54.42	195.9
0.68	8.16	0.2073	0.2578	886.8	1.277	55.95	201.4
0.69	8.28	0.2103	0.2673	911.2	1.312	57.49	207.0
0.70	8.40	0.2134	0.2771	936.0	1.348	59.05	212.6
0.71	8.52	0.2164	0.2871	961.0	1.384	60.63	218.3
0.72	8.64	0.2195	0.2974	986.4	1.420	62.23	224.0
0.73	8.76	0.2225	0.3078	1012	1.457	63.85	229.8
0.74	8.88	0.2256	0.3184	1038	1.494	65.48	235.7
0.75	9.00	0.2286	0.3293	1064	1.532	67.13	241.7
0.76	9.12	0.2316	0.3404	1090	1.570	68.79	247.7
0.77	9.24	0.2347	0.3517	1117	1.608	70.48	253.7
0.78	9.36	0.2377	0.3632	1144	1.647	72.18	259.8
0.79	9.48	0.2408	0.3750	1171	1.686	73.89	266.0
0.80	9.60	0.2438	0.3870	1199	1.726	75.63	272.3

Source: Addison, H., Hydraulic Measurements - A Manual for Engineers

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20-Inch Circular Weir for 24-Inch Pipe

2-Inches [5.08 cm] High

do = diameter of circular orifice

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.81	9.72	0.2469	0.3992	1226	1.766	77.37	278.5
0.82	9.84	0.2499	0.4116	1254	1.806	79.14	284.9
0.83	9.96	0.2530	0.4243	1283	1.847	80.92	291.3

Source: Addison, H., Hydraulic Measurements - A Manual for Engineers