OPENCHANNELFLOW

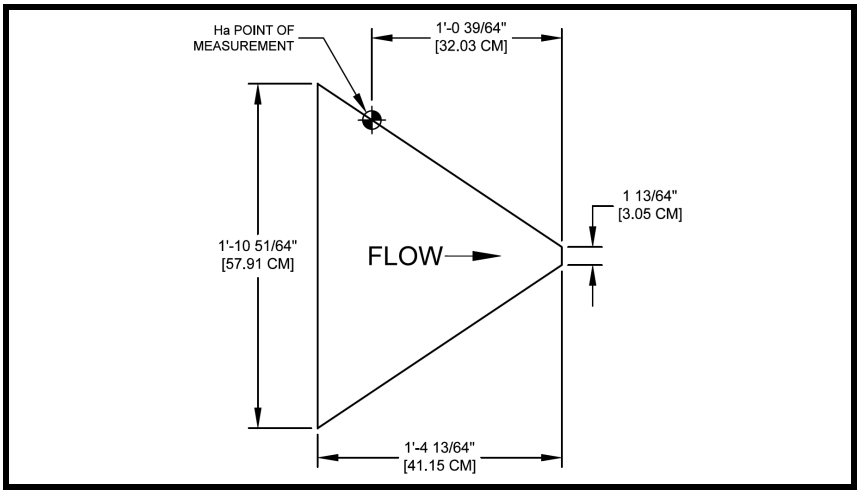
1.0-Foot H Flume Discharge Table

25-30% Submergence Transition ±2-5% Accuracy

Formulas (H in feet): $CFS = 0.000207 - 0.00523\ H_{ft}^{0.5} + 0.274445\ H_{ft}^{1.4} + 1.691257\ H_{ft}^{2.5}$

Formulas (H in meters): $L/S = 0.005861587 - 0.26824961\ H_{m}^{0.5} + 41.00900793\ H_{m}^{1.4} + 933.7209182\ H_{m}^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.01	0.12	0.0030	Excessive error due to fluid-flow properties and boundary conditions				
0.02	0.24	0.0061	0.0007	0.3142	0.0005	0.0198	0.0713
0.03	0.36	0.0091	0.0017	0.7630	0.0011	0.0481	0.1732
0.04	0.48	0.0122	0.0027	1.212	0.0017	0.0765	0.2751
0.05	0.60	0.0152	0.0040	1.795	0.0026	0.1133	0.4076
0.06	0.72	0.0183	0.0056	2.513	0.0036	0.1586	0.5706
0.07	0.84	0.0213	0.0075	3.366	0.0048	0.2124	0.7643
0.08	0.96	0.0244	0.0097	4.353	0.0063	0.2747	0.9884
0.09	1.08	0.0274	0.0122	5.475	0.0079	0.3455	1.243
0.10	1.20	0.0305	0.0150	6.732	0.0097	0.4248	1.529
0.11	1.32	0.0335	0.0179	8.034	0.0116	0.5069	1.824
0.12	1.44	0.0366	0.0211	9.470	0.0136	0.5976	2.150
0.13	1.56	0.0396	0.0246	11.04	0.0159	0.6967	2.507
0.14	1.68	0.0427	0.0284	12.75	0.0184	0.8043	2.894
0.15	1.80	0.0457	0.0324	14.54	0.0209	0.9176	3.302
0.16	1.92	0.0488	0.0367	16.47	0.0237	1.039	3.740
0.17	2.04	0.0518	0.0413	18.54	0.0267	1.170	4.208
0.18	2.16	0.0549	0.0462	20.73	0.0299	1.308	4.708
0.19	2.28	0.0579	0.0515	23.11	0.0333	1.458	5.248
0.20	2.40	0.0610	0.0571	25.63	0.0369	1.617	5.818
0.21	2.52	0.0640	0.0630	28.27	0.0407	1.784	6.420
0.22	2.64	0.0671	0.0692	31.06	0.0447	1.960	7.051
0.23	2.76	0.0701	0.0758	34.02	0.0490	2.147	7.724
0.24	2.88	0.0732	0.0827	37.12	0.0534	2.342	8.427
0.25	3.00	0.0762	0.0900	40.39	0.0582	2.549	9.171
0.26	3.12	0.0792	0.0976	43.80	0.0631	2.764	9.945
0.27	3.24	0.0823	0.1055	47.35	0.0682	2.988	10.75
0.28	3.36	0.0853	0.1138	51.07	0.0735	3.223	11.60
0.29	3.48	0.0884	0.1226	55.02	0.0792	3.472	12.49
0.30	3.60	0.0914	0.1320	59.24	0.0853	3.738	13.45



Curve fitted equation accurate to within 1.5%

Notes: Discharge is calculated to top of flume

Source: Field Manual for Research in Agricultural Hydrology, Agriculture Handbook No. 224, U.S. Department of Agriculture, February 1972

OPENCHANNELFLOW

1.0-Foot H Flume Discharge Table

25-30% Submergence Transition ±2-5% Accuracy

Formulas (H in feet): $CFS = 0.000207 - 0.00523\ H_{ft}^{0.5} + 0.274445\ H_{ft}^{1.4} + 1.691257\ H_{ft}^{2.5}$

Formulas (H in meters): $L/S = 0.005861587 - 0.26824961\ H_{m}^{0.5} + 41.00900793\ H_{m}^{1.4} + 933.7209182\ H_{m}^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.31	3.72	0.0945	0.1410	63.28	0.0911	3.993	14.37
0.32	3.84	0.0975	0.1510	67.77	0.0976	4.276	15.39
0.33	3.96	0.1006	0.1610	72.26	0.1041	4.560	16.41
0.34	4.08	0.1036	0.1720	77.19	0.1112	4.871	17.53
0.35	4.20	0.1067	0.1830	82.13	0.1183	5.183	18.65
0.36	4.32	0.1097	0.1940	87.07	0.1254	5.494	19.77
0.37	4.44	0.1128	0.2060	92.45	0.1331	5.834	20.99
0.38	4.56	0.1158	0.2180	97.84	0.1409	6.174	22.21
0.39	4.68	0.1189	0.2310	103.7	0.1493	6.542	23.54
0.40	4.80	0.1219	0.2440	109.5	0.1577	6.910	24.86
0.41	4.92	0.1250	0.2570	115.3	0.1661	7.278	26.19
0.42	5.04	0.1280	0.2710	121.6	0.1751	7.675	27.61
0.43	5.16	0.1311	0.2850	127.9	0.1842	8.071	29.04
0.44	5.28	0.1341	0.3000	134.6	0.1939	8.496	30.57
0.45	5.40	0.1372	0.3150	141.4	0.2036	8.921	32.10
0.46	5.52	0.1402	0.3310	148.6	0.2139	9.374	33.73
0.47	5.64	0.1433	0.3470	155.7	0.2243	9.827	35.36
0.48	5.76	0.1463	0.3640	163.4	0.2353	10.31	37.09
0.49	5.88	0.1494	0.3810	171.0	0.2462	10.79	38.82
0.50	6.00	0.1524	0.3980	178.6	0.2572	11.27	40.56
0.51	6.12	0.1554	0.4160	186.7	0.2689	11.78	42.39
0.52	6.24	0.1585	0.4340	194.8	0.2805	12.29	44.22
0.53	6.36	0.1615	0.4530	203.3	0.2928	12.83	46.16
0.54	6.48	0.1646	0.4720	211.8	0.3051	13.37	48.10
0.55	6.60	0.1676	0.4920	220.8	0.3180	13.93	50.13
0.56	6.72	0.1707	0.5120	229.8	0.3309	14.50	52.17
0.57	6.84	0.1737	0.5330	239.2	0.3445	15.09	54.31
0.58	6.96	0.1768	0.5540	248.6	0.3581	15.69	56.45
0.59	7.08	0.1798	0.5760	258.5	0.3723	16.31	58.69
0.60	7.20	0.1829	0.5980	268.4	0.3865	16.94	60.94
0.61	7.32	0.1859	0.6210	278.7	0.4014	17.59	63.28
0.62	7.44	0.1890	0.6440	289.0	0.4162	18.24	65.62
0.63	7.56	0.1920	0.6680	299.8	0.4317	18.92	68.07
0.64	7.68	0.1951	0.6920	310.6	0.4472	19.60	70.51
0.65	7.80	0.1981	0.7170	321.8	0.4634	20.31	73.06
0.66	7.92	0.2012	0.7430	333.5	0.4802	21.04	75.71
0.67	8.04	0.2042	0.7690	345.1	0.4970	21.78	78.36
0.68	8.16	0.2073	0.7960	357.2	0.5145	22.54	81.11
0.69	8.28	0.2103	0.8230	369.4	0.5319	23.31	83.86
0.70	8.40	0.2134	0.8510	381.9	0.5500	24.10	86.72
0.71	8.52	0.2164	0.8800	394.9	0.5687	24.92	89.67
0.72	8.64	0.2195	0.9090	408.0	0.5875	25.74	92.63
0.73	8.76	0.2225	0.9390	421.4	0.6069	26.59	95.68
0.74	8.88	0.2256	0.9690	434.9	0.6263	27.44	98.74
0.75	9.00	0.2286	1.000	448.8	0.6463	28.32	101.9
0.76	9.12	0.2316	1.031	462.7	0.6663	29.20	105.1
0.77	9.24	0.2347	1.063	477.1	0.6870	30.10	108.3
0.78	9.36	0.2377	1.096	491.9	0.7083	31.04	111.7
0.79	9.48	0.2408	1.129	506.7	0.7297	31.97	115.0
0.80	9.60	0.2438	1.160	520.6	0.7497	32.85	118.2

Source: Field Manual for Research in Agricultural Hydrology, Agriculture Handbook No. 224, U.S. Department of Agriculture, February 1972

OPENCHANNELFLOW

1.0-Foot H Flume Discharge Table

25-30% Submergence Transition ±2-5% Accuracy

Formulas (H in feet): $CFS = 0.000207 - 0.00523\ H_{ft}^{0.5} + 0.274445\ H_{ft}^{1.4} + 1.691257\ H_{ft}^{2.5}$

Formulas (H in meters): $L/S = 0.005861587 - 0.26824961\ H_{m}^{0.5} + 41.00900793\ H_{m}^{1.4} + 933.7209182\ H_{m}^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.81	9.72	0.2469	1.200	538.6	0.7756	33.98	122.3
0.82	9.84	0.2499	1.230	552.0	0.7949	34.83	125.3
0.83	9.96	0.2530	1.270	570.0	0.8208	35.97	129.4
0.84	10.08	0.2560	1.300	583.4	0.8402	36.82	132.5
0.85	10.20	0.2591	1.340	601.4	0.8660	37.95	136.5
0.86	10.32	0.2621	1.380	619.3	0.8919	39.08	140.6
0.87	10.44	0.2652	1.410	632.8	0.9113	39.93	143.7
0.88	10.56	0.2682	1.450	650.8	0.9371	41.06	147.8
0.89	10.68	0.2713	1.490	668.7	0.9630	42.20	151.8
0.90	10.80	0.2743	1.530	686.7	0.9888	43.33	155.9
0.91	10.92	0.2774	1.570	704.6	1.015	44.46	160.0
0.92	11.04	0.2804	1.610	722.6	1.041	45.60	164.1
0.93	11.16	0.2835	1.660	745.0	1.073	47.01	169.2
0.94	11.28	0.2865	1.700	763.0	1.099	48.14	173.2
0.95	11.40	0.2896	1.740	780.9	1.125	49.28	177.3
0.96	11.52	0.2926	1.780	798.9	1.150	50.41	181.4
0.97	11.64	0.2957	1.830	821.3	1.183	51.83	186.5
0.98	11.76	0.2987	1.870	839.3	1.209	52.96	190.6
0.99	11.88	0.3018	1.920	861.7	1.241	54.37	195.6

Source: Field Manual for Research in Agricultural Hydrology, Agriculture Handbook No. 224, U.S. Department of Agriculture, February 1972