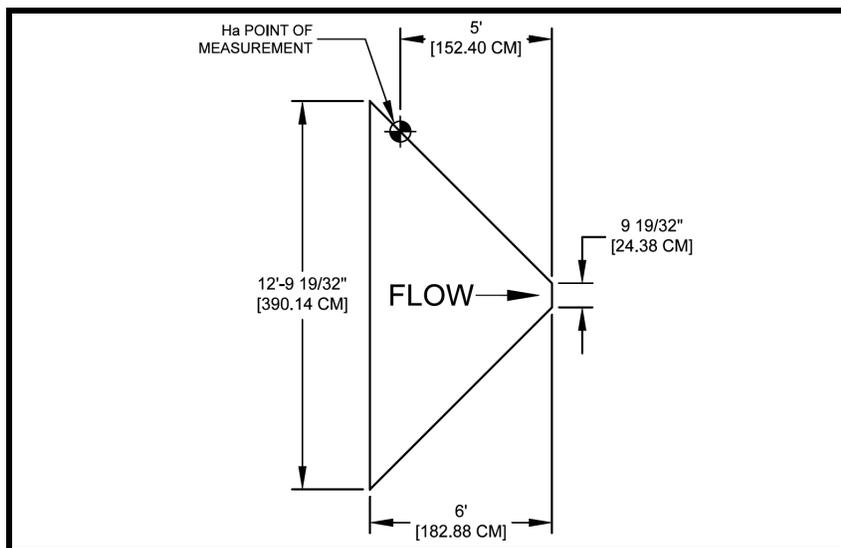


4.0-Foot HL Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00422 + 0.01489 H_f^{0.5} + 2.47817 H_f^{1.5} + 3.046828 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.11949709 + 0.763716378 H_m^{0.5} + 417.0167883 H_m^{1.5} + 1682.113977 H_m^{2.5}$

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	0.0050	2.244	0.0032	0.1416	0.5095	
0.03	0.36	0.0091	0.0120	5.386	0.0078	0.3398	1.223	
0.04	0.48	0.0122	0.0200	8.976	0.0129	0.5664	2.038	
0.05	0.60	0.0152	0.0290	13.02	0.0187	0.8213	2.955	
0.06	0.72	0.0183	0.0390	17.50	0.0252	1.104	3.974	
0.07	0.84	0.0213	0.0500	22.44	0.0323	1.416	5.095	
0.08	0.96	0.0244	0.0620	27.83	0.0401	1.756	6.318	
0.09	1.08	0.0274	0.0750	33.66	0.0485	2.124	7.643	
0.10	1.20	0.0305	0.0890	39.94	0.0575	2.520	9.069	
0.11	1.32	0.0335	0.1030	46.23	0.0666	2.917	10.50	
0.12	1.44	0.0366	0.1190	53.41	0.0769	3.370	12.13	
0.13	1.56	0.0396	0.1350	60.59	0.0873	3.823	13.76	
0.14	1.68	0.0427	0.1520	68.22	0.0982	4.305	15.49	
0.15	1.80	0.0457	0.1700	76.30	0.1099	4.814	17.32	
0.16	1.92	0.0488	0.1900	85.27	0.1228	5.381	19.36	
0.17	2.04	0.0518	0.2110	94.70	0.1364	5.976	21.50	
0.18	2.16	0.0549	0.2320	104.1	0.1499	6.570	23.64	
0.19	2.28	0.0579	0.2550	114.4	0.1648	7.222	25.98	
0.20	2.40	0.0610	0.2780	124.8	0.1797	7.873	28.33	
0.21	2.52	0.0640	0.3020	135.5	0.1952	8.553	30.77	
0.22	2.64	0.0671	0.3270	146.8	0.2113	9.261	33.32	
0.23	2.76	0.0701	0.3520	158.0	0.2275	9.969	35.87	
0.24	2.88	0.0732	0.3780	169.6	0.2443	10.70	38.52	
0.25	3.00	0.0762	0.4050	181.8	0.2618	11.47	41.27	
0.26	3.12	0.0792	0.4340	194.8	0.2805	12.29	44.22	
0.27	3.24	0.0823	0.4650	208.7	0.3005	13.17	47.38	
0.28	3.36	0.0853	0.4970	223.1	0.3212	14.08	50.64	
0.29	3.48	0.0884	0.5300	237.9	0.3425	15.01	54.01	
0.30	3.60	0.0914	0.5650	253.6	0.3652	16.00	57.57	



Curve fitted equation accurate to within 1.5%
 Discharge is calculated to top of flume

Notes:



4.0-Foot HL Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00422 + 0.01489 H_f^{0.5} + 2.47817 H_f^{1.5} + 3.046828 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.11949709 + 0.763716378 H_m^{0.5} + 417.0167883 H_m^{1.5} + 1682.113977 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.31	3.72	0.0945	0.6000	269.3	0.3878	16.99	61.14
0.32	3.84	0.0975	0.6350	285.0	0.4104	17.98	64.71
0.33	3.96	0.1006	0.6700	300.7	0.4330	18.97	68.27
0.34	4.08	0.1036	0.7050	316.4	0.4556	19.97	71.84
0.35	4.20	0.1067	0.7400	332.1	0.4783	20.96	75.41
0.36	4.32	0.1097	0.7800	350.1	0.5041	22.09	79.48
0.37	4.44	0.1128	0.8200	368.0	0.5300	23.22	83.56
0.38	4.56	0.1158	0.8600	386.0	0.5558	24.36	87.63
0.39	4.68	0.1189	0.9000	403.9	0.5817	25.49	91.71
0.40	4.80	0.1219	0.9400	421.9	0.6075	26.62	95.79
0.41	4.92	0.1250	0.9820	440.7	0.6347	27.81	100.1
0.42	5.04	0.1280	1.030	462.3	0.6657	29.17	105.0
0.43	5.16	0.1311	1.080	484.7	0.6980	30.59	110.1
0.44	5.28	0.1341	1.120	502.7	0.7239	31.72	114.1
0.45	5.40	0.1372	1.170	525.1	0.7562	33.13	119.2
0.46	5.52	0.1402	1.220	547.5	0.7885	34.55	124.3
0.47	5.64	0.1433	1.270	570.0	0.8208	35.97	129.4
0.48	5.76	0.1463	1.320	592.4	0.8531	37.38	134.5
0.49	5.88	0.1494	1.370	614.9	0.8854	38.80	139.6
0.50	6.00	0.1524	1.420	637.3	0.9177	40.21	144.7
0.51	6.12	0.1554	1.480	664.2	0.9565	41.91	150.8
0.52	6.24	0.1585	1.530	686.7	0.9888	43.33	155.9
0.53	6.36	0.1615	1.590	713.6	1.028	45.03	162.0
0.54	6.48	0.1646	1.640	736.0	1.060	46.44	167.1
0.55	6.60	0.1676	1.700	763.0	1.099	48.14	173.2
0.56	6.72	0.1707	1.760	789.9	1.137	49.84	179.3
0.57	6.84	0.1737	1.820	816.8	1.176	51.54	185.5
0.58	6.96	0.1768	1.880	843.7	1.215	53.24	191.6
0.59	7.08	0.1798	1.940	870.7	1.254	54.94	197.7
0.60	7.20	0.1829	2.010	902.1	1.299	56.92	204.8
0.61	7.32	0.1859	2.070	929.0	1.338	58.62	210.9
0.62	7.44	0.1890	2.140	960.4	1.383	60.60	218.1
0.63	7.56	0.1920	2.210	991.8	1.428	62.59	225.2
0.64	7.68	0.1951	2.280	1023	1.474	64.57	232.3
0.65	7.80	0.1981	2.350	1055	1.519	66.55	239.5
0.66	7.92	0.2012	2.420	1086	1.564	68.53	246.6
0.67	8.04	0.2042	2.490	1118	1.609	70.52	253.7
0.68	8.16	0.2073	2.560	1149	1.655	72.50	260.9
0.69	8.28	0.2103	2.640	1185	1.706	74.76	269.0
0.70	8.40	0.2134	2.710	1216	1.751	76.75	276.1
0.71	8.52	0.2164	2.790	1252	1.803	79.01	284.3
0.72	8.64	0.2195	2.870	1288	1.855	81.28	292.5
0.73	8.76	0.2225	2.950	1324	1.907	83.54	300.6
0.74	8.88	0.2256	3.030	1360	1.958	85.81	308.8
0.75	9.00	0.2286	3.110	1396	2.010	88.08	316.9
0.76	9.12	0.2316	3.190	1432	2.062	90.34	325.1
0.77	9.24	0.2347	3.280	1472	2.120	92.89	334.2
0.78	9.36	0.2377	3.360	1508	2.172	95.16	342.4
0.79	9.48	0.2408	3.440	1544	2.223	97.42	350.5
0.80	9.60	0.2438	3.530	1584	2.281	99.97	359.7



4.0-Foot HL Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00422 + 0.01489 H_f^{0.5} + 2.47817 H_f^{1.5} + 3.046828 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.11949709 + 0.763716378 H_m^{0.5} + 417.0167883 H_m^{1.5} + 1682.113977 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.81	9.72	0.2469	3.610	1620	2.333	102.2	367.9
0.82	9.84	0.2499	3.700	1661	2.391	104.8	377.0
0.83	9.96	0.2530	3.790	1701	2.449	107.3	386.2
0.84	10.08	0.2560	3.880	1741	2.508	109.9	395.4
0.85	10.20	0.2591	3.980	1786	2.572	112.7	405.6
0.86	10.32	0.2621	4.080	1831	2.637	115.5	415.8
0.87	10.44	0.2652	4.180	1876	2.702	118.4	425.9
0.88	10.56	0.2682	4.280	1921	2.766	121.2	436.1
0.89	10.68	0.2713	4.380	1966	2.831	124.0	446.3
0.90	10.80	0.2743	4.480	2011	2.895	126.9	456.5
0.91	10.92	0.2774	4.580	2056	2.960	129.7	466.7
0.92	11.04	0.2804	4.680	2100	3.025	132.5	476.9
0.93	11.16	0.2835	4.790	2150	3.096	135.7	488.1
0.94	11.28	0.2865	4.900	2199	3.167	138.8	499.3
0.95	11.40	0.2896	5.010	2248	3.238	141.9	510.5
0.96	11.52	0.2926	5.120	2298	3.309	145.0	521.7
0.97	11.64	0.2957	5.230	2347	3.380	148.1	532.9
0.98	11.76	0.2987	5.340	2397	3.451	151.2	544.1
0.99	11.88	0.3018	5.450	2446	3.522	154.3	555.4
1.00	12.00	0.3048	5.560	2495	3.593	157.5	566.6
1.01	12.12	0.3078	5.680	2549	3.671	160.9	578.8
1.02	12.24	0.3109	5.800	2603	3.749	164.3	591.0
1.03	12.36	0.3139	5.920	2657	3.826	167.7	603.2
1.04	12.48	0.3170	6.040	2711	3.904	171.1	615.5
1.05	12.60	0.3200	6.160	2765	3.981	174.5	627.7
1.06	12.72	0.3231	6.280	2818	4.059	177.8	639.9
1.07	12.84	0.3261	6.400	2872	4.136	181.2	652.2
1.08	12.96	0.3292	6.520	2926	4.214	184.6	664.4
1.09	13.08	0.3322	6.640	2980	4.291	188.0	676.6
1.10	13.20	0.3353	6.760	3034	4.369	191.4	688.8
1.11	13.32	0.3383	6.890	3092	4.453	195.1	702.1
1.12	13.44	0.3414	7.020	3151	4.537	198.8	715.3
1.13	13.56	0.3444	7.150	3209	4.621	202.5	728.6
1.14	13.68	0.3475	7.280	3267	4.705	206.2	741.8
1.15	13.80	0.3505	7.410	3326	4.789	209.9	755.1
1.16	13.92	0.3536	7.540	3384	4.873	213.5	768.3
1.17	14.04	0.3566	7.670	3442	4.957	217.2	781.6
1.18	14.16	0.3597	7.800	3501	5.041	220.9	794.8
1.19	14.28	0.3627	7.930	3559	5.125	224.6	808.1
1.20	14.40	0.3658	8.060	3617	5.209	228.3	821.3
1.21	14.52	0.3688	8.200	3680	5.300	232.2	835.6
1.22	14.64	0.3719	8.350	3747	5.397	236.5	850.9
1.23	14.76	0.3749	8.500	3815	5.494	240.7	866.2
1.24	14.88	0.3780	8.650	3882	5.590	245.0	881.4
1.25	15.00	0.3810	8.800	3949	5.687	249.2	896.7
1.26	15.12	0.3840	8.950	4017	5.784	253.5	912.0
1.27	15.24	0.3871	9.100	4084	5.881	257.7	927.3
1.28	15.36	0.3901	9.250	4151	5.978	262.0	942.6
1.29	15.48	0.3932	9.400	4219	6.075	266.2	957.9
1.30	15.60	0.3962	9.550	4286	6.172	270.5	973.1



4.0-Foot HL Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00422 + 0.01489 H_f^{0.5} + 2.47817 H_f^{1.5} + 3.046828 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.11949709 + 0.763716378 H_m^{0.5} + 417.0167883 H_m^{1.5} + 1682.113977 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.31	15.72	0.3993	9.70	4353	6.269	274.7	988.4
1.32	15.84	0.4023	9.90	4443	6.398	280.4	1009
1.33	15.96	0.4054	10.10	4533	6.528	286.0	1029
1.34	16.08	0.4084	10.20	4578	6.592	288.9	1039
1.35	16.20	0.4115	10.40	4668	6.722	294.5	1060
1.36	16.32	0.4145	10.50	4712	6.786	297.4	1070
1.37	16.44	0.4176	10.70	4802	6.915	303.0	1090
1.38	16.56	0.4206	10.80	4847	6.980	305.9	1101
1.39	16.68	0.4237	11.00	4937	7.109	311.5	1121
1.40	16.80	0.4267	11.20	5027	7.239	317.2	1141
1.41	16.92	0.4298	11.40	5116	7.368	322.8	1162
1.42	17.04	0.4328	11.60	5206	7.497	328.5	1182
1.43	17.16	0.4359	11.70	5251	7.562	331.3	1192
1.44	17.28	0.4389	11.90	5341	7.691	337.0	1213
1.45	17.40	0.4420	12.10	5430	7.820	342.7	1233
1.46	17.52	0.4450	12.30	5520	7.949	348.3	1253
1.47	17.64	0.4481	12.40	5565	8.014	351.2	1264
1.48	17.76	0.4511	12.60	5655	8.143	356.8	1284
1.49	17.88	0.4542	12.80	5745	8.273	362.5	1304
1.50	18.00	0.4572	13.00	5834	8.402	368.2	1325
1.51	18.12	0.4602	13.20	5924	8.531	373.8	1345
1.52	18.24	0.4633	13.30	5969	8.596	376.7	1355
1.53	18.36	0.4663	13.50	6059	8.725	382.3	1376
1.54	18.48	0.4694	13.70	6149	8.854	388.0	1396
1.55	18.60	0.4724	13.90	6238	8.984	393.6	1416
1.56	18.72	0.4755	14.10	6328	9.113	399.3	1437
1.57	18.84	0.4785	14.30	6418	9.242	405.0	1457
1.58	18.96	0.4816	14.50	6508	9.371	410.6	1478
1.59	19.08	0.4846	14.70	6597	9.501	416.3	1498
1.60	19.20	0.4877	14.90	6687	9.630	422.0	1518
1.61	19.32	0.4907	15.10	6777	9.759	427.6	1539
1.62	19.44	0.4938	15.30	6867	9.888	433.3	1559
1.63	19.56	0.4968	15.50	6956	10.02	439.0	1579
1.64	19.68	0.4999	15.70	7046	10.15	444.6	1600
1.65	19.80	0.5029	15.90	7136	10.28	450.3	1620
1.66	19.92	0.5060	16.20	7271	10.47	458.8	1651
1.67	20.04	0.5090	16.40	7360	10.60	464.4	1671
1.68	20.16	0.5121	16.60	7450	10.73	470.1	1692
1.69	20.28	0.5151	16.80	7540	10.86	475.8	1712
1.70	20.40	0.5182	17.00	7630	10.99	481.4	1732
1.71	20.52	0.5212	17.20	7719	11.12	487.1	1753
1.72	20.64	0.5243	17.40	7809	11.25	492.8	1773
1.73	20.76	0.5273	17.60	7899	11.37	498.4	1793
1.74	20.88	0.5304	17.80	7989	11.50	504.1	1814
1.75	21.00	0.5334	18.10	8123	11.70	512.6	1844
1.76	21.12	0.5364	18.30	8213	11.83	518.3	1865
1.77	21.24	0.5395	18.50	8303	11.96	523.9	1885
1.78	21.36	0.5425	18.70	8393	12.09	529.6	1906
1.79	21.48	0.5456	19.00	8527	12.28	538.1	1936
1.80	21.60	0.5486	19.20	8617	12.41	543.7	1956

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



4.0-Foot HL Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00422 + 0.01489 H_f^{0.5} + 2.47817 H_f^{1.5} + 3.046828 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.11949709 + 0.763716378 H_m^{0.5} + 417.0167883 H_m^{1.5} + 1682.113977 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
1.81	21.72	0.5517	19.40	8707	12.54	549.4	1977
1.82	21.84	0.5547	19.70	8841	12.73	557.9	2007
1.83	21.96	0.5578	19.90	8931	12.86	563.6	2028
1.84	22.08	0.5608	20.20	9066	13.06	572.1	2058
1.85	22.20	0.5639	20.40	9156	13.18	577.7	2079
1.86	22.32	0.5669	20.60	9245	13.31	583.4	2099
1.87	22.44	0.5700	20.90	9380	13.51	591.9	2130
1.88	22.56	0.5730	21.20	9515	13.70	600.4	2160
1.89	22.68	0.5761	21.40	9604	13.83	606.0	2181
1.90	22.80	0.5791	21.70	9739	14.02	614.5	2211
1.91	22.92	0.5822	21.90	9829	14.15	620.2	2232
1.92	23.04	0.5852	22.10	9918	14.28	625.9	2252
1.93	23.16	0.5883	22.40	10053	14.48	634.4	2283
1.94	23.28	0.5913	22.70	10188	14.67	642.9	2313
1.95	23.40	0.5944	23.00	10322	14.86	651.4	2344
1.96	23.52	0.5974	23.20	10412	14.99	657.0	2364
1.97	23.64	0.6005	23.40	10502	15.12	662.7	2384
1.98	23.76	0.6035	23.70	10637	15.32	671.2	2415
1.99	23.88	0.6066	24.00	10771	15.51	679.7	2446
2.00	24.00	0.6096	24.30	10906	15.71	688.2	2476
2.01	24.12	0.6126	24.50	10996	15.83	693.8	2497
2.02	24.24	0.6157	24.80	11130	16.03	702.3	2527
2.03	24.36	0.6187	25.00	11220	16.16	708.0	2548
2.04	24.48	0.6218	25.30	11355	16.35	716.5	2578
2.05	24.60	0.6248	25.60	11489	16.55	725.0	2609
2.06	24.72	0.6279	25.80	11579	16.67	730.7	2629
2.07	24.84	0.6309	26.10	11714	16.87	739.2	2660
2.08	24.96	0.6340	26.40	11848	17.06	747.6	2690
2.09	25.08	0.6370	26.70	11983	17.26	756.1	2721
2.10	25.20	0.6401	27.00	12118	17.45	764.6	2751
2.11	25.32	0.6431	27.30	12252	17.64	773.1	2782
2.12	25.44	0.6462	27.60	12387	17.84	781.6	2812
2.13	25.56	0.6492	27.90	12522	18.03	790.1	2843
2.14	25.68	0.6523	28.20	12656	18.23	798.6	2874
2.15	25.80	0.6553	28.50	12791	18.42	807.1	2904
2.16	25.92	0.6584	28.80	12925	18.61	815.6	2935
2.17	26.04	0.6614	29.10	13060	18.81	824.1	2965
2.18	26.16	0.6645	29.40	13195	19.00	832.6	2996
2.19	26.28	0.6675	29.70	13329	19.20	841.1	3026
2.20	26.40	0.6706	30.00	13464	19.39	849.6	3057
2.21	26.52	0.6736	30.30	13599	19.58	858.1	3088
2.22	26.64	0.6767	30.60	13733	19.78	866.6	3118
2.23	26.76	0.6797	30.90	13868	19.97	875.1	3149
2.24	26.88	0.6828	31.20	14003	20.16	883.6	3179
2.25	27.00	0.6858	31.50	14137	20.36	892.1	3210
2.26	27.12	0.6888	31.90	14317	20.62	903.4	3251
2.27	27.24	0.6919	32.20	14451	20.81	911.9	3281
2.28	27.36	0.6949	32.50	14586	21.00	920.4	3312
2.29	27.48	0.6980	32.80	14721	21.20	928.9	3342
2.30	27.60	0.7010	33.10	14855	21.39	937.4	3373



4.0-Foot HL Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00422 + 0.01489 H_f^{0.5} + 2.47817 H_f^{1.5} + 3.046828 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.11949709 + 0.763716378 H_m^{0.5} + 417.0167883 H_m^{1.5} + 1682.113977 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
2.31	27.72	0.7041	33.50	15035	21.65	948.7	3414
2.32	27.84	0.7071	33.80	15169	21.84	957.2	3444
2.33	27.96	0.7102	34.10	15304	22.04	965.7	3475
2.34	28.08	0.7132	34.50	15484	22.30	977.0	3516
2.35	28.20	0.7163	34.80	15618	22.49	985.5	3546
2.36	28.32	0.7193	35.10	15753	22.69	994.0	3577
2.37	28.44	0.7224	35.40	15888	22.88	1003	3607
2.38	28.56	0.7254	35.80	16067	23.14	1014	3648
2.39	28.68	0.7285	36.10	16202	23.33	1022	3679
2.40	28.80	0.7315	36.50	16381	23.59	1034	3719
2.41	28.92	0.7346	36.80	16516	23.78	1042	3750
2.42	29.04	0.7376	37.10	16650	23.98	1051	3780
2.43	29.16	0.7407	37.40	16785	24.17	1059	3811
2.44	29.28	0.7437	37.80	16965	24.43	1070	3852
2.45	29.40	0.7468	38.20	17144	24.69	1082	3893
2.46	29.52	0.7498	38.50	17279	24.88	1090	3923
2.47	29.64	0.7529	38.80	17413	25.08	1099	3954
2.48	29.76	0.7559	39.10	17548	25.27	1107	3984
2.49	29.88	0.7590	39.50	17728	25.53	1119	4025
2.50	30.00	0.7620	39.90	17907	25.79	1130	4066
2.51	30.12	0.7650	40.30	18087	26.05	1141	4107
2.52	30.24	0.7681	40.60	18221	26.24	1150	4137
2.53	30.36	0.7711	41.00	18401	26.50	1161	4178
2.54	30.48	0.7742	41.40	18580	26.76	1172	4219
2.55	30.60	0.7772	41.70	18715	26.95	1181	4249
2.56	30.72	0.7803	42.10	18894	27.21	1192	4290
2.57	30.84	0.7833	42.40	19029	27.40	1201	4321
2.58	30.96	0.7864	42.80	19209	27.66	1212	4361
2.59	31.08	0.7894	43.20	19388	27.92	1223	4402
2.60	31.20	0.7925	43.60	19568	28.18	1235	4443
2.61	31.32	0.7955	43.90	19702	28.37	1243	4473
2.62	31.44	0.7986	44.30	19882	28.63	1255	4514
2.63	31.56	0.8016	44.70	20061	28.89	1266	4555
2.64	31.68	0.8047	45.10	20241	29.15	1277	4596
2.65	31.80	0.8077	45.50	20420	29.41	1289	4636
2.66	31.92	0.8108	45.80	20555	29.60	1297	4667
2.67	32.04	0.8138	46.20	20735	29.86	1308	4708
2.68	32.16	0.8169	46.60	20914	30.12	1320	4749
2.69	32.28	0.8199	47.10	21138	30.44	1334	4799
2.70	32.40	0.8230	47.50	21318	30.70	1345	4840
2.71	32.52	0.8260	47.90	21498	30.96	1357	4881
2.72	32.64	0.8291	48.20	21632	31.15	1365	4912
2.73	32.76	0.8321	48.60	21812	31.41	1376	4952
2.74	32.88	0.8352	49.00	21991	31.67	1388	4993
2.75	33.00	0.8382	49.40	22171	31.93	1399	5034
2.76	33.12	0.8412	49.80	22350	32.19	1410	5075
2.77	33.24	0.8443	50.20	22530	32.44	1422	5115
2.78	33.36	0.8473	50.70	22754	32.77	1436	5166
2.79	33.48	0.8504	51.10	22934	33.03	1447	5207
2.80	33.60	0.8534	51.60	23158	33.35	1461	5258



4.0-Foot HL Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00422 + 0.01489 H_f^{0.5} + 2.47817 H_f^{1.5} + 3.046828 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.11949709 + 0.763716378 H_m^{0.5} + 417.0167883 H_m^{1.5} + 1682.113977 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
2.81	33.72	0.8565	52.00	23338	33.61	1473	5299
2.82	33.84	0.8595	52.40	23517	33.87	1484	5340
2.83	33.96	0.8626	52.80	23697	34.12	1495	5380
2.84	34.08	0.8656	53.30	23921	34.45	1509	5431
2.85	34.20	0.8687	53.70	24101	34.71	1521	5472
2.86	34.32	0.8717	54.10	24280	34.96	1532	5513
2.87	34.44	0.8748	54.50	24460	35.22	1543	5554
2.88	34.56	0.8778	54.90	24639	35.48	1555	5594
2.89	34.68	0.8809	55.40	24864	35.81	1569	5645
2.90	34.80	0.8839	55.90	25088	36.13	1583	5696
2.91	34.92	0.8870	56.30	25267	36.39	1594	5737
2.92	35.04	0.8900	56.70	25447	36.65	1606	5778
2.93	35.16	0.8931	57.20	25671	36.97	1620	5829
2.94	35.28	0.8961	57.60	25851	37.23	1631	5869
2.95	35.40	0.8992	58.10	26075	37.55	1645	5920
2.96	35.52	0.9022	58.60	26300	37.87	1660	5971
2.97	35.64	0.9053	59.10	26524	38.20	1674	6022
2.98	35.76	0.9083	59.50	26704	38.45	1685	6063
2.99	35.88	0.9114	59.90	26883	38.71	1696	6104
3.00	36.00	0.9144	60.30	27063	38.97	1708	6145
3.01	36.12	0.9174	60.80	27287	39.30	1722	6196
3.02	36.24	0.9205	61.30	27511	39.62	1736	6246
3.03	36.36	0.9235	61.80	27736	39.94	1750	6297
3.04	36.48	0.9266	62.30	27960	40.26	1764	6348
3.05	36.60	0.9296	62.80	28185	40.59	1778	6399
3.06	36.72	0.9327	63.20	28364	40.85	1790	6440
3.07	36.84	0.9357	63.70	28589	41.17	1804	6491
3.08	36.96	0.9388	64.10	28768	41.43	1815	6532
3.09	37.08	0.9418	64.60	28992	41.75	1829	6583
3.10	37.20	0.9449	65.10	29217	42.07	1844	6634
3.11	37.32	0.9479	65.60	29441	42.40	1858	6685
3.12	37.44	0.9510	66.10	29666	42.72	1872	6736
3.13	37.56	0.9540	66.60	29890	43.04	1886	6787
3.14	37.68	0.9571	67.10	30114	43.37	1900	6837
3.15	37.80	0.9601	67.50	30294	43.63	1912	6878
3.16	37.92	0.9632	68.00	30518	43.95	1926	6929
3.17	38.04	0.9662	68.50	30743	44.27	1940	6980
3.18	38.16	0.9693	69.00	30967	44.59	1954	7031
3.19	38.28	0.9723	69.50	31192	44.92	1968	7082
3.20	38.40	0.9754	70.00	31416	45.24	1982	7133
3.21	38.52	0.9784	70.50	31640	45.56	1997	7184
3.22	38.64	0.9815	71.00	31865	45.89	2011	7235
3.23	38.76	0.9845	71.50	32089	46.21	2025	7286
3.24	38.88	0.9876	72.00	32314	46.53	2039	7337
3.25	39.00	0.9906	72.50	32538	46.86	2053	7388
3.26	39.12	0.9936	73.00	32762	47.18	2067	7439
3.27	39.24	0.9967	73.50	32987	47.50	2082	7490
3.28	39.36	0.9997	74.00	33211	47.83	2096	7541
3.29	39.48	1.0028	74.50	33436	48.15	2110	7592
3.30	39.60	1.0058	75.00	33660	48.47	2124	7643



4.0-Foot HL Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00422 + 0.01489 H_f^{0.5} + 2.47817 H_f^{1.5} + 3.046828 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.11949709 + 0.763716378 H_m^{0.5} + 417.0167883 H_m^{1.5} + 1682.113977 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
3.31	39.72	1.0089	75.50	33884	48.80	2138	7693
3.32	39.84	1.0119	76.00	34109	49.12	2152	7744
3.33	39.96	1.0150	76.50	34333	49.44	2166	7795
3.34	40.08	1.0180	77.00	34558	49.77	2181	7846
3.35	40.20	1.0211	77.60	34827	50.15	2198	7907
3.36	40.32	1.0241	78.20	35096	50.54	2215	7969
3.37	40.44	1.0272	78.70	35321	50.86	2229	8020
3.38	40.56	1.0302	79.30	35590	51.25	2246	8081
3.39	40.68	1.0333	79.90	35859	51.64	2263	8142
3.40	40.80	1.0363	80.50	36128	52.03	2280	8203
3.41	40.92	1.0394	80.90	36308	52.29	2291	8244
3.42	41.04	1.0424	81.50	36577	52.67	2308	8305
3.43	41.16	1.0455	82.00	36802	53.00	2322	8356
3.44	41.28	1.0485	82.60	37071	53.38	2339	8417
3.45	41.40	1.0516	83.10	37295	53.71	2353	8468
3.46	41.52	1.0546	83.60	37520	54.03	2368	8519
3.47	41.64	1.0577	84.20	37789	54.42	2385	8580
3.48	41.76	1.0607	84.80	38058	54.81	2402	8641
3.49	41.88	1.0638	85.30	38283	55.13	2416	8692
3.50	42.00	1.0668	85.90	38552	55.52	2433	8753
3.51	42.12	1.0698	86.50	38821	55.90	2450	8814
3.52	42.24	1.0729	87.10	39090	56.29	2467	8875
3.53	42.36	1.0759	87.70	39360	56.68	2484	8937
3.54	42.48	1.0790	88.30	39629	57.07	2501	8998
3.55	42.60	1.0820	88.90	39898	57.46	2518	9059
3.56	42.72	1.0851	89.50	40168	57.84	2535	9120
3.57	42.84	1.0881	90.10	40437	58.23	2552	9181
3.58	42.96	1.0912	90.70	40706	58.62	2569	9242
3.59	43.08	1.0942	91.30	40975	59.01	2586	9303
3.60	43.20	1.0973	91.90	41245	59.39	2603	9365
3.61	43.32	1.1003	92.50	41514	59.78	2620	9426
3.62	43.44	1.1034	93.10	41783	60.17	2637	9487
3.63	43.56	1.1064	93.70	42053	60.56	2654	9548
3.64	43.68	1.1095	94.30	42322	60.95	2671	9609
3.65	43.80	1.1125	94.90	42591	61.33	2688	9670
3.66	43.92	1.1156	95.50	42860	61.72	2705	9731
3.67	44.04	1.1186	96.10	43130	62.11	2722	9793
3.68	44.16	1.1217	96.70	43399	62.50	2739	9854
3.69	44.28	1.1247	97.40	43713	62.95	2758	9925
3.70	44.40	1.1278	98.00	43982	63.34	2775	9986
3.71	44.52	1.1308	98.60	44252	63.73	2792	10047
3.72	44.64	1.1339	99.20	44521	64.11	2809	10108
3.73	44.76	1.1369	99.80	44790	64.50	2826	10170
3.74	44.88	1.1400	100.4	45060	64.89	2843	10231
3.75	45.00	1.1430	101.1	45374	65.34	2863	10302
3.76	45.12	1.1460	101.7	45643	65.73	2880	10363
3.77	45.24	1.1491	102.4	45957	66.18	2900	10435
3.78	45.36	1.1521	103.0	46226	66.57	2917	10496
3.79	45.48	1.1552	103.6	46496	66.96	2934	10557
3.80	45.60	1.1582	104.3	46810	67.41	2954	10628

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



4.0-Foot HL Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00422 + 0.01489 H_f^{0.5} + 2.47817 H_f^{1.5} + 3.046828 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.11949709 + 0.763716378 H_m^{0.5} + 417.0167883 H_m^{1.5} + 1682.113977 H_m^{2.5}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
3.81	45.72	1.1613	104.9	47079	67.80	2971	10689
3.82	45.84	1.1643	105.6	47393	68.25	2991	10761
3.83	45.96	1.1674	106.2	47663	68.64	3008	10822
3.84	46.08	1.1704	106.8	47932	69.02	3025	10883
3.85	46.20	1.1735	107.5	48246	69.48	3044	10954
3.86	46.32	1.1765	108.1	48515	69.87	3061	11015
3.87	46.44	1.1796	108.8	48829	70.32	3081	11087
3.88	46.56	1.1826	109.4	49099	70.71	3098	11148
3.89	46.68	1.1857	110.0	49368	71.09	3115	11209
3.90	46.80	1.1887	110.7	49682	71.55	3135	11280
3.91	46.92	1.1918	111.3	49951	71.93	3152	11341
3.92	47.04	1.1948	112.0	50266	72.39	3172	11413
3.93	47.16	1.1979	112.6	50535	72.77	3189	11474
3.94	47.28	1.2009	113.2	50804	73.16	3206	11535
3.95	47.40	1.2040	113.9	51118	73.61	3226	11606
3.96	47.52	1.2070	114.5	51388	74.00	3243	11668
3.97	47.64	1.2101	115.2	51702	74.45	3262	11739
3.98	47.76	1.2131	115.8	51971	74.84	3279	11800
3.99	47.88	1.2162	116.4	52240	75.23	3296	11861
4.00	48.00	1.2192	117.1	52554	75.68	3316	11932