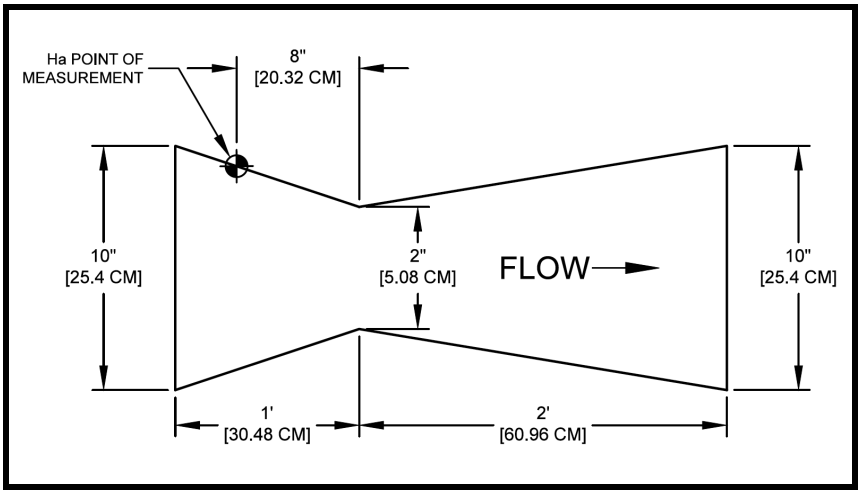
36-Inch L x 2-Inch W Cutthroat Flume Discharge Table

65% Submergence Transition ±3% Accuracy

Formulas (H in feet): CFS = 0.719 $H_{ft.}^{1.84}$ GPM = 322.7 $H_{ft.}^{1.84}$ MGD = 0.4647 $H_{ft.}^{1.84}$

Formulas (H in meters): L/S = 181.2 $H_m^{1.84}$ M3/HR = 652.1 $H_m^{1.84}$

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					
0.03	0.36	0.0091					
0.04	0.48	0.0122					
0.05	0.60	0.0152	0.0029	1.303	0.0019	0.0822	0.2958
0.06	0.72	0.0183	0.0041	1.822	0.0026	0.1150	0.4137
0.07	0.84	0.0213	0.0054	2.420	0.0035	0.1527	0.5494
0.08	0.96	0.0244	0.0069	3.094	0.0045	0.1952	0.7024
0.09	1.08	0.0274	0.0086	3.842	0.0055	0.2425	0.8724
0.10	1.20	0.0305	0.0104	4.664	0.0067	0.2943	1.059
0.11	1.32	0.0335	0.0124	5.558	0.0080	0.3507	1.262
0.12	1.44	0.0366	0.0145	6.523	0.0094	0.4116	1.481
0.13	1.56	0.0396	0.0168	7.559	0.0109	0.4770	1.716
0.14	1.68	0.0427	0.0193	8.663	0.0125	0.5466	1.967
0.15	1.80	0.0457	0.0219	9.835	0.0142	0.6206	2.233
0.16	1.92	0.0488	0.0247	11.08	0.0159	0.6989	2.515
0.17	2.04	0.0518	0.0276	12.38	0.0178	0.7814	2.811
0.18	2.16	0.0549	0.0306	13.76	0.0198	0.8680	3.123
0.19	2.28	0.0579	0.0339	15.19	0.0219	0.9588	3.450
0.20	2.40	0.0610	0.0372	16.70	0.0240	1.054	3.791
0.21	2.52	0.0640	0.0407	18.27	0.0263	1.153	4.148
0.22	2.64	0.0671	0.0443	19.90	0.0287	1.256	4.518
0.23	2.76	0.0701	0.0481	21.60	0.0311	1.363	4.903
0.24	2.88	0.0732	0.0520	23.35	0.0336	1.474	5.303
0.25	3.00	0.0762	0.0561	25.18	0.0363	1.589	5.716
0.26	3.12	0.0792	0.0603	27.06	0.0390	1.708	6.144
0.27	3.24	0.0823	0.0646	29.01	0.0418	1.830	6.586
0.28	3.36	0.0853	0.0691	31.01	0.0447	1.957	7.042
0.29	3.48	0.0884	0.0737	33.08	0.0476	2.088	7.511
0.30	3.60	0.0914	0.0785	35.21	0.0507	2.222	7.995



Notes: Discharge is calculated to top of flume

Not suitable for use on unscreened sanitary flows

Sources: Cutthroat Flume Discharge Relations, Water Management Technical Paper No. 16, Colorado State University, AER71-72RSB6, March 1972

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Formulas (H in meters): L/S = 181.2 $H_m^{1.84}$ M3/HR = 652.1 $H_m^{1.84}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.31	3.72	0.0945	0.0833	37.40	0.0539	2.360	8.492
0.32	3.84	0.0975	0.0883	39.65	0.0571	2.502	9.003
0.33	3.96	0.1006	0.0935	41.96	0.0604	2.648	9.527
0.34	4.08	0.1036	0.0988	44.33	0.0638	2.797	10.07
0.35	4.20	0.1067	0.1042	46.76	0.0673	2.951	10.62
0.36	4.32	0.1097	0.1097	49.25	0.0709	3.108	11.18
0.37	4.44	0.1128	0.1154	51.79	0.0746	3.268	11.76
0.38	4.56	0.1158	0.1212	54.40	0.0783	3.433	12.35
0.39	4.68	0.1189	0.1271	57.06	0.0822	3.601	12.96
0.40	4.80	0.1219	0.1332	59.78	0.0861	3.772	13.57
0.41	4.92	0.1250	0.1394	62.56	0.0901	3.948	14.20
0.42	5.04	0.1280	0.1457	65.40	0.0942	4.127	14.85
0.43	5.16	0.1311	0.1522	68.29	0.0983	4.309	15.51
0.44	5.28	0.1341	0.1587	71.24	0.1026	4.495	16.18
0.45	5.40	0.1372	0.1654	74.25	0.1069	4.685	16.86
0.46	5.52	0.1402	0.1723	77.31	0.1113	4.879	17.55
0.47	5.64	0.1433	0.1792	80.43	0.1158	5.076	18.26
0.48	5.76	0.1463	0.1863	83.61	0.1204	5.276	18.98
0.49	5.88	0.1494	0.1935	86.84	0.1251	5.480	19.72
0.50	6.00	0.1524	0.2008	90.13	0.1298	5.688	20.46
0.51	6.12	0.1554	0.2083	93.48	0.1346	5.899	21.22
0.52	6.24	0.1585	0.2159	96.88	0.1395	6.113	22.00
0.53	6.36	0.1615	0.2236	100.3	0.1445	6.331	22.78
0.54	6.48	0.1646	0.2314	103.8	0.1495	6.553	23.58
0.55	6.60	0.1676	0.2393	107.4	0.1547	6.778	24.39
0.56	6.72	0.1707	0.2474	111.0	0.1599	7.006	25.21
0.57	6.84	0.1737	0.2556	114.7	0.1652	7.238	26.04
0.58	6.96	0.1768	0.2639	118.4	0.1706	7.474	26.89
0.59	7.08	0.1798	0.2723	122.2	0.1760	7.712	27.75
0.60	7.20	0.1829	0.2809	126.1	0.1815	7.955	28.62
0.61	7.32	0.1859	0.2896	130.0	0.1871	8.200	29.51
0.62	7.44	0.1890	0.2984	133.9	0.1928	8.449	30.40
0.63	7.56	0.1920	0.3073	137.9	0.1986	8.702	31.31
0.64	7.68	0.1951	0.3163	142.0	0.2044	8.958	32.23
0.65	7.80	0.1981	0.3255	146.1	0.2103	9.217	33.16
0.66	7.92	0.2012	0.3347	150.2	0.2163	9.479	34.11
0.67	8.04	0.2042	0.3441	154.4	0.2224	9.745	35.07
0.68	8.16	0.2073	0.3536	158.7	0.2285	10.01	36.03
0.69	8.28	0.2103	0.3633	163.0	0.2348	10.29	37.02
0.70	8.40	0.2134	0.3730	167.4	0.2411	10.56	38.01
0.71	8.52	0.2164	0.3829	171.8	0.2474	10.84	39.01
0.72	8.64	0.2195	0.3928	176.3	0.2539	11.13	40.03
0.73	8.76	0.2225	0.4029	180.8	0.2604	11.41	41.06
0.74	8.88	0.2256	0.4132	185.4	0.2670	11.70	42.10
0.75	9.00	0.2286	0.4235	190.1	0.2737	11.99	43.15
0.76	9.12	0.2316	0.4339	194.8	0.2805	12.29	44.22
0.77	9.24	0.2347	0.4445	199.5	0.2873	12.59	45.29
0.78	9.36	0.2377	0.4552	204.3	0.2942	12.89	46.38
0.79	9.48	0.2408	0.4660	209.1	0.3012	13.20	47.48
0.80	9.60	0.2438	0.4769	214.0	0.3082	13.51	48.59

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Formulas (H in meters): L/S = 181.2 $H_{m}^{1.84}$ M3/HR = 652.1 $H_{m}^{1.84}$

FEET	INCHES	METERS	CFS	GPM	MGD	L/S	M3/HR
0.81	9.72	0.2469	0.4879	219.0	0.3153	13.82	49.72
0.82	9.84	0.2499	0.4991	224.0	0.3225	14.13	50.85
0.83	9.96	0.2530	0.5103	229.0	0.3298	14.45	52.00
0.84	10.08	0.2560	0.5217	234.1	0.3372	14.77	53.16
0.85	10.20	0.2591	0.5332	239.3	0.3446	15.10	54.33
0.86	10.32	0.2621	0.5448	244.5	0.3521	15.43	55.51
0.87	10.44	0.2652	0.5565	249.7	0.3596	15.76	56.70
0.88	10.56	0.2682	0.5683	255.1	0.3673	16.09	57.91
0.89	10.68	0.2713	0.5802	260.4	0.3750	16.43	59.13
0.90	10.80	0.2743	0.5923	265.8	0.3828	16.77	60.35
0.91	10.92	0.2774	0.6045	271.3	0.3907	17.12	61.59
0.92	11.04	0.2804	0.6167	276.8	0.3986	17.47	62.85
0.93	11.16	0.2835	0.6291	282.4	0.4066	17.82	64.11
0.94	11.28	0.2865	0.6416	288.0	0.4147	18.17	65.38
0.95	11.40	0.2896	0.6542	293.6	0.4228	18.53	66.67
0.96	11.52	0.2926	0.6670	299.3	0.4311	18.89	67.96
0.97	11.64	0.2957	0.6798	305.1	0.4394	19.25	69.27
0.98	11.76	0.2987	0.6928	310.9	0.4477	19.62	70.59
0.99	11.88	0.3018	0.7058	316.8	0.4562	19.99	71.92
1.00	12.00	0.3048	0.7190	322.7	0.4647	20.36	73.27

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