

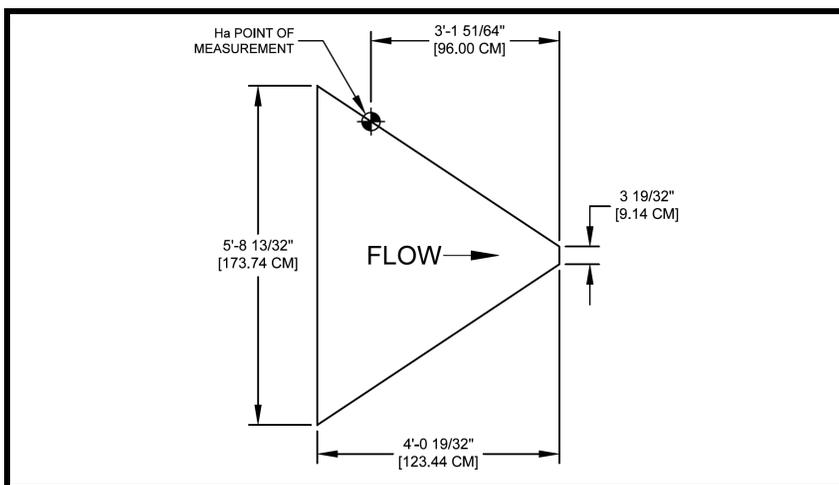


3.0-Foot H Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00036 - 0.00228 H_f^{0.4} + 0.95356 H_f^{1.5} + 1.614733 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.01019406 - 0.10384217 H_m^{0.4} + 160.4613601 H_m^{1.5} + 891.4730165 H_m^{2.5}$

| 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 | 0.0021 | 0.9425 | 0.0014 | 0.0595 | 0.2140 | |
| 0.03 | 0.36 | 0.0091 | 0.0045 | 2.020 | 0.0029 | 0.1274 | 0.4586 | |
| 0.04 | 0.48 | 0.0122 | 0.0073 | 3.276 | 0.0047 | 0.2067 | 0.7439 | |
| 0.05 | 0.60 | 0.0152 | 0.0105 | 4.712 | 0.0068 | 0.2974 | 1.070 | |
| 0.06 | 0.72 | 0.0183 | 0.0143 | 6.418 | 0.0092 | 0.4050 | 1.457 | |
| 0.07 | 0.84 | 0.0213 | 0.0186 | 8.348 | 0.0120 | 0.5268 | 1.895 | |
| 0.08 | 0.96 | 0.0244 | 0.0234 | 10.50 | 0.0151 | 0.6627 | 2.384 | |
| 0.09 | 1.08 | 0.0274 | 0.0288 | 12.93 | 0.0186 | 0.8156 | 2.935 | |
| 0.10 | 1.20 | 0.0305 | 0.0347 | 15.57 | 0.0224 | 0.9827 | 3.536 | |
| 0.11 | 1.32 | 0.0335 | 0.0407 | 18.27 | 0.0263 | 1.153 | 4.147 | |
| 0.12 | 1.44 | 0.0366 | 0.0471 | 21.14 | 0.0304 | 1.334 | 4.799 | |
| 0.13 | 1.56 | 0.0396 | 0.0538 | 24.15 | 0.0348 | 1.524 | 5.482 | |
| 0.14 | 1.68 | 0.0427 | 0.0610 | 27.38 | 0.0394 | 1.728 | 6.216 | |
| 0.15 | 1.80 | 0.0457 | 0.0686 | 30.79 | 0.0443 | 1.943 | 6.990 | |
| 0.16 | 1.92 | 0.0488 | 0.0766 | 34.38 | 0.0495 | 2.169 | 7.806 | |
| 0.17 | 2.04 | 0.0518 | 0.0851 | 38.19 | 0.0550 | 2.410 | 8.672 | |
| 0.18 | 2.16 | 0.0549 | 0.0939 | 42.14 | 0.0607 | 2.659 | 9.568 | |
| 0.19 | 2.28 | 0.0579 | 0.1032 | 46.32 | 0.0667 | 2.923 | 10.52 | |
| 0.20 | 2.40 | 0.0610 | 0.1130 | 50.71 | 0.0730 | 3.200 | 11.51 | |
| 0.21 | 2.52 | 0.0640 | 0.1230 | 55.20 | 0.0795 | 3.483 | 12.53 | |
| 0.22 | 2.64 | 0.0671 | 0.1340 | 60.14 | 0.0866 | 3.795 | 13.65 | |
| 0.23 | 2.76 | 0.0701 | 0.1450 | 65.08 | 0.0937 | 4.106 | 14.78 | |
| 0.24 | 2.88 | 0.0732 | 0.1560 | 70.01 | 0.1008 | 4.418 | 15.90 | |
| 0.25 | 3.00 | 0.0762 | 0.1680 | 75.40 | 0.1086 | 4.758 | 17.12 | |
| 0.26 | 3.12 | 0.0792 | 0.1800 | 80.78 | 0.1163 | 5.098 | 18.34 | |
| 0.27 | 3.24 | 0.0823 | 0.1930 | 86.62 | 0.1247 | 5.466 | 19.67 | |
| 0.28 | 3.36 | 0.0853 | 0.2070 | 92.90 | 0.1338 | 5.862 | 21.09 | |
| 0.29 | 3.48 | 0.0884 | 0.2200 | 98.74 | 0.1422 | 6.230 | 22.42 | |
| 0.30 | 3.60 | 0.0914 | 0.2340 | 105.0 | 0.1512 | 6.627 | 23.84 | |



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



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

Formulas (H in feet): $CFS = -0.00036 - 0.00228 H_f^{0.4} + 0.95356 H_f^{1.5} + 1.614733 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.01019406 - 0.10384217 H_m^{0.4} + 160.4613601 H_m^{1.5} + 891.4730165 H_m^{2.5}$

| FEET | INCHES | METERS | CFS | GPM | MGD | L/S | M3/HR |
|------|--------|--------|--------|-------|--------|-------|-------|
| 0.31 | 3.72 | 0.0945 | 0.2490 | 111.8 | 0.1609 | 7.052 | 25.37 |
| 0.32 | 3.84 | 0.0975 | 0.2640 | 118.5 | 0.1706 | 7.476 | 26.90 |
| 0.33 | 3.96 | 0.1006 | 0.2800 | 125.7 | 0.1810 | 7.930 | 28.53 |
| 0.34 | 4.08 | 0.1036 | 0.2960 | 132.8 | 0.1913 | 8.383 | 30.16 |
| 0.35 | 4.20 | 0.1067 | 0.3120 | 140.0 | 0.2016 | 8.836 | 31.79 |
| 0.36 | 4.32 | 0.1097 | 0.3290 | 147.7 | 0.2126 | 9.317 | 33.53 |
| 0.37 | 4.44 | 0.1128 | 0.3470 | 155.7 | 0.2243 | 9.827 | 35.36 |
| 0.38 | 4.56 | 0.1158 | 0.3650 | 163.8 | 0.2359 | 10.34 | 37.19 |
| 0.39 | 4.68 | 0.1189 | 0.3830 | 171.9 | 0.2475 | 10.85 | 39.03 |
| 0.40 | 4.80 | 0.1219 | 0.4020 | 180.4 | 0.2598 | 11.38 | 40.96 |
| 0.41 | 4.92 | 0.1250 | 0.4210 | 188.9 | 0.2721 | 11.92 | 42.90 |
| 0.42 | 5.04 | 0.1280 | 0.4410 | 197.9 | 0.2850 | 12.49 | 44.94 |
| 0.43 | 5.16 | 0.1311 | 0.4620 | 207.3 | 0.2986 | 13.08 | 47.08 |
| 0.44 | 5.28 | 0.1341 | 0.4830 | 216.8 | 0.3122 | 13.68 | 49.22 |
| 0.45 | 5.40 | 0.1372 | 0.5040 | 226.2 | 0.3257 | 14.27 | 51.36 |
| 0.46 | 5.52 | 0.1402 | 0.5260 | 236.1 | 0.3400 | 14.90 | 53.60 |
| 0.47 | 5.64 | 0.1433 | 0.5490 | 246.4 | 0.3548 | 15.55 | 55.94 |
| 0.48 | 5.76 | 0.1463 | 0.5720 | 256.7 | 0.3697 | 16.20 | 58.29 |
| 0.49 | 5.88 | 0.1494 | 0.5960 | 267.5 | 0.3852 | 16.88 | 60.73 |
| 0.50 | 6.00 | 0.1524 | 0.6200 | 278.3 | 0.4007 | 17.56 | 63.18 |
| 0.51 | 6.12 | 0.1554 | 0.6440 | 289.0 | 0.4162 | 18.24 | 65.62 |
| 0.52 | 6.24 | 0.1585 | 0.6690 | 300.2 | 0.4324 | 18.95 | 68.17 |
| 0.53 | 6.36 | 0.1615 | 0.6950 | 311.9 | 0.4492 | 19.68 | 70.82 |
| 0.54 | 6.48 | 0.1646 | 0.7210 | 323.6 | 0.4660 | 20.42 | 73.47 |
| 0.55 | 6.60 | 0.1676 | 0.7480 | 335.7 | 0.4834 | 21.18 | 76.22 |
| 0.56 | 6.72 | 0.1707 | 0.7750 | 347.8 | 0.5009 | 21.95 | 78.97 |
| 0.57 | 6.84 | 0.1737 | 0.8030 | 360.4 | 0.5190 | 22.74 | 81.83 |
| 0.58 | 6.96 | 0.1768 | 0.8320 | 373.4 | 0.5377 | 23.56 | 84.78 |
| 0.59 | 7.08 | 0.1798 | 0.8610 | 386.4 | 0.5565 | 24.38 | 87.74 |
| 0.60 | 7.20 | 0.1829 | 0.8900 | 399.4 | 0.5752 | 25.20 | 90.69 |
| 0.61 | 7.32 | 0.1859 | 0.9200 | 412.9 | 0.5946 | 26.05 | 93.75 |
| 0.62 | 7.44 | 0.1890 | 0.9510 | 426.8 | 0.6146 | 26.93 | 96.91 |
| 0.63 | 7.56 | 0.1920 | 0.9820 | 440.7 | 0.6347 | 27.81 | 100.1 |
| 0.64 | 7.68 | 0.1951 | 1.014 | 455.1 | 0.6553 | 28.72 | 103.3 |
| 0.65 | 7.80 | 0.1981 | 1.047 | 469.9 | 0.6767 | 29.65 | 106.7 |
| 0.66 | 7.92 | 0.2012 | 1.080 | 484.7 | 0.6980 | 30.59 | 110.1 |
| 0.67 | 8.04 | 0.2042 | 1.113 | 499.5 | 0.7193 | 31.52 | 113.4 |
| 0.68 | 8.16 | 0.2073 | 1.147 | 514.8 | 0.7413 | 32.48 | 116.9 |
| 0.69 | 8.28 | 0.2103 | 1.182 | 530.5 | 0.7639 | 33.47 | 120.4 |
| 0.70 | 8.40 | 0.2134 | 1.220 | 547.5 | 0.7885 | 34.55 | 124.3 |
| 0.71 | 8.52 | 0.2164 | 1.250 | 561.0 | 0.8079 | 35.40 | 127.4 |
| 0.72 | 8.64 | 0.2195 | 1.290 | 579.0 | 0.8337 | 36.53 | 131.5 |
| 0.73 | 8.76 | 0.2225 | 1.330 | 596.9 | 0.8596 | 37.67 | 135.5 |
| 0.74 | 8.88 | 0.2256 | 1.360 | 610.4 | 0.8790 | 38.52 | 138.6 |
| 0.75 | 9.00 | 0.2286 | 1.400 | 628.3 | 0.9048 | 39.65 | 142.7 |
| 0.76 | 9.12 | 0.2316 | 1.440 | 646.3 | 0.9307 | 40.78 | 146.7 |
| 0.77 | 9.24 | 0.2347 | 1.480 | 664.2 | 0.9565 | 41.91 | 150.8 |
| 0.78 | 9.36 | 0.2377 | 1.520 | 682.2 | 0.9824 | 43.05 | 154.9 |
| 0.79 | 9.48 | 0.2408 | 1.560 | 700.1 | 1.008 | 44.18 | 159.0 |
| 0.80 | 9.60 | 0.2438 | 1.600 | 718.1 | 1.034 | 45.31 | 163.0 |

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 Formulas (H in meters): $L/S = -0.01019406 - 0.10384217 H_m^{0.4} + 160.4613601 H_m^{1.5} + 891.4730165 H_m^{2.5}$

| FEET | INCHES | METERS | CFS | GPM | MGD | L/S | M3/HR |
|------|--------|--------|-------|-------|-------|-------|-------|
| 0.81 | 9.72 | 0.2469 | 1.650 | 740.5 | 1.066 | 46.73 | 168.1 |
| 0.82 | 9.84 | 0.2499 | 1.690 | 758.5 | 1.092 | 47.86 | 172.2 |
| 0.83 | 9.96 | 0.2530 | 1.730 | 776.4 | 1.118 | 48.99 | 176.3 |
| 0.84 | 10.08 | 0.2560 | 1.780 | 798.9 | 1.150 | 50.41 | 181.4 |
| 0.85 | 10.20 | 0.2591 | 1.820 | 816.8 | 1.176 | 51.54 | 185.5 |
| 0.86 | 10.32 | 0.2621 | 1.860 | 834.8 | 1.202 | 52.68 | 189.5 |
| 0.87 | 10.44 | 0.2652 | 1.910 | 857.2 | 1.234 | 54.09 | 194.6 |
| 0.88 | 10.56 | 0.2682 | 1.960 | 879.6 | 1.267 | 55.51 | 199.7 |
| 0.89 | 10.68 | 0.2713 | 2.000 | 897.6 | 1.293 | 56.64 | 203.8 |
| 0.90 | 10.80 | 0.2743 | 2.050 | 920.0 | 1.325 | 58.06 | 208.9 |
| 0.91 | 10.92 | 0.2774 | 2.100 | 942.5 | 1.357 | 59.47 | 214.0 |
| 0.92 | 11.04 | 0.2804 | 2.150 | 964.9 | 1.390 | 60.89 | 219.1 |
| 0.93 | 11.16 | 0.2835 | 2.200 | 987.4 | 1.422 | 62.30 | 224.2 |
| 0.94 | 11.28 | 0.2865 | 2.250 | 1010 | 1.454 | 63.72 | 229.3 |
| 0.95 | 11.40 | 0.2896 | 2.300 | 1032 | 1.486 | 65.14 | 234.4 |
| 0.96 | 11.52 | 0.2926 | 2.350 | 1055 | 1.519 | 66.55 | 239.5 |
| 0.97 | 11.64 | 0.2957 | 2.410 | 1082 | 1.558 | 68.25 | 245.6 |
| 0.98 | 11.76 | 0.2987 | 2.460 | 1104 | 1.590 | 69.67 | 250.7 |
| 0.99 | 11.88 | 0.3018 | 2.510 | 1126 | 1.622 | 71.08 | 255.8 |
| 1.00 | 12.00 | 0.3048 | 2.570 | 1153 | 1.661 | 72.78 | 261.9 |
| 1.01 | 12.12 | 0.3078 | 2.620 | 1176 | 1.693 | 74.20 | 267.0 |
| 1.02 | 12.24 | 0.3109 | 2.680 | 1203 | 1.732 | 75.90 | 273.1 |
| 1.03 | 12.36 | 0.3139 | 2.730 | 1225 | 1.764 | 77.31 | 278.2 |
| 1.04 | 12.48 | 0.3170 | 2.790 | 1252 | 1.803 | 79.01 | 284.3 |
| 1.05 | 12.60 | 0.3200 | 2.850 | 1279 | 1.842 | 80.71 | 290.4 |
| 1.06 | 12.72 | 0.3231 | 2.910 | 1306 | 1.881 | 82.41 | 296.5 |
| 1.07 | 12.84 | 0.3261 | 2.970 | 1333 | 1.920 | 84.11 | 302.6 |
| 1.08 | 12.96 | 0.3292 | 3.030 | 1360 | 1.958 | 85.81 | 308.8 |
| 1.09 | 13.08 | 0.3322 | 3.090 | 1387 | 1.997 | 87.51 | 314.9 |
| 1.10 | 13.20 | 0.3353 | 3.150 | 1414 | 2.036 | 89.21 | 321.0 |
| 1.11 | 13.32 | 0.3383 | 3.210 | 1441 | 2.075 | 90.91 | 327.1 |
| 1.12 | 13.44 | 0.3414 | 3.270 | 1468 | 2.113 | 92.61 | 333.2 |
| 1.13 | 13.56 | 0.3444 | 3.340 | 1499 | 2.159 | 94.59 | 340.3 |
| 1.14 | 13.68 | 0.3475 | 3.400 | 1526 | 2.197 | 96.29 | 346.5 |
| 1.15 | 13.80 | 0.3505 | 3.460 | 1553 | 2.236 | 97.99 | 352.6 |
| 1.16 | 13.92 | 0.3536 | 3.530 | 1584 | 2.281 | 99.97 | 359.7 |
| 1.17 | 14.04 | 0.3566 | 3.600 | 1616 | 2.327 | 102.0 | 366.8 |
| 1.18 | 14.16 | 0.3597 | 3.660 | 1643 | 2.365 | 103.7 | 373.0 |
| 1.19 | 14.28 | 0.3627 | 3.730 | 1674 | 2.411 | 105.6 | 380.1 |
| 1.20 | 14.40 | 0.3658 | 3.800 | 1705 | 2.456 | 107.6 | 387.2 |
| 1.21 | 14.52 | 0.3688 | 3.870 | 1737 | 2.501 | 109.6 | 394.4 |
| 1.22 | 14.64 | 0.3719 | 3.940 | 1768 | 2.546 | 111.6 | 401.5 |
| 1.23 | 14.76 | 0.3749 | 4.010 | 1800 | 2.592 | 113.6 | 408.6 |
| 1.24 | 14.88 | 0.3780 | 4.080 | 1831 | 2.637 | 115.5 | 415.8 |
| 1.25 | 15.00 | 0.3810 | 4.150 | 1863 | 2.682 | 117.5 | 422.9 |
| 1.26 | 15.12 | 0.3840 | 4.230 | 1898 | 2.734 | 119.8 | 431.0 |
| 1.27 | 15.24 | 0.3871 | 4.300 | 1930 | 2.779 | 121.8 | 438.2 |
| 1.28 | 15.36 | 0.3901 | 4.370 | 1961 | 2.824 | 123.8 | 445.3 |
| 1.29 | 15.48 | 0.3932 | 4.450 | 1997 | 2.876 | 126.0 | 453.5 |
| 1.30 | 15.60 | 0.3962 | 4.530 | 2033 | 2.928 | 128.3 | 461.6 |



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| FEET | INCHES | METERS | CFS | GPM | MGD | L/S | M3/HR |
|------|--------|--------|-------|------|-------|-------|-------|
| 1.31 | 15.72 | 0.3993 | 4.600 | 2064 | 2.973 | 130.3 | 468.7 |
| 1.32 | 15.84 | 0.4023 | 4.680 | 2100 | 3.025 | 132.5 | 476.9 |
| 1.33 | 15.96 | 0.4054 | 4.760 | 2136 | 3.076 | 134.8 | 485.0 |
| 1.34 | 16.08 | 0.4084 | 4.840 | 2172 | 3.128 | 137.1 | 493.2 |
| 1.35 | 16.20 | 0.4115 | 4.920 | 2208 | 3.180 | 139.3 | 501.3 |
| 1.36 | 16.32 | 0.4145 | 5.000 | 2244 | 3.232 | 141.6 | 509.5 |
| 1.37 | 16.44 | 0.4176 | 5.080 | 2280 | 3.283 | 143.9 | 517.7 |
| 1.38 | 16.56 | 0.4206 | 5.160 | 2316 | 3.335 | 146.1 | 525.8 |
| 1.39 | 16.68 | 0.4237 | 5.240 | 2352 | 3.387 | 148.4 | 534.0 |
| 1.40 | 16.80 | 0.4267 | 5.330 | 2392 | 3.445 | 150.9 | 543.1 |
| 1.41 | 16.92 | 0.4298 | 5.410 | 2428 | 3.496 | 153.2 | 551.3 |
| 1.42 | 17.04 | 0.4328 | 5.500 | 2468 | 3.555 | 155.8 | 560.5 |
| 1.43 | 17.16 | 0.4359 | 5.580 | 2504 | 3.606 | 158.0 | 568.6 |
| 1.44 | 17.28 | 0.4389 | 5.670 | 2545 | 3.665 | 160.6 | 577.8 |
| 1.45 | 17.40 | 0.4420 | 5.760 | 2585 | 3.723 | 163.1 | 586.9 |
| 1.46 | 17.52 | 0.4450 | 5.840 | 2621 | 3.774 | 165.4 | 595.1 |
| 1.47 | 17.64 | 0.4481 | 5.930 | 2661 | 3.833 | 167.9 | 604.3 |
| 1.48 | 17.76 | 0.4511 | 6.020 | 2702 | 3.891 | 170.5 | 613.4 |
| 1.49 | 17.88 | 0.4542 | 6.110 | 2742 | 3.949 | 173.0 | 622.6 |
| 1.50 | 18.00 | 0.4572 | 6.200 | 2783 | 4.007 | 175.6 | 631.8 |
| 1.51 | 18.12 | 0.4602 | 6.300 | 2827 | 4.072 | 178.4 | 642.0 |
| 1.52 | 18.24 | 0.4633 | 6.390 | 2868 | 4.130 | 181.0 | 651.1 |
| 1.53 | 18.36 | 0.4663 | 6.480 | 2908 | 4.188 | 183.5 | 660.3 |
| 1.54 | 18.48 | 0.4694 | 6.580 | 2953 | 4.253 | 186.3 | 670.5 |
| 1.55 | 18.60 | 0.4724 | 6.670 | 2993 | 4.311 | 188.9 | 679.7 |
| 1.56 | 18.72 | 0.4755 | 6.770 | 3038 | 4.375 | 191.7 | 689.9 |
| 1.57 | 18.84 | 0.4785 | 6.870 | 3083 | 4.440 | 194.6 | 700.1 |
| 1.58 | 18.96 | 0.4816 | 6.960 | 3124 | 4.498 | 197.1 | 709.2 |
| 1.59 | 19.08 | 0.4846 | 7.060 | 3169 | 4.563 | 199.9 | 719.4 |
| 1.60 | 19.20 | 0.4877 | 7.160 | 3213 | 4.628 | 202.8 | 729.6 |
| 1.61 | 19.32 | 0.4907 | 7.260 | 3258 | 4.692 | 205.6 | 739.8 |
| 1.62 | 19.44 | 0.4938 | 7.360 | 3303 | 4.757 | 208.4 | 750.0 |
| 1.63 | 19.56 | 0.4968 | 7.470 | 3353 | 4.828 | 211.6 | 761.2 |
| 1.64 | 19.68 | 0.4999 | 7.570 | 3397 | 4.892 | 214.4 | 771.4 |
| 1.65 | 19.80 | 0.5029 | 7.670 | 3442 | 4.957 | 217.2 | 781.6 |
| 1.66 | 19.92 | 0.5060 | 7.780 | 3492 | 5.028 | 220.3 | 792.8 |
| 1.67 | 20.04 | 0.5090 | 7.880 | 3537 | 5.093 | 223.2 | 803.0 |
| 1.68 | 20.16 | 0.5121 | 7.990 | 3586 | 5.164 | 226.3 | 814.2 |
| 1.69 | 20.28 | 0.5151 | 8.100 | 3635 | 5.235 | 229.4 | 825.4 |
| 1.70 | 20.40 | 0.5182 | 8.200 | 3680 | 5.300 | 232.2 | 835.6 |
| 1.71 | 20.52 | 0.5212 | 8.310 | 3730 | 5.371 | 235.3 | 846.8 |
| 1.72 | 20.64 | 0.5243 | 8.420 | 3779 | 5.442 | 238.5 | 858.0 |
| 1.73 | 20.76 | 0.5273 | 8.530 | 3828 | 5.513 | 241.6 | 869.2 |
| 1.74 | 20.88 | 0.5304 | 8.640 | 3878 | 5.584 | 244.7 | 880.4 |
| 1.75 | 21.00 | 0.5334 | 8.750 | 3927 | 5.655 | 247.8 | 891.6 |
| 1.76 | 21.12 | 0.5364 | 8.870 | 3981 | 5.733 | 251.2 | 903.9 |
| 1.77 | 21.24 | 0.5395 | 8.980 | 4030 | 5.804 | 254.3 | 915.1 |
| 1.78 | 21.36 | 0.5425 | 9.100 | 4084 | 5.881 | 257.7 | 927.3 |
| 1.79 | 21.48 | 0.5456 | 9.210 | 4133 | 5.952 | 260.8 | 938.5 |
| 1.80 | 21.60 | 0.5486 | 9.330 | 4187 | 6.030 | 264.2 | 950.7 |

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| FEET | INCHES | METERS | CFS | GPM | MGD | L/S | M3/HR |
|------|--------|--------|-------|------|-------|-------|-------|
| 1.81 | 21.72 | 0.5517 | 9.450 | 4241 | 6.108 | 267.6 | 963.0 |
| 1.82 | 21.84 | 0.5547 | 9.560 | 4291 | 6.179 | 270.7 | 974.2 |
| 1.83 | 21.96 | 0.5578 | 9.680 | 4344 | 6.256 | 274.1 | 986.4 |
| 1.84 | 22.08 | 0.5608 | 9.800 | 4398 | 6.334 | 277.5 | 998.6 |
| 1.85 | 22.20 | 0.5639 | 9.920 | 4452 | 6.411 | 280.9 | 1011 |
| 1.86 | 22.32 | 0.5669 | 10.05 | 4510 | 6.495 | 284.6 | 1024 |
| 1.87 | 22.44 | 0.5700 | 10.17 | 4564 | 6.573 | 288.0 | 1036 |
| 1.88 | 22.56 | 0.5730 | 10.29 | 4618 | 6.650 | 291.4 | 1049 |
| 1.89 | 22.68 | 0.5761 | 10.41 | 4672 | 6.728 | 294.8 | 1061 |
| 1.90 | 22.80 | 0.5791 | 10.50 | 4712 | 6.786 | 297.4 | 1070 |
| 1.91 | 22.92 | 0.5822 | 10.70 | 4802 | 6.915 | 303.0 | 1090 |
| 1.92 | 23.04 | 0.5852 | 10.80 | 4847 | 6.980 | 305.9 | 1101 |
| 1.93 | 23.16 | 0.5883 | 10.90 | 4892 | 7.045 | 308.7 | 1111 |
| 1.94 | 23.28 | 0.5913 | 11.00 | 4937 | 7.109 | 311.5 | 1121 |
| 1.95 | 23.40 | 0.5944 | 11.20 | 5027 | 7.239 | 317.2 | 1141 |
| 1.96 | 23.52 | 0.5974 | 11.30 | 5071 | 7.303 | 320.0 | 1151 |
| 1.97 | 23.64 | 0.6005 | 11.40 | 5116 | 7.368 | 322.8 | 1162 |
| 1.98 | 23.76 | 0.6035 | 11.60 | 5206 | 7.497 | 328.5 | 1182 |
| 1.99 | 23.88 | 0.6066 | 11.70 | 5251 | 7.562 | 331.3 | 1192 |
| 2.00 | 24.00 | 0.6096 | 11.90 | 5341 | 7.691 | 337.0 | 1213 |
| 2.01 | 24.12 | 0.6126 | 12.00 | 5386 | 7.756 | 339.8 | 1223 |
| 2.02 | 24.24 | 0.6157 | 12.10 | 5430 | 7.820 | 342.7 | 1233 |
| 2.03 | 24.36 | 0.6187 | 12.30 | 5520 | 7.949 | 348.3 | 1253 |
| 2.04 | 24.48 | 0.6218 | 12.40 | 5565 | 8.014 | 351.2 | 1264 |
| 2.05 | 24.60 | 0.6248 | 12.60 | 5655 | 8.143 | 356.8 | 1284 |
| 2.06 | 24.72 | 0.6279 | 12.70 | 5700 | 8.208 | 359.7 | 1294 |
| 2.07 | 24.84 | 0.6309 | 12.80 | 5745 | 8.273 | 362.5 | 1304 |
| 2.08 | 24.96 | 0.6340 | 13.00 | 5834 | 8.402 | 368.2 | 1325 |
| 2.09 | 25.08 | 0.6370 | 13.10 | 5879 | 8.467 | 371.0 | 1335 |
| 2.10 | 25.20 | 0.6401 | 13.30 | 5969 | 8.596 | 376.7 | 1355 |
| 2.11 | 25.32 | 0.6431 | 13.40 | 6014 | 8.660 | 379.5 | 1365 |
| 2.12 | 25.44 | 0.6462 | 13.60 | 6104 | 8.790 | 385.2 | 1386 |
| 2.13 | 25.56 | 0.6492 | 13.70 | 6149 | 8.854 | 388.0 | 1396 |
| 2.14 | 25.68 | 0.6523 | 13.90 | 6238 | 8.984 | 393.6 | 1416 |
| 2.15 | 25.80 | 0.6553 | 14.00 | 6283 | 9.048 | 396.5 | 1427 |
| 2.16 | 25.92 | 0.6584 | 14.20 | 6373 | 9.177 | 402.1 | 1447 |
| 2.17 | 26.04 | 0.6614 | 14.30 | 6418 | 9.242 | 405.0 | 1457 |
| 2.18 | 26.16 | 0.6645 | 14.50 | 6508 | 9.371 | 410.6 | 1478 |
| 2.19 | 26.28 | 0.6675 | 14.60 | 6552 | 9.436 | 413.5 | 1488 |
| 2.20 | 26.40 | 0.6706 | 14.80 | 6642 | 9.565 | 419.1 | 1508 |
| 2.21 | 26.52 | 0.6736 | 14.90 | 6687 | 9.630 | 422.0 | 1518 |
| 2.22 | 26.64 | 0.6767 | 15.10 | 6777 | 9.759 | 427.6 | 1539 |
| 2.23 | 26.76 | 0.6797 | 15.30 | 6867 | 9.888 | 433.3 | 1559 |
| 2.24 | 26.88 | 0.6828 | 15.40 | 6912 | 9.953 | 436.1 | 1569 |
| 2.25 | 27.00 | 0.6858 | 15.60 | 7001 | 10.08 | 441.8 | 1590 |
| 2.26 | 27.12 | 0.6888 | 15.70 | 7046 | 10.15 | 444.6 | 1600 |
| 2.27 | 27.24 | 0.6919 | 15.90 | 7136 | 10.28 | 450.3 | 1620 |
| 2.28 | 27.36 | 0.6949 | 16.10 | 7226 | 10.41 | 456.0 | 1641 |
| 2.29 | 27.48 | 0.6980 | 16.20 | 7271 | 10.47 | 458.8 | 1651 |
| 2.30 | 27.60 | 0.7010 | 16.40 | 7360 | 10.60 | 464.4 | 1671 |

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



3.0-Foot H Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00036 - 0.00228 H_f^{0.4} + 0.95356 H_f^{1.5} + 1.614733 H_f^{2.5}$
 Formulas (H in meters): $L/S = -0.01019406 - 0.10384217 H_m^{0.4} + 160.4613601 H_m^{1.5} + 891.4730165 H_m^{2.5}$

| FEET | INCHES | METERS | CFS | GPM | MGD | L/S | M3/HR |
|------|--------|--------|-------|-------|-------|-------|-------|
| 2.31 | 27.72 | 0.7041 | 16.60 | 7450 | 10.73 | 470.1 | 1692 |
| 2.32 | 27.84 | 0.7071 | 16.70 | 7495 | 10.79 | 472.9 | 1702 |
| 2.33 | 27.96 | 0.7102 | 16.90 | 7585 | 10.92 | 478.6 | 1722 |
| 2.34 | 28.08 | 0.7132 | 17.10 | 7674 | 11.05 | 484.3 | 1742 |
| 2.35 | 28.20 | 0.7163 | 17.20 | 7719 | 11.12 | 487.1 | 1753 |
| 2.36 | 28.32 | 0.7193 | 17.40 | 7809 | 11.25 | 492.8 | 1773 |
| 2.37 | 28.44 | 0.7224 | 17.60 | 7899 | 11.37 | 498.4 | 1793 |
| 2.38 | 28.56 | 0.7254 | 17.80 | 7989 | 11.50 | 504.1 | 1814 |
| 2.39 | 28.68 | 0.7285 | 17.90 | 8034 | 11.57 | 506.9 | 1824 |
| 2.40 | 28.80 | 0.7315 | 18.10 | 8123 | 11.70 | 512.6 | 1844 |
| 2.41 | 28.92 | 0.7346 | 18.30 | 8213 | 11.83 | 518.3 | 1865 |
| 2.42 | 29.04 | 0.7376 | 18.50 | 8303 | 11.96 | 523.9 | 1885 |
| 2.43 | 29.16 | 0.7407 | 18.70 | 8393 | 12.09 | 529.6 | 1906 |
| 2.44 | 29.28 | 0.7437 | 18.80 | 8437 | 12.15 | 532.4 | 1916 |
| 2.45 | 29.40 | 0.7468 | 19.00 | 8527 | 12.28 | 538.1 | 1936 |
| 2.46 | 29.52 | 0.7498 | 19.20 | 8617 | 12.41 | 543.7 | 1956 |
| 2.47 | 29.64 | 0.7529 | 19.40 | 8707 | 12.54 | 549.4 | 1977 |
| 2.48 | 29.76 | 0.7559 | 19.60 | 8796 | 12.67 | 555.1 | 1997 |
| 2.49 | 29.88 | 0.7590 | 19.80 | 8886 | 12.80 | 560.7 | 2018 |
| 2.50 | 30.00 | 0.7620 | 19.90 | 8931 | 12.86 | 563.6 | 2028 |
| 2.51 | 30.12 | 0.7650 | 20.10 | 9021 | 12.99 | 569.2 | 2048 |
| 2.52 | 30.24 | 0.7681 | 20.30 | 9111 | 13.12 | 574.9 | 2069 |
| 2.53 | 30.36 | 0.7711 | 20.50 | 9200 | 13.25 | 580.6 | 2089 |
| 2.54 | 30.48 | 0.7742 | 20.70 | 9290 | 13.38 | 586.2 | 2109 |
| 2.55 | 30.60 | 0.7772 | 20.90 | 9380 | 13.51 | 591.9 | 2130 |
| 2.56 | 30.72 | 0.7803 | 21.10 | 9470 | 13.64 | 597.6 | 2150 |
| 2.57 | 30.84 | 0.7833 | 21.30 | 9559 | 13.77 | 603.2 | 2170 |
| 2.58 | 30.96 | 0.7864 | 21.50 | 9649 | 13.90 | 608.9 | 2191 |
| 2.59 | 31.08 | 0.7894 | 21.70 | 9739 | 14.02 | 614.5 | 2211 |
| 2.60 | 31.20 | 0.7925 | 21.90 | 9829 | 14.15 | 620.2 | 2232 |
| 2.61 | 31.32 | 0.7955 | 22.10 | 9918 | 14.28 | 625.9 | 2252 |
| 2.62 | 31.44 | 0.7986 | 22.30 | 10008 | 14.41 | 631.5 | 2272 |
| 2.63 | 31.56 | 0.8016 | 22.50 | 10098 | 14.54 | 637.2 | 2293 |
| 2.64 | 31.68 | 0.8047 | 22.70 | 10188 | 14.67 | 642.9 | 2313 |
| 2.65 | 31.80 | 0.8077 | 22.90 | 10278 | 14.80 | 648.5 | 2334 |
| 2.66 | 31.92 | 0.8108 | 23.10 | 10367 | 14.93 | 654.2 | 2354 |
| 2.67 | 32.04 | 0.8138 | 23.30 | 10457 | 15.06 | 659.9 | 2374 |
| 2.68 | 32.16 | 0.8169 | 23.50 | 10547 | 15.19 | 665.5 | 2395 |
| 2.69 | 32.28 | 0.8199 | 23.70 | 10637 | 15.32 | 671.2 | 2415 |
| 2.70 | 32.40 | 0.8230 | 23.90 | 10726 | 15.45 | 676.8 | 2435 |
| 2.71 | 32.52 | 0.8260 | 24.10 | 10816 | 15.58 | 682.5 | 2456 |
| 2.72 | 32.64 | 0.8291 | 24.30 | 10906 | 15.71 | 688.2 | 2476 |
| 2.73 | 32.76 | 0.8321 | 24.50 | 10996 | 15.83 | 693.8 | 2497 |
| 2.74 | 32.88 | 0.8352 | 24.70 | 11085 | 15.96 | 699.5 | 2517 |
| 2.75 | 33.00 | 0.8382 | 24.90 | 11175 | 16.09 | 705.2 | 2537 |
| 2.76 | 33.12 | 0.8412 | 25.20 | 11310 | 16.29 | 713.7 | 2568 |
| 2.77 | 33.24 | 0.8443 | 25.40 | 11400 | 16.42 | 719.3 | 2588 |
| 2.78 | 33.36 | 0.8473 | 25.60 | 11489 | 16.55 | 725.0 | 2609 |
| 2.79 | 33.48 | 0.8504 | 25.80 | 11579 | 16.67 | 730.7 | 2629 |
| 2.80 | 33.60 | 0.8534 | 26.00 | 11669 | 16.80 | 736.3 | 2649 |

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3.0-Foot H Flume Discharge Table

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

Formulas (H in feet): $CFS = -0.00036 - 0.00228 H_{ft}^{0.4} + 0.95356 H_{ft}^{1.5} + 1.614733 H_{ft}^{2.5}$
 Formulas (H in meters): $L/S = -0.01019406 - 0.10384217 H_m^{0.4} + 160.4613601 H_m^{1.5} + 891.4730165 H_m^{2.5}$

| FEET | INCHES | METERS | CFS | GPM | MGD | L/S | M3/HR |
|------|--------|--------|-------|-------|-------|-------|-------|
| 2.81 | 33.72 | 0.8565 | 26.20 | 11759 | 16.93 | 742.0 | 2670 |
| 2.82 | 33.84 | 0.8595 | 26.50 | 11893 | 17.13 | 750.5 | 2700 |
| 2.83 | 33.96 | 0.8626 | 26.70 | 11983 | 17.26 | 756.1 | 2721 |
| 2.84 | 34.08 | 0.8656 | 26.90 | 12073 | 17.39 | 761.8 | 2741 |
| 2.85 | 34.20 | 0.8687 | 27.10 | 12162 | 17.51 | 767.5 | 2761 |
| 2.86 | 34.32 | 0.8717 | 27.40 | 12297 | 17.71 | 776.0 | 2792 |
| 2.87 | 34.44 | 0.8748 | 27.60 | 12387 | 17.84 | 781.6 | 2812 |
| 2.88 | 34.56 | 0.8778 | 27.80 | 12477 | 17.97 | 787.3 | 2833 |
| 2.89 | 34.68 | 0.8809 | 28.00 | 12566 | 18.10 | 793.0 | 2853 |
| 2.90 | 34.80 | 0.8839 | 28.30 | 12701 | 18.29 | 801.5 | 2884 |
| 2.91 | 34.92 | 0.8870 | 28.50 | 12791 | 18.42 | 807.1 | 2904 |
| 2.92 | 35.04 | 0.8900 | 28.70 | 12881 | 18.55 | 812.8 | 2925 |
| 2.93 | 35.16 | 0.8931 | 28.90 | 12970 | 18.68 | 818.4 | 2945 |
| 2.94 | 35.28 | 0.8961 | 29.20 | 13105 | 18.87 | 826.9 | 2975 |
| 2.95 | 35.40 | 0.8992 | 29.40 | 13195 | 19.00 | 832.6 | 2996 |
| 2.96 | 35.52 | 0.9022 | 29.70 | 13329 | 19.20 | 841.1 | 3026 |
| 2.97 | 35.64 | 0.9053 | 29.90 | 13419 | 19.32 | 846.8 | 3047 |
| 2.98 | 35.76 | 0.9083 | 30.10 | 13509 | 19.45 | 852.4 | 3067 |
| 2.99 | 35.88 | 0.9114 | 30.40 | 13644 | 19.65 | 860.9 | 3098 |