

Silt Saver (SS-100A) Frame & Filter Discharge Analysis

Orifice only flow calculations

Head (ft)	Opening Area (SF)	Filter Area (SF)	Filter Flow (cfs)	Frame Flow (cfs)	Filtered Flow (cfs)
0.5	2.1	6	2	7	2
1	3.9	12	3	19	3
1.5	7	18	5	41	5
2	8	24	7	54	7
2.5	9.2	30	9	70	9
3	9.2			77	77

Due to narrow slot, a transition will occur between weir and orifice conditions.

Orifice flow will provide a more conservative estimate of flow, therefore the lesser of the orifice and weir flows will be used for each stage calculation.

Filter material allows 129 gpm/SF or 0.29 cfs/SF

Orifice Equation (O) = $Q=0.6A(2gh)^{0.5}$

P= feet perimeter

h= head in feet

Q= capacity in CFS

A=Free open area of frame

g=32.2 feet per second per second

