

Observations and Calculations:

Column1	Flow 1	Flow 2	Flow 3
Vol. Flow Rate, $Q$ ( $\text{m}^3/\text{s}$ )	0.001605	0.002454	0.003304
Velocity, $U$ ( $\text{m/s}$ )	1.276916	1.952935	2.628945
Gauge Reading, $H_{g_d}$ (m)	22.86	19.812	16.4592
Vertical distance, $Z_s$ (m)	0.21	0.188	0.17
Kinetic Head, $K$ (m)	0.083105	0.194391	0.352261
Total Head Generated, $H$ (m)	22.7331	19.81839	16.64146
Input Power, $P_{in}$ (W)	650	800	850
Output Power, $P_{out}$ (W)	356.7756	475.6967	537.7086
Efficiency, $\eta$	0.548886	0.594621	0.632598

Error Analysis:

Column1	Flow 1	Flow 2	Flow 3
$\Delta Q$ ( $\text{m}^3/\text{s}$ )	9.43894E-05	9.44E-05	9.44E-05
$\Delta U$ ( $\text{m/s}$ )	0.075112698	0.075113	0.075113
$\Delta H_{g_d}$ (m)	0.3048	0.3048	0.3048
$\Delta Z_s$ (m)	0.002	0.002	0.002
$\Delta K$ (m)	0.009777024	0.014953	0.020129
$\Delta H$ (m)	0.316577024	0.321753	0.326929
$\Delta P_{in}$ (W)	50	50	50
$\Delta P_{out}$ (W)	25.95518704	26.01896	25.92663
$\Delta \eta$	0.082153019	0.069688	0.067714

## Plots

