Pump Project data, ME120 001, Warren Gunn & Sean Lai

Constants:			Conversions:	color legend:
density	0.997	g/mL	1L = .001 m^3	measured
tubing diam	4.76E-03	m		derived
gravity acc	9.81	m/s^2		

Data Point	Head Height (in)	Δt (s)	Δm (g)	Current (A)	Voltage (V)	volume (L)	m Flow Rate (g/s)	V Flow Rate (L/min)	Power (W)
1	0	35.65	438	0.53	12.17	0.439	12.286	0.739	6.4501
2	14	37.33	368	0.53	12.17	0.369	9.858	0.593	6.4501
3	36	35.53	214	0.45	12.17	0.215	6.023	0.362	5.4765
4	30	26.73	202	0.47	12.17	0.203	7.557	0.455	5.7199
5	21	24.2	230	0.49	12.17	0.231	9.504	0.572	5.9633
6	8	26.69	309	0.49	12.17	0.310	11.577	0.697	5.9633
7	25	27.61	224	0.50	12.17	0.225	8.113	0.488	6.085
8	40	31.4	91	0.46	12.17	0.091	2.898	0.174	5.5982
9	5	26.81	292	0.52	12.17	0.293	10.891	0.655	6.3284
10	45	32.95	69	0.53	12.17	0.069	2.094	0.126	6.4501
11	37	36.78	115	0.55	12.17	0.115	3.127	0.188	6.6935
12	18	40.56	326	0.54	12.17	0.327	8.037	0.484	6.5718
13	28	31.76	188	0.54	12.17	0.189	5.919	0.356	6.5718
14	38	28.36	89	0.54	12.17	0.089	3.138	0.189	6.5718
15	12	24.89	239	0.55	12.17	0.240	9.602	0.578	6.6935
16	58	1	0	0.55	12.17	0	0.000	0	6.6935

Efficiency Calculations:

V Flow Rate (L/s)	Fluid velocity (m/s)	m Flow Rate (kg/s)	Head Height (m)	P_in	P_out	Effciency
0.0123	6.92E-01	0.012	0.000	6.4501	2.94E-03	0.046%
0.0099	5.55E-01	0.010	0.356	6.4501	3.59E-02	0.557%
0.0060	3.39E-01	0.006	0.914	5.4765	5.44E-02	0.993%
0.0076	4.25E-01	0.008	0.762	5.7199	5.72E-02	1.000%
0.0095	5.35E-01	0.010	0.533	5.9633	5.11E-02	0.857%
0.0116	6.52E-01	0.012	0.203	5.9633	2.55E-02	0.428%
0.0081	4.57E-01	0.008	0.635	6.085	5.14E-02	0.844%
0.0029	1.63E-01	0.003	1.016	5.5982	2.89E-02	0.517%
0.0109	6.13E-01	0.011	0.127	6.3284	1.56E-02	0.247%
0.0021	1.18E-01	0.002	1.143	6.4501	2.35E-02	0.364%
0.0031	1.76E-01	0.003	0.940	6.6935	2.89E-02	0.431%
0.0081	4.52E-01	0.008	0.457	6.5718	3.69E-02	0.561%
0.0059	3.33E-01	0.006	0.711	6.5718	4.16E-02	0.633%
0.0031	1.77E-01	0.003	0.965	6.5718	2.98E-02	0.453%
0.0096	5.41E-01	0.010	0.305	6.6935	3.01E-02	0.450%
0.0000	0.00E+00	0.000	1.473	6.6935	0.00E+00	0.000%