

Power-Pipe™ - Design Criteria

Commercial and Industrial Systems with moderately high flow (12 to 300 usgpm)

Preliminary design steps

- 1) Determine the total drain-water flow (gpm)
- 2) Determine the height available and subtract 12" for the top and bottom headers of the manifolded Pipe-Pipe units.
- 3) Based on the total flow and the Heat Exchange Effectiveness chart, determine the number of 4-unit-manifold required:
 - * We recommend that the flow per "4-pipe" manifolded Power-Pipe unit be between 12 usgpm and 40 usgpm
 - * Length to be as long as possible based on clearance available
 - * If the height is limited then more units should be considered (and vice versa)
- 4) Use the selected length and flow for the "4-pipe" manifolded Power-Pipe unit to determine the System Effectiveness
 - * Heat Exchange Effectiveness per "4-pipe" unit will be equal to the efficiency of the whole system
- 5) Use the pricing table to estimate total system costs

Notes:

Combination of 4-unit-manifold is used as a reference. Other types of manifold can be used.
For maximum effectiveness, design equal flow

We strongly recommend that you contact us to confirm design and also for any technical support or ordering:

RenewABILITY Energy Inc.

60 Baffin Place, Unit #2
Waterloo (Ontario) N2V 1Z7
Toll Free: 1 (877) 606-5559

Power-Pipe™ - Heat Exchange Effectiveness

Commercial and Industrial 4-unit-manifold (4 inches)

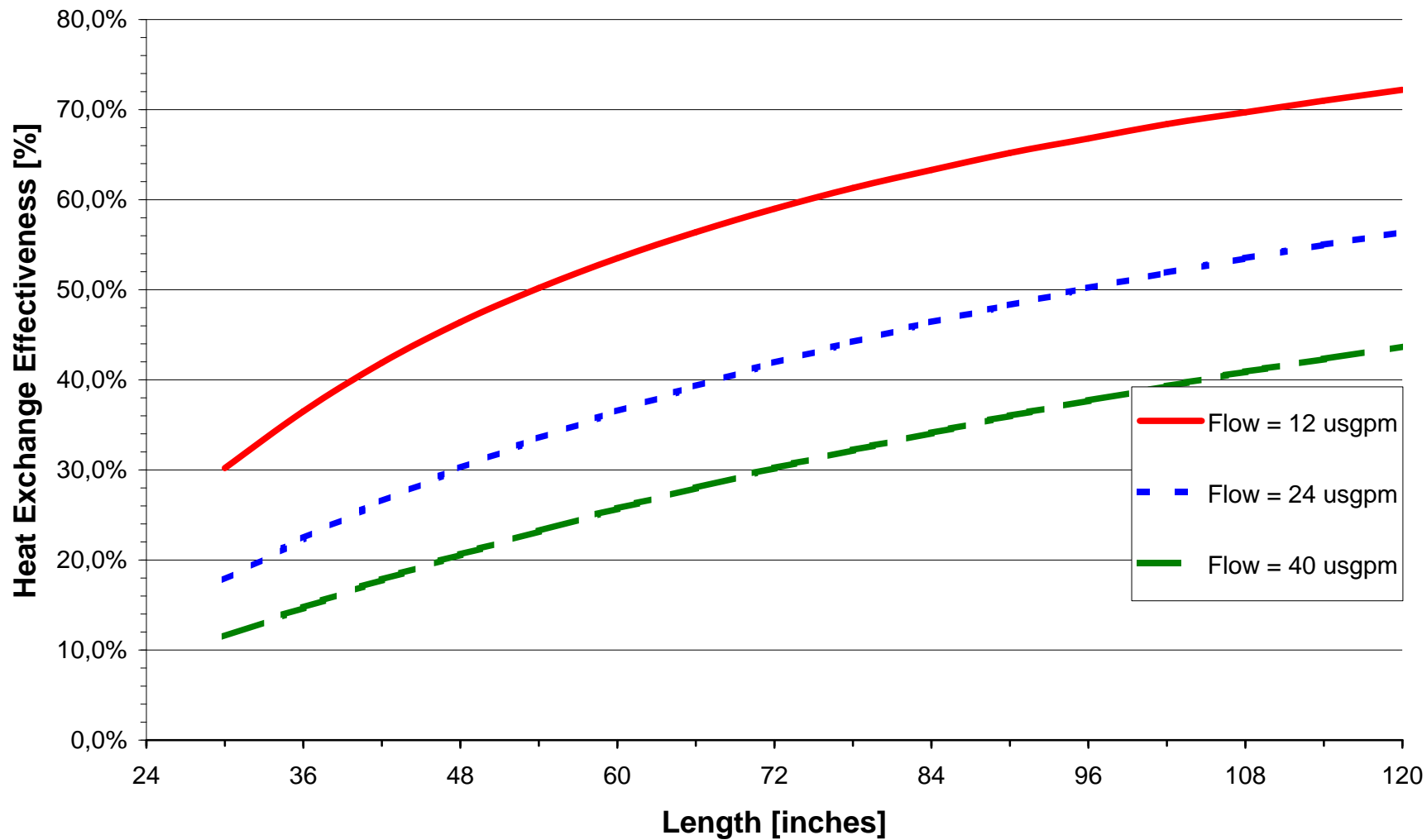
Effect of Power-Pipe Length and Flow on Heat Exchange Effectiveness						
Length (in)	Flow (gpm)	Effectiveness (%)	Flow (gpm)	Effectiveness (%)	Flow (gpm)	Effectiveness (%)
30	12	30,2%	24	17,8%	40	11,5%
36	12	36,5%	24	22,4%	40	14,7%
42	12	41,9%	24	26,5%	40	17,8%
48	12	46,4%	24	30,2%	40	20,6%
54	12	50,2%	24	33,5%	40	23,2%
60	12	53,5%	24	36,5%	40	25,7%
66	12	56,4%	24	39,3%	40	28,0%
72	12	59,0%	24	41,9%	40	30,2%
78	12	61,3%	24	44,2%	40	32,2%
84	12	63,3%	24	46,4%	40	34,1%
90	12	65,2%	24	48,3%	40	36,0%
96	12	66,8%	24	50,2%	40	37,7%
102	12	68,4%	24	51,9%	40	39,3%
108	12	69,7%	24	53,5%	40	40,9%
114	12	71,0%	24	55,0%	40	42,3%
120	12	72,2%	24	56,4%	40	43,7%

* Assumes equal flow

* Optimal flow: 3 gpm to 10 gpm per unit

* Only 4 inches units listed. 2, 3, 5 and 6 inches also available

**Effectiveness of a "4-pipe" manifolded Power-Pipe™ unit
(4 inch diameter pipes) versus flow and length**



Power-Pipe™ - Pricing

Commercial and Industrial Manifoldded units (4 inch pipe diameter)

Commercial Manifold pricing				
Length (inches)	Pumped Manifold units (4 Power-Pipe™ units per manifold)		Gravity Manifold units (4 Power-Pipe™ units per manifold)	
	Model	Price	Model	Price
30	P4-C4-30	\$11 000	G4-C4-30	\$11 000
36	P4-C4-36	\$11 280	G4-C4-36	\$11 280
42	P4-C4-42	\$11 540	G4-C4-42	\$11 540
48	P4-C4-48	\$11 800	G4-C4-48	\$11 800
5	P4-C4-54	\$12 040	G4-C4-54	\$12 040
60	P4-C4-60	\$12 280	G4-C4-60	\$12 280
66	P4-C4-66	\$12 600	G4-C4-66	\$12 600
72	P4-C4-72	\$12 920	G4-C4-72	\$12 920
78	P4-C4-78	\$13 240	G4-C4-78	\$13 240
84	P4-C4-84	\$13 580	G4-C4-84	\$13 580
90	P4-C4-90	\$13 920	G4-C4-90	\$13 920
96	P4-C4-96	\$14 260	G4-C4-96	\$14 260
102	P4-C4-102	\$14 620	G4-C4-102	\$14 620
108	P4-C4-108	\$15 000	G4-C4-108	\$15 000
114	P4-C4-114	\$15 400	G4-C4-114	\$15 400
120	P4-C4-120	\$15 840	G4-C4-120	\$15 840

* Prices subject to change

* Only 4-unit-Manifold listed. Other models are available.