

Chapter 2: Tools to Activate Your BS Detectors

Variable Speed Heat Pumps Are Only More Efficient When Loop Temps Are Mild and Airflows Are High

				Single Speed Water-to-Air Heat Pumps												
				Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump				
				Clg - 86°F ELT		Htg - 68°F ELT		Clg - 59°F ELT		Htg - 50°F ELT		Clg-77°F (FL)		Htg-32°F (FL)		
Mod	Load	cfm	gpm	TC	EER	HC	COP	TC	EER	HC	COP	TC	EER	HC	COP	
15	Full	500	4	14.4	16.5	18.5	5.3	16.7	27.0	15.5	4.7	15.0	18.1	12.0	4.0	
18	Full	600	5	18.0	16.5	23.0	5.3	21.0	26.8	19.0	4.7	18.5	19.0	14.7	4.1	
22	Full	850	8	20.7	17.5	25.3	6.2	23.5	30.0	19.8	5.3	21.7	21.0	15.0	4.0	
30	Full	900	8	28.3	19.2	32.7	5.8	31.3	28.8	25.8	5.0	29.4	21.9	20.0	4.0	
36	Full	1200	9	34.5	19.6	38.0	6.1	37.2	30.1	30.3	5.2	35.0	22.0	24.1	4.4	
42	Full	1300	11	40.6	19.2	44.1	5.9	45.2	29.5	34.9	5.2	42.0	21.4	27.5	4.2	
48	Full	1500	12	47.0	17.5	55.4	5.5	52.0	26.1	45.1	4.8	49.3	19.7	35.3	4.0	
60	Full	1800	15	64.3	17.2	69.8	5.4	72.0	26.1	55.1	4.7	66.8	19.5	43.3	3.9	
70	Full	2000	18	70.6	16.0	84.3	5.1	79.1	23.8	66.1	4.4	73.2	18.2	52.0	3.7	
		cfm		Variable Speed Water-to-Air Heat Pumps												
		Clg.	Htg.	WLHP & GWHP Part-Load (PL) ELTs = Full-Load (FL) ELTs								Clg-68°F (PL)		Htg-41°F (PL)		
36	Full	1300	1500	9	32.0	18.0	50.0	5.3	38.0	31.5	41.0	4.6	36.0	22.0	32.0	3.5
36	Part	1300	1500	9	11.0	21.0	17.0	7.5	13.0	47.2	14.0	5.9	14.0	37.0	13.0	5.3
48	Full	1500	1800	12	41.0	17.6	67.0	5.0	49.0	31.7	55.0	4.3	46.0	21.7	43.0	3.6
48	Part	1500	1800	12	16.0	22.5	24.0	7.6	19.2	53.2	19.0	5.9	19.0	41.0	16.0	5.3
60	Full	1800	2200	15	50.0	16.3	78.0	4.8	60.0	28.6	65.0	4.3	56.0	19.4	51.0	3.5
60	Part	1800	2200	15	20.0	21.7	29.0	7.5	23.2	45.8	23.0	6.0	23.0	36.0	20.0	5.1

Cooling EAT=80.6°F (db)/66.2°F (wb), Heating EAT= 68°F (db), TC & HC in Btu/h × 1000, EER in Btu/W-h, COP in W/W