

ENERGYGUIDE

ENERGY EFFICIENCY SPLIT SYSTEM HEAT PUMP WITH BLOWER COIL

**REGION 4
REGION 5**

MODELS

**WQS30A/BC24B
WQS36A/BC36B
WQS42A/BC36B
24UHPQA/BC24B
30UHPQA/BC36B
36UHPQA/BC36B
42UHPQA/BC48B
48UHPQA/BC48B
60UHPQA/BC60B**

BARD MANUFACTURING COMPANY, BOX 607, BRYAN, OHIO 43506

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**MANUAL 2100-186 REV.
SUPERSEDES REV.**

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BRYAN, OHIO

ENERGYGUIDE INFORMATION

The cost grids on the fact sheets are based upon representative incremental rates that should correspond to the type of fuel being considered.

IMPORTANT: All cost grid data are "estimated yearly operating costs". Your actual yearly operating costs are dependent upon such factors as weather severity, routine maintenance items affecting operating efficiency (filters, blowers, etc.), actual heat loss of structure, desired indoor temperatures, living patterns of the occupants, and other items affecting operating time of the heating appliance.

To use the cost grids, it is necessary to know the heat loss of your home or building and the energy rate for your area. If not already know, the heat loss can be calculated by the dealer, builder, architect, etc., and the current energy rates obtained from the appropriate local utility.

Even without the specific information listed above, the cost of operation of competitive models can be compared by using similarly rated input models and their respective fact sheets and using the same heat loss of house and energy cost values on each fact sheet.

An example of how to use the enclosed information is as follows:

Geographic Location: Ohio--From Region Map: Region IV
 Heat Loss of Building: 35,000 Btu/h
 Heat Appliance Model Desired: 36UHPQA/BC36B

Consulting the Region IV cost grid (1) and moving down the 35,000 Btu/h (2) column to the \$.120 cost per kilowatt hour line (closest value to actual cost determined by contacting local utility) (3), the estimated cost per year to operate is \$1,004.00.(4) The cost to heat with electric heat only is \$2,127,00 (5).

Subtract the estimated cost of heating with heat pump with electric heat \$1,004.00 from the cost of heating with electric heat only \$2,127.00 for estimated annual cost savings of \$1,123.00.

REGION 4 (1)	36UHPQA/BC36B
HEAT PUMP MODEL: OUTDOOR 36UHPQA	INDOOR BC36B
ARI RATED COOLING CAP.: BTUH (95) 34000,	SEER 10.00
ARI RATED HEATING CAP.: BTUH (47) 34000,	COP (47) 3.10, HSPF 7.00 MIN.DHR REG IV
BTUH (17) 20000,	COP (17) 2.20
FURNACE TYPE <u>ELECTRIC</u>	FURNACE EFFICIENCY <u>100.00% AFUE</u>

HEAT LOSS	ELEC. COST
BTUH	\$/KWH

		---THEORETICAL ANNUAL HEATING COST---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
35,000 (2)			
	.05 \$	417	885
	.06 \$	502	1060
	.07 \$	586	1241
	.08 \$	665	1416
	.09 \$	750	1596
	.10 \$	835	1771
(3) .12	----->	1004 (4)	-----> 2127 (5)
	.14 \$	1168	2482
	.16 \$	1331	2838

BALANCE POINT 19 DEG.F (6)

The balance point (the outdoor temperature at which the heat pump is running 100% of the time and just meeting structure heat loss requirements) is located on right side of page (6).

EXAMPLE: For a structure with a 35,000 Btuh with a 36UHPQA heat pump has a balance point of 19°F. Below this theoretical balance point, the heating load is automatically transferred between the heat pump and the furnace by the wall thermostat to maintain the desired temperature.

To find annual cooling cost of heat pump, look at the bottom of page under annual air conditioning cost. Directly under the electric rate \$/KW (3) line, is located the annual cooling cost.

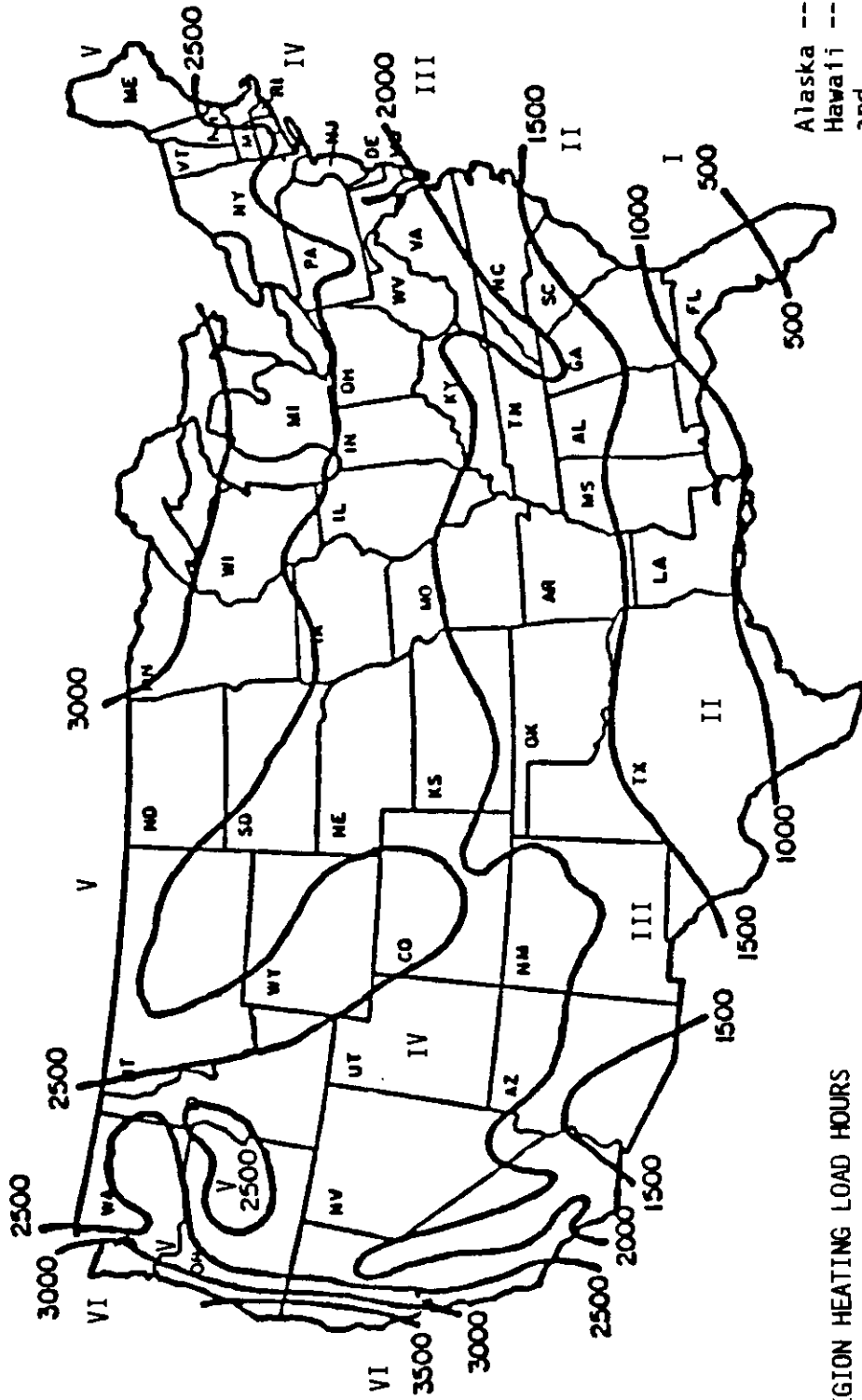
EXAMPLE: At .12 \$/KW rate for electricity, the cooling cost would be \$326.00 annually.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

.05	.06	.07	.08	.09	.10	.12	.14	.16	<--ELECTRIC RATE \$/KWH
\$ 136	163	190	217	244	272	326	380	435	<--THEORETICAL AIR CONDITIONING COST

NOTE: The accuracy of this Energyguide is directly affected by how accurately you estimate the structure's heat loss and heat gain. Because of uncontrollable variables, Bard Manufacturing Company is not responsible for any variation in actual operating costs from these theoretical estimates.

ACTUAL HEATING LOAD HOURS (HLH_A) AND REGIONAL HEATING LOAD HOURS (HLH_R) FOR THE UNITED STATES



Alaska -- 3500 HLH
 Hawaii -- 0 HLH
 and Territories

REGION HEATING LOAD HOURS

Region	HLHr
I	750
II	1250
III	1750
IV	2250
V	2750
VI	2750

This map is reasonably accurate for the most parts of the United States but is necessarily highly generalized and consequently not too accurate in mountainous regions, particularly in the Rockies.

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REGION 4
 HEAT PUMP MODEL: COMPRESSOR SECTION W0S30A INDOOR BC24B
 COOLING CAPACITY AT 53 DEG.F. ENTERING WATER TEMP.: 31500 BTUH, 16.73 SEER
 HEATING CAPACITY AT 53 DEG.F. ENTERING WATER TEMP.: 27450 BTUH, 3.59 COP
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00% AFUE

HEAT LOSS BTUH	ELEC. COST \$/KWH	--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
25,000			
.05	\$	214	631
.06	\$	259	756
.07	\$	299	885
.08	\$	344	1010
.09	\$	383	1139
.10	\$	428	1263
.12	\$	513	1517
.14	\$	603	1771
.16	\$	682	2025
			BALANCE POINT 20- DEG.F.
30,000			
.05	\$	253	756
.06	\$	304	908
.07	\$	349	1060
.08	\$	406	1213
.09	\$	451	1365
.10	\$	502	1517
.12	\$	603	1822
.14	\$	705	2127
.16	\$	806	2431
			BALANCE POINT 6- DEG.F.
35,000			
.05	\$	287	885
.06	\$	344	1060
.07	\$	406	1241
.08	\$	462	1416
.09	\$	519	1596
.10	\$	575	1771
.12	\$	694	2127
.14	\$	812	2482
.16	\$	925	2838
			BALANCE POINT 4 DEG.F.
40,000			
.05	\$	327	1010
.06	\$	394	1213
.07	\$	457	1416
.08	\$	524	1619
.09	\$	592	1822
.10	\$	654	2025
.12	\$	784	2431
.14	\$	919	2838
.16	\$	1043	3244
			BALANCE POINT 11 DEG.F.
50,000			
.05	\$	423	1263
.06	\$	507	1517
.07	\$	586	1771
.08	\$	677	2025
.09	\$	761	2279
.10	\$	846	2533
.12	\$	1015	3041
.14	\$	1184	3549
.16	\$	1354	4057
			BALANCE POINT 22 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

\$	.05	.06	.07	.08	.09	.10	.12	.14	.16	
	75	90	105	120	135	150	180	210	241	
										<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

THE ABOVE ANNUAL HEATING AND COOLING OPERATING COSTS ARE THEORETICAL ESTIMATES ONLY AND ARE PROVIDED FOR A COMMON BASIS OF COMPARISON BETWEEN VARIOUS TYPES OF HEATING AND COOLING SYSTEMS. ACTUAL VALUES MAY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS AND INDIVIDUAL USAGE PATTERN.

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REGION 5
 HEAT PUMP MODEL: COMPRESSOR SECTION MOS30A INDOOR BC24B
 COOLING CAPACITY AT 45 DEG.F. ENTERING WATER TEMP.: 31700 BTUH, 17.55 SEER
 HEATING CAPACITY AT 45 DEG.F. ENTERING WATER TEMP.: 24650 BTUH, 3.40 COP
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00% AFUE

HEAT LOSS BTUH
 ELEC. COST \$/KWH

25,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	306	772
.06	\$	368	925
.07	\$	431	1085
.08	\$	486	1238
.09	\$	549	1391
.10	\$	612	1544
.12	\$	737	1857
.14	\$	855	2170
.16	\$	980	2476

30,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	361	925
.06	\$	431	1112
.07	\$	507	1300
.08	\$	577	1488
.09	\$	646	1669
.10	\$	723	1857
.12	\$	862	2232
.14	\$	1008	2601
.16	\$	1154	2977

BALANCE POINT 14- DEG.F.

35,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	417	1085
.06	\$	493	1300
.07	\$	584	1516
.08	\$	660	1732
.09	\$	751	1947
.10	\$	827	2170
.12	\$	994	2601
.14	\$	1161	3039
.16	\$	1328	3471

BALANCE POINT 3- DEG.F.

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	473	1238
.06	\$	570	1488
.07	\$	660	1732
.08	\$	758	1982
.09	\$	848	2232
.10	\$	946	2476
.12	\$	1133	2977
.14	\$	1321	3471
.16	\$	1516	3965

BALANCE POINT 5 DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	619	1544
.06	\$	737	1857
.07	\$	862	2170
.08	\$	987	2476
.09	\$	1106	2789
.10	\$	1238	3095
.12	\$	1481	3721
.14	\$	1725	4340
.16	\$	1975	4959

BALANCE POINT 17 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

\$	.05	.06	.07	.08	.09	.10	.12	.14	.16	
	36	43	50	57	65	72	86	101	115	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

THE ABOVE ANNUAL HEATING AND COOLING OPERATING COSTS ARE THEORETICAL ESTIMATES ONLY AND ARE PROVIDED FOR A COMMON BASIS OF COMPARISON BETWEEN VARIOUS TYPES OF HEATING AND COOLING SYSTEMS. ACTUAL VALUES MAY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS AND INDIVIDUAL USAGE PATTERN.

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REGION 4
 HEAT PUMP MODEL: COMPRESSOR SECTION W0S36A INDOOR BC36B
 COOLING CAPACITY AT 53 DEG.F. ENTERING WATER TEMP.: 37740 BTUH, 15.07 SEER
 HEATING CAPACITY AT 53 DEG.F. ENTERING WATER TEMP.: 27450 BTUH, 3.59 COP
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00% AFUE

HEAT LOSS BTUH	ELEC. COST \$/KWH	--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
25,000			
.05	\$	214	631
.06	\$	259	756
.07	\$	299	885
.08	\$	344	1010
.09	\$	383	1139
.10	\$	428	1263
.12	\$	513	1517
.14	\$	603	1771
.16	\$	682	2025
			BALANCE POINT 20- DEG.F.
30,000			
.05	\$	253	756
.06	\$	304	908
.07	\$	349	1060
.08	\$	406	1213
.09	\$	451	1365
.10	\$	502	1517
.12	\$	603	1822
.14	\$	705	2127
.16	\$	806	2431
			BALANCE POINT 6- DEG.F.
35,000			
.05	\$	287	885
.06	\$	344	1060
.07	\$	406	1241
.08	\$	462	1416
.09	\$	519	1596
.10	\$	575	1771
.12	\$	694	2127
.14	\$	812	2482
.16	\$	925	2838
			BALANCE POINT 4 DEG.F.
40,000			
.05	\$	327	1010
.06	\$	394	1213
.07	\$	457	1416
.08	\$	524	1619
.09	\$	592	1822
.10	\$	654	2025
.12	\$	784	2431
.14	\$	919	2838
.16	\$	1043	3244
			BALANCE POINT 11 DEG.F.
50,000			
.05	\$	423	1263
.06	\$	507	1517
.07	\$	586	1771
.08	\$	677	2025
.09	\$	761	2279
.10	\$	846	2533
.12	\$	1015	3041
.14	\$	1184	3549
.16	\$	1354	4057
			BALANCE POINT 22 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

\$	.05	.06	.07	.08	.09	.10	.12	.14	.16	
	93	112	131	150	169	187	225	263	300	
										<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

THE ABOVE ANNUAL HEATING AND COOLING OPERATING COSTS ARE THEORETICAL ESTIMATES ONLY AND ARE PROVIDED FOR A COMMON BASIS OF COMPARISON BETWEEN VARIOUS TYPES OF HEATING AND COOLING SYSTEMS. ACTUAL VALUES MAY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS AND INDIVIDUAL USAGE PATTERN.

REGION 5
 HEAT PUMP MODEL: COMPRESSOR SECTION MOS36A INDOOR BC36B
 COOLING CAPACITY AT 45 DEG. F. ENTERING WATER TEMP.: 37900 BTUH, 17.20 SEER
 HEATING CAPACITY AT 45 DEG. F. ENTERING WATER TEMP.: 30650 BTUH, 3.55 COP
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00% AFUE

HEAT LOSS BTUH	ELEC. COST \$/KWH	--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
35,000			
.05	\$	410	1085
.06	\$	493	1300
.07	\$	570	1516
.08	\$	653	1732
.09	\$	737	1947
.10	\$	813	2170
.12	\$	980	2601
.14	\$	1147	3039
.16	\$	1307	3471

BALANCE POINT 20- DEG.F.

HEAT LOSS BTUH	ELEC. COST \$/KWH	--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
40,000			
.05	\$	459	1238
.06	\$	549	1488
.07	\$	646	1732
.08	\$	744	1982
.09	\$	827	2232
.10	\$	925	2476
.12	\$	1106	2977
.14	\$	1293	3471
.16	\$	1474	3965

BALANCE POINT 9- DEG.F.

HEAT LOSS BTUH	ELEC. COST \$/KWH	--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
50,000			
.05	\$	570	1544
.06	\$	688	1857
.07	\$	799	2170
.08	\$	918	2476
.09	\$	1029	2789
.10	\$	1147	3095
.12	\$	1370	3721
.14	\$	1606	4340
.16	\$	1829	4959

BALANCE POINT 5 DEG.F.

HEAT LOSS BTUH	ELEC. COST \$/KWH	--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
60,000			
.05	\$	709	1857
.06	\$	855	2232
.07	\$	994	2601
.08	\$	1133	2977
.09	\$	1279	3345
.10	\$	1419	3721
.12	\$	1704	4465
.14	\$	1989	5210
.16	\$	2274	5954

BALANCE POINT 15 DEG.F.

HEAT LOSS BTUH	ELEC. COST \$/KWH	--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
70,000			
.05	\$	876	2170
.06	\$	1057	2601
.07	\$	1231	3039
.08	\$	1412	3471
.09	\$	1579	3902
.10	\$	1759	4340
.12	\$	2114	5210
.14	\$	2462	6079
.16	\$	2817	6942

BALANCE POINT 22 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	44	52	61	70	79	88	105	123	141	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

THE ABOVE ANNUAL HEATING AND COOLING OPERATING COSTS ARE THEORETICAL ESTIMATES ONLY AND ARE PROVIDED FOR A COMMON BASIS OF COMPARISON BETWEEN VARIOUS TYPES OF HEATING AND COOLING SYSTEMS. ACTUAL VALUES MAY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS AND INDIVIDUAL USAGE PATTERN.

REGION 4
 HEAT PUMP MODEL: COMPRESSOR SECTION MOS42A INDOOR BC36B
 COOLING CAPACITY AT 53 DEG.F. ENTERING WATER TEMP.: 41290 BTUH, 16.79 SEER
 HEATING CAPACITY AT 53 DEG.F. ENTERING WATER TEMP.: 39090 BTUH, 3.39 COP
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00% AFUE

HEAT LOSS BTUH
 ELREC. COST \$/KWH

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	355	1010
.06	\$	434	1213
.07	\$	502	1416
.08	\$	575	1619
.09	\$	643	1822
.10	\$	716	2025
.12	\$	857	2431
.14	\$	1004	2838
.16	\$	1145	3244

BALANCE POINT 11- DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	434	1263
.06	\$	524	1517
.07	\$	609	1771
.08	\$	699	2025
.09	\$	784	2279
.10	\$	874	2533
.12	\$	1043	3041
.14	\$	1218	3549
.16	\$	1393	4057

BALANCE POINT 4 DEG.F.

60,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	519	1517
.06	\$	620	1822
.07	\$	727	2127
.08	\$	829	2431
.09	\$	936	2736
.10	\$	1038	3041
.12	\$	1247	3650
.14	\$	1455	4260
.16	\$	1664	4869

BALANCE POINT 14 DEG.F.

70,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	615	1771
.06	\$	744	2127
.07	\$	868	2482
.08	\$	987	2838
.09	\$	1117	3193
.10	\$	1241	3549
.12	\$	1484	4260
.14	\$	1732	4971
.16	\$	1974	5682

BALANCE POINT 21 DEG.F.

80,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	739	2025
.06	\$	885	2431
.07	\$	1032	2838
.08	\$	1179	3244
.09	\$	1331	3650
.10	\$	1478	4057
.12	\$	1771	4869
.14	\$	2070	5682
.16	\$	2364	6494

BALANCE POINT 27 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

.05	.06	.07	.08	.09	.10	.12	.14	.16
\$ 98	118	137	157	177	196	236	275	314

<--ELECTRIC RATE \$/KWH
 <--THEORETICAL AIR CONDITIONING COST

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REGION 5
 HEAT PUMP MODEL: COMPRESSOR SECTION MOS42A INDOOR BC36B
 COOLING CAPACITY AT 45 DEG.F. ENTERING WATER TEMP.: 41650 BTUH, 18.14 SEER
 HEATING CAPACITY AT 45 DEG.F. ENTERING WATER TEMP.: 35400 BTUH, 3.20 COP
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00% AFUE

HEAT LOSS
 BTUH
 EL.EC.
 COST
 \$/KWH

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	507	1238
.06	\$	612	1488
.07	\$	716	1732
.08	\$	813	1982
.09	\$	918	2232
.10	\$	1022	2476
.12	\$	1224	2977
.14	\$	1426	3471
.16	\$	1634	3965

BALANCE POINT 21- DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	619	1544
.06	\$	751	1857
.07	\$	869	2170
.08	\$	1001	2476
.09	\$	1119	2789
.10	\$	1245	3095
.12	\$	1495	3721
.14	\$	1745	4340
.16	\$	1996	4959

BALANCE POINT 4- DEG.F.

60,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	751	1857
.06	\$	890	2232
.07	\$	1043	2601
.08	\$	1196	2977
.09	\$	1342	3345
.10	\$	1488	3721
.12	\$	1794	4465
.14	\$	2086	5210
.16	\$	2385	5954

BALANCE POINT 7 DEG.F.

70,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	897	2170
.06	\$	1078	2601
.07	\$	1252	3039
.08	\$	1432	3471
.09	\$	1613	3902
.10	\$	1787	4340
.12	\$	2142	5210
.14	\$	2511	6079
.16	\$	2865	6942

BALANCE POINT 16 DEG.F.

80,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1071	2476
.06	\$	1279	2977
.07	\$	1495	3471
.08	\$	1704	3965
.09	\$	1926	4465
.10	\$	2142	4959
.12	\$	2566	5954
.14	\$	2991	6942
.16	\$	3422	7936

BALANCE POINT 22 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	45	55	64	73	82	91	110	128	146	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

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REGION 4
 HEAT PUMP MODEL: OUTDOOR 24UHPOA 24UHPOA/BC24B INDOOR BC24B
 ARI RATED COOLING CAP.: BTUH(95) 24400 SEER10.00
 ARI RATED HEATING CAP.: BTUH (47) 24000 COP(47) 2.90 HSPF 6.00 MIN.DHR REG IV
 BTUH (17) 12500 COP(17) 1.90
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS
 BTUH
 ELEC. COST
 S/KWH

25,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	338	631
.06	\$	406	756
.07	\$	473	885
.08	\$	541	1010
.09	\$	609	1139
.10	\$	677	1263
.12	\$	812	1517
.14	\$	947	1771
.16	\$	1083	2025

BALANCE POINT 21 DEG.F.

30,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	411	756
.06	\$	490	908
.07	\$	575	1060
.08	\$	654	1213
.09	\$	739	1365
.10	\$	823	1517
.12	\$	987	1822
.14	\$	1151	2127
.16	\$	1314	2431

BALANCE POINT 25 DEG.F.

35,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	490	885
.06	\$	586	1060
.07	\$	682	1241
.08	\$	778	1416
.09	\$	880	1596
.10	\$	976	1771
.12	\$	1173	2127
.14	\$	1371	2482
.16	\$	1563	2838

BALANCE POINT 28 DEG.F.

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	569	1010
.06	\$	688	1213
.07	\$	795	1416
.08	\$	914	1619
.09	\$	1026	1822
.10	\$	1139	2025
.12	\$	1365	2431
.14	\$	1596	2838
.16	\$	1822	3244

BALANCE POINT 31 DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	761	1263
.06	\$	908	1517
.07	\$	1060	1771
.08	\$	1213	2025
.09	\$	1359	2279
.10	\$	1512	2533
.12	\$	1811	3041
.14	\$	2121	3549
.16	\$	2420	4057

BALANCE POINT 36 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	97	117	136	156	175	195	234	273	312	<--ELECTRIC RATE S/KWH
										<--THEORETICAL AIR CONDITIONING COST

THE ABOVE ANNUAL HEATING AND COOLING OPERATING COSTS ARE THEORETICAL ESTIMATES ONLY AND ARE PROVIDED FOR A COMMON BASIS OF COMPARISON BETWEEN VARIOUS TYPES OF HEATING AND COOLING SYSTEMS. ACTUAL VALUES MAY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS AND INDIVIDUAL USAGE PATTERN.

REGION 5
 HEAT PUMP MODEL: OUTDOOR 24UHPOA 24URPOA/BC24B INDOOR BC24B
 ARI RATED COOLING CAP.: BTUH(95) 24400, SEER10.00
 ARI RATED HEATING CAP.: BTUH (47) 24000, COP(47) 2.90, HSPF 6.00 MIN.DHR REG IV
 BTUH (17) 12500, COP(17) 1.90
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS
BTUH

ELEC. COST
\$/KWH

25,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	479	772
.06	\$	577	925
.07	\$	667	1085
.08	\$	765	1238
.09	\$	855	1391
.10	\$	952	1544
.12	\$	1147	1857
.14	\$	1335	2170
.16	\$	1530	2476

BALANCE POINT 16 DEG.F.

30,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	577	925
.06	\$	695	1112
.07	\$	806	1300
.08	\$	925	1488
.09	\$	1043	1669
.10	\$	1161	1857
.12	\$	1391	2232
.14	\$	1620	2601
.16	\$	1850	2977

BALANCE POINT 20 DEG.F.

35,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	688	1085
.06	\$	820	1300
.07	\$	959	1516
.08	\$	1099	1732
.09	\$	1238	1947
.10	\$	1370	2170
.12	\$	1641	2601
.14	\$	1912	3039
.16	\$	2191	3471

BALANCE POINT 24 DEG.F.

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	793	1238
.06	\$	952	1488
.07	\$	1106	1732
.08	\$	1272	1982
.09	\$	1426	2232
.10	\$	1586	2476
.12	\$	1899	2977
.14	\$	2219	3471
.16	\$	2538	3965

BALANCE POINT 26 DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1029	1544
.06	\$	1238	1857
.07	\$	1439	2170
.08	\$	1648	2476
.09	\$	1857	2789
.10	\$	2065	3095
.12	\$	2476	3721
.14	\$	2886	4340
.16	\$	3297	4959

BALANCE POINT 31 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	48	58	68	78	87	97	117	136	156	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

THE ABOVE ANNUAL HEATING AND COOLING OPERATING COSTS ARE THEORETICAL ESTIMATES ONLY AND ARE PROVIDED FOR A COMMON BASIS OF COMPARISON BETWEEN VARIOUS TYPES OF HEATING AND COOLING SYSTEMS. ACTUAL VALUES MAY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS AND INDIVIDUAL USAGE PATTERN.

REGION 4
 HEAT PUMP MODEL: OUTDOOR 30UHPOA 30UHPOA/BC36B
 INDOOR BC36B
 ARI RATED COOLING CAP.: BTUH(95) 29000 SEER10.00
 ARI RATED HEATING CAP.: BTUH(47) 29000 COP(47) 3.00 HSPF 7.00 MIN.DHR REG IV
 BTUH(17) 16000 COP(17) 2.00
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS
 BTUH
 ELEC.
 COST
 \$/KWH

30,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	378	756
.06	\$	451	908
.07	\$	524	1060
.08	\$	603	1213
.09	\$	677	1365
.10	\$	750	1517
.12	\$	902	1822
.14	\$	1049	2127
.16	\$	1207	2431

BALANCE POINT 20 DEG.F.

35,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	440	885
.06	\$	530	1060
.07	\$	620	1241
.08	\$	705	1416
.09	\$	795	1596
.10	\$	885	1771
.12	\$	1066	2127
.14	\$	1235	2482
.16	\$	1416	2838

BALANCE POINT 23 DEG.F.

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	507	1010
.06	\$	615	1213
.07	\$	716	1416
.08	\$	818	1619
.09	\$	919	1822
.10	\$	1021	2025
.12	\$	1224	2431
.14	\$	1427	2838
.16	\$	1636	3244

BALANCE POINT 26 DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	665	1263
.06	\$	801	1517
.07	\$	936	1771
.08	\$	1072	2025
.09	\$	1207	2279
.10	\$	1337	2533
.12	\$	1602	3041
.14	\$	1873	3549
.16	\$	2138	4057

BALANCE POINT 31 DEG.F.

60,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	852	1517
.06	\$	1026	1822
.07	\$	1196	2127
.08	\$	1365	2431
.09	\$	1534	2736
.10	\$	1709	3041
.12	\$	2048	3650
.14	\$	2386	4260
.16	\$	2731	4869

BALANCE POINT 35 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

\$	.05	.06	.07	.08	.09	.10	.12	.14	.16	
	116	139	162	185	208	232	278	324	371	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

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BARD MANUFACTURING COMPANY

REGION 5
 HEAT PUMP MODEL: 30UHPQA/BC36B OUTDOOR 30UHPQA INDOOR BC36B
 ARI RATED COOLING CAP.: BTUH(95) 29000 SEER10.00
 ARI RATED HEATING CAP.: BTUH(47) 29000 COP(47) 3.00 HSPF 7.00 MIN.DHR REG IV
 BTUH(17) 16000 COP(17) 2.00
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS
 BTUH
 ELEC.
 COST
 \$/KWH

30,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	535	925
.06	\$	646	1112
.07	\$	751	1300
.08	\$	862	1488
.09	\$	973	1669
.10	\$	1078	1857
.12	\$	1293	2232
.14	\$	1509	2601
.16	\$	1725	2977

BALANCE POINT 15 DEG.F.

35,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	633	1085
.06	\$	758	1300
.07	\$	883	1516
.08	\$	1015	1732
.09	\$	1140	1947
.10	\$	1266	2170
.12	\$	1516	2601
.14	\$	1773	3039
.16	\$	2024	3471

BALANCE POINT 18 DEG.F.

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	730	1238
.06	\$	876	1488
.07	\$	1022	1732
.08	\$	1168	1982
.09	\$	1314	2232
.10	\$	1460	2476
.12	\$	1752	2977
.14	\$	2045	3471
.16	\$	2337	3965

BALANCE POINT 21 DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	939	1544
.06	\$	1126	1857
.07	\$	1321	2170
.08	\$	1509	2476
.09	\$	1697	2789
.10	\$	1878	3095
.12	\$	2260	3721
.14	\$	2636	4340
.16	\$	3018	4959

BALANCE POINT 26 DEG.F.

60,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1175	1857
.06	\$	1412	2232
.07	\$	1641	2601
.08	\$	1878	2977
.09	\$	2114	3345
.10	\$	2351	3721
.12	\$	2817	4465
.14	\$	3290	5210
.16	\$	3756	5954

BALANCE POINT 30 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	58	69	81	92	104	116	139	162	185	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

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BARD MANUFACTURING COMPANY

REGION 4
 HEAT PUMP MODEL: OUTDOOR 36UHPOA 36UHPOA/BC36B INDOOR BC36B
 ARI RATED COOLING CAP.: BTUH(95) 34000, SEER10.00
 ARI RATED HEATING CAP.: BTUH(47) 34000, COP(47) 3.10, HSPF 7.00 MIN.DIR REG IV
 BTUH(17) 20000, COP(17) 2.20
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS
 BTUH
 EL.EC.
 COST
 \$/KWH

35,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	417	885
.06	\$	502	1060
.07	\$	586	1241
.08	\$	665	1416
.09	\$	750	1596
.10	\$	835	1771
.12	\$	1004	2127
.14	\$	1168	2482
.16	\$	1331	2838

BALANCE POINT 19 DEG.F.

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	479	1010
.06	\$	575	1213
.07	\$	671	1416
.08	\$	761	1619
.09	\$	863	1822
.10	\$	959	2025
.12	\$	1151	2431
.14	\$	1342	2838
.16	\$	1534	3244

BALANCE POINT 22 DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	620	1263
.06	\$	739	1517
.07	\$	868	1771
.08	\$	993	2025
.09	\$	1117	2279
.10	\$	1241	2533
.12	\$	1489	3041
.14	\$	1737	3549
.16	\$	1986	4057

BALANCE POINT 28 DEG.F.

60,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	778	1517
.06	\$	936	1822
.07	\$	1094	2127
.08	\$	1247	2431
.09	\$	1405	2736
.10	\$	1563	3041
.12	\$	1873	3650
.14	\$	2189	4260
.16	\$	2494	4869

BALANCE POINT 32 DEG.F.

70,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	964	1771
.06	\$	1162	2127
.07	\$	1348	2482
.08	\$	1546	2838
.09	\$	1737	3193
.10	\$	1929	3549
.12	\$	2313	4260
.14	\$	2702	4971
.16	\$	3086	5682

BALANCE POINT 35 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	136	163	190	217	244	272	326	380	435	<--ELECTRIC RATE \$/KWH <--THEORETICAL AIR CONDITIONING COST

THE ABOVE ANNUAL HEATING AND COOLING OPERATING COSTS ARE THEORETICAL ESTIMATES ONLY AND ARE PROVIDED FOR A COMMON BASIS OF COMPARISON BETWEEN VARIOUS TYPES OF HEATING AND COOLING SYSTEMS. ACTUAL VALUES MAY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS AND INDIVIDUAL USAGE PATTERN.

BARD MANUFACTURING COMPANY

REGION 5
 HEAT PUMP MODEL: OUTDOOR 36UHPOA 36UHPOA/BC36B INDOOR BC36B
 ARI RATED COOLING CAP.: BTUH(95) 34000, SEER10.00
 ARI RATED HEATING CAP.: BTUH(47) 34000, COP(47) 3.10, HSPF 7.00 MIN.DBR REG IV
 BTUH(17) 20000, COP(17) 2.20
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS
 BTUH
 ELEC.
 COST
 \$/KWH

35,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	598	1085
.06	\$	709	1300
.07	\$	834	1516
.08	\$	946	1732
.09	\$	1071	1947
.10	\$	1182	2170
.12	\$	1426	2601
.14	\$	1662	3039
.16	\$	1899	3471

BALANCE POINT 13 DEG.F.

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	681	1238
.06	\$	813	1488
.07	\$	952	1732
.08	\$	1092	1982
.09	\$	1224	2232
.10	\$	1363	2476
.12	\$	1641	2977
.14	\$	1905	3471
.16	\$	2177	3965

BALANCE POINT 16 DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	869	1544
.06	\$	1050	1857
.07	\$	1224	2170
.08	\$	1398	2476
.09	\$	1572	2789
.10	\$	1752	3095
.12	\$	2100	3721
.14	\$	2441	4340
.16	\$	2796	4959

BALANCE POINT 22 DEG.F.

60,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1085	1857
.06	\$	1300	2232
.07	\$	1516	2601
.08	\$	1739	2977
.09	\$	1954	3345
.10	\$	2170	3721
.12	\$	2601	4465
.14	\$	3039	5210
.16	\$	3471	5954

BALANCE POINT 27 DEG.F.

70,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1321	2170
.06	\$	1579	2601
.07	\$	1843	3039
.08	\$	2114	3471
.09	\$	2372	3902
.10	\$	2636	4340
.12	\$	3165	5210
.14	\$	3693	6079
.16	\$	4215	6942

BALANCE POINT 30 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	68	81	95	108	122	136	163	190	217	<--ELECTRIC RATE \$/KWH <--THEORETICAL AIR CONDITIONING COST

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BARD MANUFACTURING COMPANY

REGION 4
 HEAT PUMP MODEL: OUTDOOR 42UHPQA 42UHPQA/BC48B INDOOR BC48B
 ARI RATED COOLING CAP.: BTUH(95) 40500, SKER10.50
 ARI RATED HEATING CAP.: BTUH (47) 39000, COP(47) 3.00, HSPF 7.10 MIN.DHR REG IV
 BTUH (17) 24000, COP(17) 2.10
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS
 BTUH
 ELEC. COST
 \$/KWH

40,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	490	1010
.06	\$	592	1213
.07	\$	688	1416
.08	\$	789	1619
.09	\$	880	1822
.10	\$	981	2025
.12	\$	1179	2431
.14	\$	1371	2838
.16	\$	1568	3244

BALANCE POINT 17 DEG.F.

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	620	1263
.06	\$	750	1517
.07	\$	868	1771
.08	\$	993	2025
.09	\$	1117	2279
.10	\$	1241	2533
.12	\$	1489	3041
.14	\$	1743	3549
.16	\$	1991	4057

BALANCE POINT 24 DEG.F.

60,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	773	1517
.06	\$	925	1822
.07	\$	1077	2127
.08	\$	1230	2431
.09	\$	1388	2736
.10	\$	1540	3041
.12	\$	1845	3650
.14	\$	2155	4260
.16	\$	2460	4869

BALANCE POINT 29 DEG.F.

70,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	936	1771
.06	\$	1122	2127
.07	\$	1309	2482
.08	\$	1495	2838
.09	\$	1687	3193
.10	\$	1873	3549
.12	\$	2251	4260
.14	\$	2623	4971
.16	\$	2996	5682

BALANCE POINT 33 DEG.F.

80,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1122	2025
.06	\$	1348	2431
.07	\$	1568	2838
.08	\$	1794	3244
.09	\$	2020	3650
.10	\$	2245	4057
.12	\$	2691	4869
.14	\$	3142	5682
.16	\$	3594	6494

BALANCE POINT 36 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	154	185	215	246	277	308	370	431	493	<--ELECTRIC RATE \$/KWH <--THEORETICAL AIR CONDITIONING COST

THE ABOVE ANNUAL HEATING AND COOLING OPERATING COSTS ARE THEORETICAL ESTIMATES ONLY AND ARE PROVIDED FOR A COMMON BASIS OF COMPARISON BETWEEN VARIOUS TYPES OF HEATING AND COOLING SYSTEMS. ACTUAL VALUES MAY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS AND INDIVIDUAL USAGE PATTERN.

REGION 5
 HEAT PUMP MODEL: OUTDOOR 42UHPOA 42UHPOA/BC48B INDOOR BC48B
 ARI RATED COOLING CAP.: BTUH (95) 40500, SEER10.50
 ARI RATED HEATING CAP.: BTUH (47) 39000, COP(47) 3.00, HSPF 7.10 MIN.DHR REG IV
 BTUH (17) 24000, COP(17) 2.10
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS BTUH ELEC. COST \$/KWH

50,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	876	1544
.06	\$	1050	1857
.07	\$	1231	2170
.08	\$	1398	2476
.09	\$	1579	2789
.10	\$	1752	3095
.12	\$	2100	3721
.14	\$	2448	4340
.16	\$	2796	4959

BALANCE POINT 17 DEG.F.

60,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1071	1857
.06	\$	1286	2232
.07	\$	1502	2601
.08	\$	1718	2977
.09	\$	1926	3345
.10	\$	2149	3721
.12	\$	2573	4465
.14	\$	3005	5210
.16	\$	3429	5954

BALANCE POINT 23 DEG.F.

70,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1286	2170
.06	\$	1544	2601
.07	\$	1801	3039
.08	\$	2059	3471
.09	\$	2316	3902
.10	\$	2573	4340
.12	\$	3095	5210
.14	\$	3603	6079
.16	\$	4118	6942

BALANCE POINT 27 DEG.F.

80,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1523	2476
.06	\$	1829	2977
.07	\$	2128	3471
.08	\$	2434	3965
.09	\$	2740	4465
.10	\$	3039	4959
.12	\$	3651	5954
.14	\$	4257	6942
.16	\$	4869	7936

BALANCE POINT 30 DEG.F.

90,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1766	2789
.06	\$	2121	3345
.07	\$	2483	3902
.08	\$	2831	4465
.09	\$	3185	5022
.10	\$	3540	5578
.12	\$	4250	6698
.14	\$	4952	7811
.16	\$	5662	8931

BALANCE POINT 33 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

\$	.05	.06	.07	.08	.09	.10	.12	.14	.16	
	.77	.92	1.07	1.23	1.38	1.54	1.85	2.15	2.46	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

THE ABOVE ANNUAL HEATING AND COOLING OPERATING COSTS ARE THEORETICAL ESTIMATES ONLY AND ARE PROVIDED FOR A COMMON BASIS OF COMPARISON BETWEEN VARIOUS TYPES OF HEATING AND COOLING SYSTEMS. ACTUAL VALUES MAY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS AND INDIVIDUAL USAGE PATTERN.

BARD MANUFACTURING COMPANY

REGION 4
 HEAT PUMP MODEL: OUTDOOR 48URPOA 48URPOA/BC48B INDOOR BC48B
 ARI RATED COOLING CAP.: BTUH (95) 45500, SEER 9.80
 ARI RATED HEATING CAP.: BTUH (47) 46500, COP(47) 2.90, HSPF 7.00 MIN.DHR REG IV
 BTUH (17) 28000, COP(17) 2.00
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS BTUH
 ELEC. COST \$/KWH

50,000

		--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
.05	\$	615	1263
.06	\$	739	1517
.07	\$	863	1771
.08	\$	987	2025
.09	\$	1111	2279
.10	\$	1230	2533
.12	\$	1478	3041
.14	\$	1726	3549
.16	\$	1974	4057

BALANCE POINT 19 DEG.F.

60,000

		--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
.05	\$	750	1517
.06	\$	897	1822
.07	\$	1049	2127
.08	\$	1196	2431
.09	\$	1348	2736
.10	\$	1495	3041
.12	\$	1794	3650
.14	\$	2093	4260
.16	\$	2392	4869

BALANCE POINT 23 DEG.F.

70,000

		--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
.05	\$	885	1771
.06	\$	1060	2127
.07	\$	1241	2482
.08	\$	1421	2838
.09	\$	1596	3193
.10	\$	1771	3549
.12	\$	2132	4260
.14	\$	2482	4971
.16	\$	2838	5682

BALANCE POINT 27 DEG.F.

80,000

		--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
.05	\$	1043	2025
.06	\$	1252	2431
.07	\$	1461	2838
.08	\$	1670	3244
.09	\$	1878	3650
.10	\$	2087	4057
.12	\$	2505	4869
.14	\$	2922	5682
.16	\$	3346	6494

BALANCE POINT 30 DEG.F.

90,000

		--- THEORETICAL ANNUAL HEATING COST ---	
		HEAT PUMP WITH ELECTRIC HEAT	ELECTRIC HEAT ONLY
.05	\$	1218	2279
.06	\$	1455	2736
.07	\$	1704	3193
.08	\$	1941	3650
.09	\$	2189	4107
.10	\$	2426	4564
.12	\$	2911	5478
.14	\$	3402	6393
.16	\$	3887	7307

BALANCE POINT 33 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	185	222	259	297	334	371	445	519	594	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

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BARD MANUFACTURING COMPANY

REGION 5
 HEAT PUMP MODEL: OUTDOOR 48UHPOA 48UHPOA/BC48B INDOOR BC48B
 ARI RATED COOLING CAP.: BTUH(95) 45500, SEER 9.80
 ARI RATED HEATING CAP.: BTUH(47) 46500, COP(47) 2.90, HSPF 7.00 MIN.DHR REG IV
 BTUH(17) 28000, COP(17) 2.00
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS
 BTUH
 ELEC. COST
 \$/KWH

60,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1064	1857
.06	\$	1279	2232
.07	\$	1488	2601
.08	\$	1704	2977
.09	\$	1919	3345
.10	\$	2135	3721
.12	\$	2552	4465
.14	\$	2977	5210
.16	\$	3408	5954

BALANCE POINT 18 DEG.F.

70,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1259	2170
.06	\$	1509	2601
.07	\$	1759	3039
.08	\$	2010	3471
.09	\$	2267	3902
.10	\$	2518	4340
.12	\$	3018	5210
.14	\$	3519	6079
.16	\$	4027	6942

BALANCE POINT 22 DEG.F.

80,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1474	2476
.06	\$	1766	2977
.07	\$	2059	3471
.08	\$	2351	3965
.09	\$	2650	4465
.10	\$	2942	4959
.12	\$	3526	5954
.14	\$	4118	6942
.16	\$	4702	7936

BALANCE POINT 25 DEG.F.

90,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1690	2789
.06	\$	2031	3345
.07	\$	2365	3902
.08	\$	2705	4465
.09	\$	3046	5022
.10	\$	3387	5578
.12	\$	4062	6698
.14	\$	4737	7811
.16	\$	5411	8931

BALANCE POINT 28 DEG.F.

100,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1926	3095
.06	\$	2309	3721
.07	\$	2692	4340
.08	\$	3081	4959
.09	\$	3464	5578
.10	\$	3846	6197
.12	\$	4618	7443
.14	\$	5391	8681
.16	\$	6163	9926

BALANCE POINT 30 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	92	111	129	148	167	185	222	259	297	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

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BARD MANUFACTURING COMPANY

REGION 4
 HEAT PUMP MODEL: OUTDOOR 60URPQA 60URPQA/BC60B INDOOR BC60B
 ARI RATED COOLING CAP.: BTUH (95) 57500, SEER10.30
 ARI RATED HEATING CAP.: BTUH (47) 58000, COP(47) 3.20, HSPF 7.50 MIN.DHR REG IV
 BTUH (17) 34500, COP(17) 2.20
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS BTUH ELBC. COST \$/KWH

70,000 --- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	829	1771
.06	\$	998	2127
.07	\$	1162	2482
.08	\$	1331	2838
.09	\$	1495	3193
.10	\$	1664	3549
.12	\$	1991	4260
.14	\$	2330	4971
.16	\$	2657	5682

BALANCE POINT 23 DEG.F.

80,000 --- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	964	2025
.06	\$	1156	2431
.07	\$	1354	2838
.08	\$	1546	3244
.09	\$	1737	3650
.10	\$	1929	4057
.12	\$	2319	4869
.14	\$	2702	5682
.16	\$	3086	6494

BALANCE POINT 26 DEG.F.

90,000 --- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1117	2279
.06	\$	1342	2736
.07	\$	1563	3193
.08	\$	1788	3650
.09	\$	2014	4107
.10	\$	2240	4564
.12	\$	2685	5478
.14	\$	3131	6393
.16	\$	3577	7307

BALANCE POINT 29 DEG.F.

100,000 --- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1269	2533
.06	\$	1529	3041
.07	\$	1783	3549
.08	\$	2042	4057
.09	\$	2290	4564
.10	\$	2544	5072
.12	\$	3052	6088
.14	\$	3566	7104
.16	\$	4073	8119

BALANCE POINT 32 DEG.F.

110,000 --- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1455	2787
.06	\$	1749	3346
.07	\$	2036	3904
.08	\$	2330	4463
.09	\$	2629	5021
.10	\$	2917	5580
.12	\$	3498	6697
.14	\$	4085	7815
.16	\$	4666	8932

BALANCE POINT 34 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	223	267	312	357	401	446	535	625	714	<--ELECTRIC RATE \$/KWH <--THEORETICAL AIR CONDITIONING COST

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BARD MANUFACTURING COMPANY

REGION 5
 HEAT PUMP MODEL: OUTDOOR 60UHPOA 60UBPQA/BC60B INDOOR BC60B
 ARI RATED COOLING CAP.: BTUH (95) 57500, SEER10.30
 ARI RATED HEATING CAP.: BTUH (47) 58000, COP(47) 3.20, RSPF 7.50 MIN.DHR REG IV
 BTUH (17) 34500, COP(17) 2.20
 FURNACE TYPE ELECTRIC FURNACE EFFICIENCY 100.00 % AFUE

HEAT LOSS
 BTUH
 ELEC.
 COST
 \$/KWH

80,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1370	2476
.06	\$	1648	2977
.07	\$	1926	3471
.08	\$	2198	3965
.09	\$	2476	4465
.10	\$	2754	4959
.12	\$	3304	5954
.14	\$	3846	6942
.16	\$	4403	7936

BALANCE POINT 20 DEG.F.

90,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1579	2789
.06	\$	1892	3345
.07	\$	2205	3902
.08	\$	2525	4465
.09	\$	2838	5022
.10	\$	3151	5578
.12	\$	3784	6698
.14	\$	4417	7811
.16	\$	5050	8931

BALANCE POINT 23 DEG.F.

100,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	1780	3095
.06	\$	2142	3721
.07	\$	2497	4340
.08	\$	2858	4959
.09	\$	3213	5578
.10	\$	3568	6197
.12	\$	4284	7443
.14	\$	5001	8681
.16	\$	5717	9926

BALANCE POINT 26 DEG.F.

110,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	2010	3408
.06	\$	2413	4090
.07	\$	2817	4771
.08	\$	3220	5453
.09	\$	3624	6135
.10	\$	4027	6823
.12	\$	4827	8187
.14	\$	5641	9550
.16	\$	6448	10914

BALANCE POINT 28 DEG.F.

130,000

--- THEORETICAL ANNUAL HEATING COST ---
 HEAT PUMP WITH ELECTRIC HEAT ELECTRIC HEAT ONLY

.05	\$	2490	4027
.06	\$	2984	4834
.07	\$	3485	5641
.08	\$	3978	6448
.09	\$	4479	7255
.10	\$	4980	8062
.12	\$	5975	9676
.14	\$	6970	11289
.16	\$	7964	12903

BALANCE POINT 32 DEG.F.

ANNUAL AIR CONDITIONING COST WHEN COOLING LOAD IS SIZED TO MATCH COOLING CAPACITY OF HEAT PUMP

	.05	.06	.07	.08	.09	.10	.12	.14	.16	
\$	111	133	156	178	200	223	267	312	357	<--ELECTRIC RATE \$/KWH
										<--THEORETICAL AIR CONDITIONING COST

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