

Outdoor Air TMY-2* Design Weather Data for Baltimore, MD							VAV			DOAS				
Total Annual BIN Hours	Mean Coincident Dry Bulb	Wet Bulb BIN Data	BIN Hours Used for Analysis	Enthalpy BTU/LB	Moisture GR./LB.	Mixed Air DB (F)	Mixed Air Gr (Gr/lb)	BTU Usage	Wheel Usage Category	Wheeled Air DB (F)	Wheeled Air Gr (Gr/lb)	BTU Usage	DOAS savings Check	
1	15	90.3	81	15	44.82	147.17	73.83	66.92	56,789,999		75.66	75.83	45,660,062	Savings of
2	48	86.6	79	48	41.73	139.38	73.46	66.14	176,639,846		74.92	74.28	141,650,318	Savings of
3	122	85.3	77	122	39.76	128.25	73.33	65.02	436,475,155		74.66	72.05	349,080,074	Savings of
4	197	82.6	75	197	37.89	120.02	73.06	64.20	685,689,726		74.12	70.40	546,920,334	Savings of
5	274	79.3	73	274	36.11	113.35	72.73	63.53	928,378,130	Wheel Use at Full Capacity	73.46	69.07	738,485,693	Savings of
6	313	76.3	71	313	34.41	106.71	72.43	62.87	1,032,832,756		72.86	67.74	819,319,633	Savings of
7	355	76	69	355	32.75	96.16	72.40	61.82	1,141,078,388		72.80	65.63	902,649,966	Savings of
8	402	74.2	67	402	31.19	88.54	72.22	61.05	1,259,502,152		72.44	64.11	993,525,667	Savings of
9	375	72.5	65	375	29.69	81.22	72.05	60.32	1,145,760,910		72.10	62.64	901,236,145	Savings of
10	375	69.4	63	375	28.26	76.59	71.74	59.86	1,117,966,482		71.48	61.72	876,862,764	Savings of
11	331	69.1	61	331	26.87	67.83	71.71	58.98	963,104,570		71.42	59.97	753,205,867	Savings of
12	379	65.9	59	379	25.56	64.13	71.39	58.61	1,076,953,807		70.78	59.23	839,794,091	Savings of
13	347	64.1	57	347	24.29	58.53	71.21	58.05	963,270,493		70.42	58.11	748,935,367	Savings of
14	261	61.3	55	261	23.08	54.88	70.93	57.69	708,127,864		61.30	54.88	406,103,487	Savings of
15	271	59.1	53	271	21.91	50.57	70.71	57.26	718,869,020	Wheel Not Used	59.10	50.57	349,798,949	Savings of
16	261	56.8	51	261	20.78	46.72	70.48	56.87	677,160,954		56.80	46.72	270,326,582	Savings of
17	219	56.2	49	219	19.69	40.45	70.42	56.25	555,925,623		56.20	40.45	173,040,540	Savings of
18	250	54.5	47	250	18.65	36.20	70.25	55.82	621,143,283		54.50	36.20	138,452,607	Savings of
19	313	51.4	45	313	17.64	34.42	69.94	55.64	761,391,328		51.40	34.42	101,961,423	Savings of
20	289	49	43	289	16.67	31.76	69.70	55.38	688,504,707		67.40	52.75	523,996,836	Savings of
21	285	46.8	41	285	15.73	29.00	69.48	55.10	665,159,428		66.96	52.20	504,628,986	Savings of
22	327	44.1	39	327	14.82	27.24	69.21	54.92	747,840,114		66.42	51.85	565,541,008	Savings of
23	332	42.3	37	332	13.94	24.25	69.03	54.62	744,226,445		66.06	51.25	560,992,123	Savings of
24	377	39.8	35	377	13.08	22.55	68.78	54.45	828,516,831		65.56	50.91	622,487,717	Savings of
25	419	36.7	33	419	12.26	21.96	68.47	54.40	902,904,213		64.94	50.79	676,127,207	Savings of
26	414	35.1	31	414	11.45	19.04	68.31	54.10	874,596,731	Wheel Use at Full Capacity	64.62	50.21	652,683,921	Savings of
27	264	33.1	29	264	10.67	16.79	68.11	53.88	546,612,812		64.22	49.76	406,469,555	Savings of
28	179	30.8	27	179	9.91	15.20	67.88	53.72	363,338,161		63.76	49.44	269,213,069	Savings of
29	163	28.5	25	163	9.16	13.77	67.65	53.58	324,443,836		63.30	49.15	239,522,011	Savings of
30	158	26.3	23	158	8.44	12.35	67.43	53.44	308,466,471		62.86	48.87	226,891,203	Savings of
31	108	24	21	108	7.73	11.23	67.20	53.32	206,850,656		62.40	48.65	151,582,663	Savings of
32	86	21.9	19	86	7.04	9.93	66.99	53.19	161,622,750		61.98	48.39	117,993,586	Savings of
33	63	19.7	17	63	6.36	8.90	66.77	53.09	116,191,918		61.54	48.18	84,502,559	Savings of
34	74	17.7	15	74	5.70	7.69	66.57	52.97	133,957,627		61.14	47.94	97,045,594	Savings of
35	41	15.3	13	41	5.05	7.19	66.33	52.92	72,851,062		60.66	47.84	52,568,267	Savings of
36	35	12.8	11	35	4.42	6.95	66.08	52.90	61,046,409		60.16	47.79	43,872,577	Savings of
37	17	10.8	9	17	3.79	6.02	65.88	52.80	29,110,062		59.76	47.60	20,835,081	Savings of
38	13	8.3	7	13	3.17	5.95	65.63	52.79	21,852,949		59.26	47.59	15,575,202	Savings of
39	6	6.5	5	6	2.57	4.87	65.45	52.69	9,902,749		58.90	47.37	7,027,880	Savings of
40	1	6.1	3	1	1.99	1.71	65.41	52.37	1,620,999		58.82	46.74	1,145,480	Savings of
41	1	1.9	1	1	1.39	4.45	64.99	52.65	1,590,587		57.98	47.29	1,118,811	Savings of

4795

8760 Operating Hours/Year Used for Analysis 7994

22,838,268,006

17,860,880,025

Cooling Savings Percent

Savings
Amount
(BTU)

11,129,937
34,989,528
87,395,081
138,769,392
189,892,437
213,513,123
238,428,422
265,976,485
244,524,765
241,103,718
209,898,704
237,159,716
214,335,126
302,024,377
369,070,071
406,834,371
382,885,083
482,690,676
659,429,905
164,507,871
160,530,442
182,299,107
183,234,322
206,029,115
226,777,007
221,912,810
140,143,258
94,125,092
84,921,825
81,575,268
55,267,993
43,629,165
31,689,359
36,912,032
20,282,796
17,173,832
8,274,981
6,277,747
2,874,869
475,519
471,776

4,977,387,981

21.8

Outdoor Air TMY -2* Design Weather Data for Baltimore, MD

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	Total Annual BIN Hours	Mean Coincident Dry Bulb	Wet Bulb BIN Data	BIN Hours Used for Analysis	Enthalpy BTU/LB	Moisture GR./LB.	Mixed Air DB	Mixed Air Gr	BTU VAV	Wheel Spin Percentage Latent	Wheel Spin Percentage Sensible	Wheel Use Category	Wheeled Air DB (F)	Wheeled Air Gr (Gr/lb)	BTU Usage	Savings Check	Amount of Savings or Loss
1	15	90.3	81	15	44.82	147.17	73.83	66.92	56,789,999				75.66	75.83	45,660,062	Savings of	11,129,937
2	48	86.6	79	48	41.73	139.38	73.46	66.14	176,639,846				74.92	74.28	141,650,318	Savings of	34,989,528
3	122	85.3	77	122	39.76	128.25	73.33	65.02	436,475,155				74.66	72.05	349,080,074	Savings of	87,395,081
4	197	82.6	75	197	37.89	120.02	73.06	64.20	685,689,726				74.12	70.40	546,920,334	Savings of	138,769,392
5	274	79.3	73	274	36.11	113.35	72.73	63.53	928,378,130				73.46	69.07	738,485,693	Savings of	189,892,437
6	313	76.3	71	313	34.41	106.71	72.43	62.87	1,032,832,756			Wheel Use at Full Capacity	72.86	67.74	819,319,633	Savings of	213,513,123
7	355	76	69	355	32.75	96.16	72.40	61.82	1,141,078,388				72.80	65.63	902,649,966	Savings of	238,428,422
8	402	74.2	67	402	31.19	88.54	72.22	61.05	1,259,502,152				72.44	64.11	993,525,667	Savings of	265,976,485
9	375	72.5	65	375	29.69	81.22	72.05	60.32	1,145,760,910				72.10	62.64	901,236,145	Savings of	244,524,765
10	375	69.4	63	375	28.26	76.59	71.74	59.86	1,117,966,482				71.48	61.72	876,862,764	Savings of	241,103,718
11	331	69.1	61	331	26.87	67.83	71.71	58.98	963,104,570				71.42	59.97	753,205,867	Savings of	209,898,704
12	379	65.9	59	379	25.56	64.13	71.39	58.61	1,076,953,807				70.78	59.23	839,794,091	Savings of	237,159,716
13	347	64.1	57	347	24.29	58.53	71.21	58.05	963,270,493				70.42	58.11	748,935,367	Savings of	214,335,126
14	261	61.3	55	261	23.08	54.88	70.93	57.69	708,127,864				61.30	54.88	406,103,487	Savings of	302,024,377
15	271	59.1	53	271	21.91	50.57	70.71	57.26	718,869,020				59.10	50.57	349,798,949	Savings of	369,070,071
16	261	56.8	51	261	20.78	46.72	70.48	56.87	677,160,954			Wheel Not in Use	56.80	46.72	270,326,582	Savings of	406,834,371
17	219	56.2	49	219	19.69	40.45	70.42	56.25	555,925,623				56.20	40.45	173,040,540	Savings of	382,885,083
18	250	54.5	47	250	18.65	36.20	70.25	55.82	621,143,283				54.50	36.20	138,452,607	Savings of	482,690,676
19	313	51.4	45	313	17.64	34.42	69.94	55.64	761,391,328				51.40	34.42	101,961,423	Savings of	659,429,905
20	289	49	43	289	16.67	31.76	69.70	55.38	688,504,707	0.15	-0.22		51.84	35.00	106,797,256	Savings of	581,707,451
21	285	46.8	41	285	15.73	29.00	69.48	55.10	665,159,428	0.26	-0.09		52.02	35.00	107,960,960	Savings of	557,198,468
22	327	44.1	39	327	14.82	27.24	69.21	54.92	747,840,114	0.32	0.04		51.14	35.00	108,444,190	Savings of	639,395,924
23	332	42.3	37	332	13.94	24.25	69.03	54.62	744,226,445	0.40	0.11		51.76	35.00	121,200,695	Savings of	623,025,750
24	377	39.8	35	377	13.08	22.55	68.78	54.45	828,516,831	0.44	0.20		51.11	35.00	124,392,382	Savings of	704,124,450
25	419	36.7	33	419	12.26	21.96	68.47	54.40	902,904,213	0.45	0.29		49.47	35.00	101,229,230	Savings of	801,674,983
26	414	35.1	31	414	11.45	19.04	68.31	54.10	874,596,731	0.51	0.34		50.22	35.00	116,649,772	Savings of	757,946,959
27	264	33.1	29	264	10.67	16.79	68.11	53.88	546,612,812	0.55	0.38		50.29	35.00	75,397,582	Savings of	471,215,231
28	179	30.8	27	179	9.91	15.20	67.88	53.72	363,338,161	0.58	0.43		49.86	35.00	46,986,991	Savings of	316,351,170
29	163	28.5	25	163	9.16	13.77	67.65	53.58	324,443,836	0.60	0.47		49.38	35.00	38,533,282	Savings of	285,910,555
30	158	26.3	23	158	8.44	12.35	67.43	53.44	308,466,471	0.62	0.51		48.97	35.00	33,912,893	Savings of	274,553,578
31	108	24	21	108	7.73	11.23	67.20	53.32	206,850,656	0.64	0.55	Wheel Use Modified	48.40	35.00	19,809,384	Savings of	187,041,272
32	86	21.9	19	86	7.04	9.93	66.99	53.19	161,622,750	0.65	0.58		48.03	35.00	14,074,025	Savings of	147,548,726
33	63	19.7	17	63	6.36	8.90	66.77	53.09	116,191,918	0.66	0.60		47.50	35.00	8,500,860	Savings of	107,691,058
34	74	17.7	15	74	5.70	7.69	66.57	52.97	133,957,627	0.68	0.63		47.18	35.00	8,702,196	Savings of	125,255,431
35	41	15.3	13	41	5.05	7.19	66.33	52.92	72,851,062	0.68	0.65		46.33	35.00	2,949,588	Savings of	69,901,475
36	35	12.8	11	35	4.42	6.95	66.08	52.90	61,046,409	0.69	0.68		45.33	35.00	619,810	Savings of	60,426,599
37	17	10.8	9	17	3.79	6.02	65.88	52.80	29,110,062	0.70	0.70		45.00	35.07	39,738	Savings of	29,070,324
38	13	8.3	7	13	3.17	5.95	65.63	52.79	21,852,949	0.70	0.72		45.00	35.94	414,384	Savings of	21,438,565
39	6	6.5	5	6	2.57	4.87	65.45	52.69	9,902,749	0.71	0.73		45.00	36.10	224,180	Savings of	9,678,569
40	1	6.1	3	1	1.99	1.71	65.41	52.37	1,620,999	0.74	0.74		45.00	34.94	-2,187	Savings of	1,623,187
41	1	1.9	1	1	1.39	4.45	64.99	52.65	1,590,587	0.71	0.77		45.00	37.38	80,792	Savings of	1,509,795

4795
Total Operating Hours/Year Used for Analysis 7994

22,838,268,006

11,133,927,571

11,704,340,435

Cooling Savings Percent 51.2