

# ***TURBOMAX***<sup>®</sup>

***Instantaneous Indirect Water Heater***

## **Sizing Guide**

APARTMENTS, CONDOMINIUMS, HOTELS, MOTELS



The *TURBOMAX*<sup>™</sup> Sizing Guide shows requirements for multiple dwellings. The bathing or shower load depends on the building size. Take into account the number of units and unit occupancy, the type of shower heads utilized and the peak demand period over which the bathing load is spread. The requirements for hot water for other large loads such as clothes washers, have not been considered. Provide additional storage and recovery capacity to satisfy the needs of these additional loads. The requirements of recovery capacity and storage capacity may, in some areas, be fixed on a per apartment or per person basis by building codes or housing authorities. In these cases, the designer must meet the specified requirements.

To use the tables, determine number of apartments from column (1). Secondly determine number of occupants from column (1). If average occupancy differs from the average per unit, disregard column (1) and use column (2) "the actual number of persons" for estimating the gallons required (3), the *TURBOMAX* model & No. of units (4), the boiler size (5). Two methods of installations are proposed: *TURBOMAX* UNITS ONLY and *TURBOMAX* UNITS & THERMAL STORAGE, adding extra flexibility.

# Sizing guide : Apartments and Condominiums

## 3 HOUR PEAK PERIOD:

Use Dormitories sizing guide if apartment building houses students.

- Boiler water & Turbomax aquastat at 180°F.
- Thermostatic mixing valve at 140°F (maximum setting).
- Domestic cold water inlet is no less than 40°F.

Minimum requirements for an average occupancy of 2-1/2 persons per apartment & 5 minutes showers and 3 GPM shower flow rate. Includes shower load and other minor uses such as lavatories and residential dishwasher. If shower flow up to 5 GPM then multiply gallon requirements in chart (column 3) by 1.6

NOTE: Other major appliances or hot water fixtures such as clothes washers, coin-operated washing machines, whirlpools, commercial dishwashers or multiples showers will increase the total demand. Add extra hot water generating capacity accordingly. Consult manufacturers specifications for hot water consumption.

Number of Apartments 2 & 1/2 Persons (1)	Actual No. Of Persons (2)	Gallons Required 3 Hour Period (3)	OPTION A : TURBOMAX UNITS ONLY			OPTION B : TURBOMAX UNITS & THERMAL MASS STORAGE			
			TURBOMAX Model No. Number of units (4)	Boiler Size Net Output BTU /hour (5)	Pump Flow Rate US gpm 20°F (TD) (6)	TURBOMAX Model No. Number of units (7)	Thermal Mass Storage Model No. (8)	Boiler Size Net Output BTU /hour (9)	Pump Flow Rate US gpm 20°F (TD) (10)
1 to 4	10	118	1 x TURBOMAX 50-3	121,733	12	1 x TURBOMAX 50-3	1 x BUFFMAX 50	50,000	5
5 to 6	15	180	1 x TURBOMAX 50-3	190,190	19	1 x TURBOMAX 50-3	1 x BUFFMAX 50	50,000	5
7 to 8	20	238	1 x TURBOMAX 50-3	222,812	22	1 x TURBOMAX 50-3	1 x BUFFMAX 80	50,000	5
9 to 10	25	293	1 x TURBOMAX 80-5	134,875	14	1 x TURBOMAX 80-5	1 x BUFFMAX 50	59,815	6
11 to 15	38	421	1 x TURBOMAX 80-5	217,231	22	1 x TURBOMAX 80-5	1 x BUFFMAX 80	90,802	9
16 to 20	50	541	1 x TURBOMAX 80-5	309,206	31	1 x TURBOMAX 80-5	1 x BUFFMAX 120	120,018	12
21 to 25	63	655	1 x TURBOMAX 120-9	209,979	21	1 x TURBOMAX 120-9	1 x BUFFMAX 80	148,238	15
26 to 30	75	764	1 x TURBOMAX 120-9	287,801	29	1 x TURBOMAX 120-9	1 x BUFFMAX 80	175,296	18
31 to 35	88	869	1 x TURBOMAX 120-9	345,735	35	1 x TURBOMAX 120-9	1 x BUFFMAX 120	201,469	20
36 to 40	100	971	1 x TURBOMAX 120-9	399,923	40	1 x TURBOMAX 120-9	1 x BUFFMAX 120	227,033	23
41 to 45	113	1,069	1 x TURBOMAX 120-9	453,585	46	1 x TURBOMAX 120-9	1 x BUFFMAX 120	251,490	25
46 to 50	125	1,166	1 x TURBOMAX 120-9	532,149	53	1 x TURBOMAX 120-9	1 x BUFFMAX 120	276,501	28
51 to 55	138	1,260	1 x TURBOMAX 120-9	584,033	59	1 x TURBOMAX 120-9	1 x BUFFMAX 120	302,507	30
56 to 60	150	1,352	1 x TURBOMAX 120-9	633,534	64	1 x TURBOMAX 120-9	2 x BUFFMAX 120	322,483	32
61 to 65	163	1,443	1 x TURBOMAX 120-9	683,059	69	1 x TURBOMAX 120-9	2 x BUFFMAX 120	345,446	35
66 to 70	175	1,531	1 x TURBOMAX 120-9	734,624	74	1 x TURBOMAX 120-9	2 x BUFFMAX 120	367,358	37
71 to 75	188	1,619	1 x TURBOMAX 120-9	782,172	79	1 x TURBOMAX 120-9	2 x BUFFMAX 120	389,713	39
76 to 80	200	1,704	1 x TURBOMAX 120-9	831,756	84	1 x TURBOMAX 120-9	2 x BUFFMAX 120	411,016	41
81 to 85	213	1,789	1 x TURBOMAX 120-9	849,877	85	1 x TURBOMAX 120-9	2 x BUFFMAX 120	432,319	43
86 to 90	225	1,872	2 x TURBOMAX 120-9	471,827	47	2 x TURBOMAX 120-9	1 x BUFFMAX 120	453,291	46
91 to 95	238	1,954	2 x TURBOMAX 120-9	494,514	50	2 x TURBOMAX 120-9	1 x BUFFMAX 120	473,764	48
96 to 100	250	2,035	2 x TURBOMAX 120-9	516,924	52	2 x TURBOMAX 120-9	1 x BUFFMAX 120	494,182	50
101 to 110	275	2,194	2 x TURBOMAX 120-9	566,607	57	2 x TURBOMAX 120-9	1 x BUFFMAX 120	537,868	54
111 to 120	300	2,349	2 x TURBOMAX 120-9	657,123	66	2 x TURBOMAX 120-9	2 x BUFFMAX 120	573,087	58
121 to 130	325	2,500	2 x TURBOMAX 120-9	727,148	73	2 x TURBOMAX 120-9	2 x BUFFMAX 120	610,880	61
131 to 140	350	2,649	2 x TURBOMAX 120-9	795,272	80	2 x TURBOMAX 120-9	2 x BUFFMAX 120	648,119	65
141 to 150	375	2,794	2 x TURBOMAX 120-9	861,751	87	2 x TURBOMAX 120-9	2 x BUFFMAX 120	684,252	69
151 to 160	400	2,937	2 x TURBOMAX 120-9	924,606	93	2 x TURBOMAX 120-9	3 x BUFFMAX 120	720,053	72
161 to 170	425	3,077	2 x TURBOMAX 120-9	988,519	99	2 x TURBOMAX 120-9	3 x BUFFMAX 120	754,802	76
171 to 180	450	3,214	2 x TURBOMAX 120-9	1,051,312	106	2 x TURBOMAX 120-9	3 x BUFFMAX 120	788,721	79
181 to 190	475	3,350	2 x TURBOMAX 120-9	1,113,114	112	2 x TURBOMAX 120-9	3 x BUFFMAX 120	822,364	83
191 to 200	500	3,483	2 x TURBOMAX 120-9	1,172,260	118	2 x TURBOMAX 120-9	3 x BUFFMAX 120	855,398	86
201 to 210	525	3,614	2 x TURBOMAX 120-9	1,203,132	121	2 x TURBOMAX 120-9	3 x BUFFMAX 120	887,657	89
211 to 220	550	3,744	2 x TURBOMAX 120-9	1,261,932	127	2 x TURBOMAX 120-9	4 x BUFFMAX 120	919,640	92
221 to 230	575	3,871	2 x TURBOMAX 120-9	1,321,645	133	2 x TURBOMAX 120-9	4 x BUFFMAX 120	950,571	95
231 to 240	600	3,997	2 x TURBOMAX 120-9	1,379,247	138	2 x TURBOMAX 120-9	4 x BUFFMAX 120	981,447	99
241 to 250	625	4,121	2 x TURBOMAX 120-9	1,404,446	141	2 x TURBOMAX 120-9	4 x BUFFMAX 120	1,011,770	102
251 to 260	650	4,243	2 x TURBOMAX 120-9	1,461,888	147	2 x TURBOMAX 120-9	4 x BUFFMAX 120	1,041,318	105
261 to 270	675	4,364	2 x TURBOMAX 120-9	1,518,860	152	2 x TURBOMAX 120-9	4 x BUFFMAX 120	1,070,589	107
271 to 280	700	4,484	2 x TURBOMAX 120-9	1,541,885	155	2 x TURBOMAX 120-9	5 x BUFFMAX 120	1,099,584	110
281 to 290	725	4,602	3 x TURBOMAX 120-9	1,226,050	123	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,128,025	113
291 to 300	750	4,718	3 x TURBOMAX 120-9	1,285,812	129	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,155,692	116
301 to 350	875	5,281	3 x TURBOMAX 120-9	1,517,416	152	3 x TURBOMAX 120-9	5 x BUFFMAX 120	1,289,322	129
351 to 400	1,000	5,816	3 x TURBOMAX 120-9	1,771,132	178	3 x TURBOMAX 120-9	6 x BUFFMAX 120	1,413,435	142

# Sizing guide : Apartments and Condominiums

## 3 HOUR PEAK PERIOD:

Use Dormitories sizing guide if apartment building houses students.

- Boiler water & Turbomax aquastat at 160°F and return at 130°F
- Thermostatic mixing valve at 140°F (maximum setting).
- Domestic cold water inlet is no less than 40°F.

Minimum requirements for an average occupancy of 2-1/2 persons per apartment & 5 minutes showers and 3 GPM shower flow rate. Includes shower load and other minor uses such as lavatories and residential dishwasher. If shower flow up to 5 GPM then multiply gallon requirements in chart (column 3) by 1.6

NOTE: Other major appliances or hot water fixtures such as clothes washers, coin-operated washing machines, whirlpools, commercial dishwashers or multiples showers will increase the total demand. Add extra hot water generating capacity accordingly. Consult manufacturers specifications for hot water consumption.

Number of Apartments 2 & 1/2 Persons (1)	Actual No. Of Persons (2)	Gallons Required 3 Hour Period (3)	OPTION A : TURBOMAX UNITS ONLY			OPTION B : TURBOMAX UNITS & THERMAL MASS STORAGE			
			TURBOMAX Model No. Number of units (4)	Boiler Size Net Output BTU /hour (5)	Pump Flow Rate US gpm 30°F (TD) (6)	TURBOMAX Model No. Number of units (7)	Thermal Mass Storage Model No. (8)	Boiler Size Net Output BTU /hour (9)	Pump Flow Rate US gpm 30°F (TD) (10)
1 to 4	10	118	1 x TURBOMAX 50-3	200,781	13	1 x TURBOMAX 50-3	1 x BUFFMAX 50	50,000	3
5 to 6	15	180	1 x TURBOMAX 80-5	153,332	10	1 x TURBOMAX 80-5	1 x BUFFMAX 50	50,000	3
7 to 8	20	238	1 x TURBOMAX 80-5	190,614	13	1 x TURBOMAX 80-5	1 x BUFFMAX 80	50,000	3
9 to 10	25	293	1 x TURBOMAX 80-5	238,625	16	1 x TURBOMAX 80-5	1 x BUFFMAX 120	59,815	4
11 to 15	38	421	1 x TURBOMAX 80-5	311,679	21	1 x TURBOMAX 80-5	1 x BUFFMAX 120	90,802	6
16 to 20	50	541	1 x TURBOMAX 120-9	288,069	19	1 x TURBOMAX 120-9	1 x BUFFMAX 120	120,018	8
21 to 25	63	655	1 x TURBOMAX 120-9	349,185	23	1 x TURBOMAX 120-9	1 x BUFFMAX 120	148,293	10
26 to 30	75	764	1 x TURBOMAX 120-9	433,229	29	1 x TURBOMAX 120-9	1 x BUFFMAX 120	178,450	12
31 to 35	88	869	1 x TURBOMAX 120-9	488,839	33	1 x TURBOMAX 120-9	2 x BUFFMAX 120	201,469	13
36 to 40	100	971	1 x TURBOMAX 120-9	541,774	36	1 x TURBOMAX 120-9	2 x BUFFMAX 120	227,033	15
41 to 45	113	1,069	1 x TURBOMAX 120-9	594,332	40	1 x TURBOMAX 120-9	2 x BUFFMAX 120	251,490	17
46 to 50	125	1,166	2 x TURBOMAX 120-9	312,013	21	2 x TURBOMAX 120-9	1 x BUFFMAX 120	275,671	18
51 to 55	138	1,260	2 x TURBOMAX 120-9	364,791	24	2 x TURBOMAX 120-9	1 x BUFFMAX 120	299,243	20
56 to 60	150	1,352	2 x TURBOMAX 120-9	414,163	28	2 x TURBOMAX 120-9	1 x BUFFMAX 120	324,668	22
61 to 65	163	1,443	2 x TURBOMAX 120-9	463,570	31	2 x TURBOMAX 120-9	2 x BUFFMAX 120	345,446	23
66 to 70	175	1,531	2 x TURBOMAX 120-9	515,891	35	2 x TURBOMAX 120-9	2 x BUFFMAX 120	367,358	25
71 to 75	188	1,619	2 x TURBOMAX 120-9	562,475	38	2 x TURBOMAX 120-9	2 x BUFFMAX 120	389,713	26
76 to 80	200	1,704	2 x TURBOMAX 120-9	611,965	41	2 x TURBOMAX 120-9	2 x BUFFMAX 120	411,016	28
81 to 85	213	1,789	2 x TURBOMAX 120-9	637,854	43	2 x TURBOMAX 120-9	2 x BUFFMAX 120	432,319	29
86 to 90	225	1,872	2 x TURBOMAX 120-9	684,068	46	2 x TURBOMAX 120-9	2 x BUFFMAX 120	453,291	30
91 to 95	238	1,954	2 x TURBOMAX 120-9	732,860	49	2 x TURBOMAX 120-9	3 x BUFFMAX 120	473,764	32
96 to 100	250	2,035	2 x TURBOMAX 120-9	779,426	52	2 x TURBOMAX 120-9	3 x BUFFMAX 120	494,182	33
101 to 110	275	2,194	2 x TURBOMAX 120-9	845,805	57	2 x TURBOMAX 120-9	3 x BUFFMAX 120	534,188	36
111 to 120	300	2,349	2 x TURBOMAX 120-9	938,917	63	2 x TURBOMAX 120-9	3 x BUFFMAX 120	573,087	38
121 to 130	325	2,500	2 x TURBOMAX 120-9	1,003,163	67	2 x TURBOMAX 120-9	3 x BUFFMAX 120	610,880	41
131 to 140	350	2,649	2 x TURBOMAX 120-9	1,066,052	71	2 x TURBOMAX 120-9	4 x BUFFMAX 120	648,119	43
141 to 150	375	2,794	2 x TURBOMAX 120-9	1,127,765	75	2 x TURBOMAX 120-9	4 x BUFFMAX 120	684,252	46
151 to 160	400	2,937	2 x TURBOMAX 120-9	1,186,890	79	2 x TURBOMAX 120-9	4 x BUFFMAX 120	720,053	48
161 to 170	425	3,077	3 x TURBOMAX 120-9	923,956	62	3 x TURBOMAX 120-9	3 x BUFFMAX 120	754,802	51
171 to 180	450	3,214	3 x TURBOMAX 120-9	987,677	66	3 x TURBOMAX 120-9	4 x BUFFMAX 120	788,721	53
181 to 190	475	3,350	3 x TURBOMAX 120-9	1,050,337	70	3 x TURBOMAX 120-9	4 x BUFFMAX 120	822,364	55
191 to 200	500	3,483	3 x TURBOMAX 120-9	1,110,150	74	3 x TURBOMAX 120-9	4 x BUFFMAX 120	855,398	57
201 to 210	525	3,614	3 x TURBOMAX 120-9	1,143,227	77	3 x TURBOMAX 120-9	4 x BUFFMAX 120	887,657	59
211 to 220	550	3,744	3 x TURBOMAX 120-9	1,202,670	81	3 x TURBOMAX 120-9	5 x BUFFMAX 120	919,640	62
221 to 230	575	3,871	3 x TURBOMAX 120-9	1,263,091	85	3 x TURBOMAX 120-9	5 x BUFFMAX 120	950,571	64
231 to 240	600	3,997	3 x TURBOMAX 120-9	1,321,251	88	3 x TURBOMAX 120-9	5 x BUFFMAX 120	981,447	66
241 to 250	625	4,121	3 x TURBOMAX 120-9	1,348,249	90	3 x TURBOMAX 120-9	5 x BUFFMAX 120	1,011,770	68
251 to 260	650	4,243	3 x TURBOMAX 120-9	1,406,237	94	3 x TURBOMAX 120-9	6 x BUFFMAX 120	1,041,318	70
261 to 270	675	4,364	3 x TURBOMAX 120-9	1,463,721	98	3 x TURBOMAX 120-9	6 x BUFFMAX 120	1,070,589	72
271 to 280	700	4,484	3 x TURBOMAX 120-9	1,488,391	100	3 x TURBOMAX 120-9	6 x BUFFMAX 120	1,099,584	74
281 to 290	725	4,602	3 x TURBOMAX 120-9	1,544,493	103	3 x TURBOMAX 120-9	6 x BUFFMAX 120	1,128,025	76
291 to 300	750	4,718	3 x TURBOMAX 120-9	1,601,409	107	3 x TURBOMAX 120-9	None	1,601,409	107
301 to 350	875	5,281	4 x TURBOMAX 120-9	1,566,101	105	4 x TURBOMAX 120-9	None	1,566,101	105
351 to 400	1,000	5,816	4 x TURBOMAX 120-9	1,817,221	122	4 x TURBOMAX 120-9	None	1,817,221	122

# Sizing guide : Apartments and Condominiums

## 2 HOUR PEAK PERIOD:

Use 2 hour peak demand if majority of apartment residents need to be somewhere in the morning (working couples, families with school aged children) or public assistance.

- Boiler water & Turbomax aquastat at 180°F.
- Thermostatic mixing valve at 140°F (maximum setting).
- Domestic cold water inlet is no less than 40°F.

Minimum requirements for an average occupancy of 2-1/2 persons per apartment & 5 minutes showers and 3 GPM shower flow rate. Includes shower load and other minor uses such as lavatories and residential dishwasher. If shower flow up to 5 GPM then multiply gallon requirements in chart (column 3) by 1.6

NOTE: Other major appliances or hot water fixtures such as clothes washers, coin-operated washing machines, whirlpools, commercial dishwashers or multiples showers will increase the total demand. Add extra hot water generating capacity accordingly. Consult manufacturers specifications for hot water consumption.

Number of Apartments 2 & 1/2 Persons (1)	Actual No. Of Persons (2)	Gallons Required 2 Hours Period (3)	OPTION A : TURBOMAX UNITS ONLY			OPTION B : TURBOMAX UNITS & THERMAL MASS STORAGE			
			TURBOMAX Model No. Number of units (4)	Boiler Size Net Output BTU /hour (5)	Pump Flow Rate US gpm 20°F (TD) (6)	TURBOMAX Model No. Number of units (7)	Thermal Mass Storage Model No. (8)	Boiler Size Net Output BTU /hour (9)	Pump Flow Rate US gpm 20°F (TD) (10)
1 to 4	10	118	1 x TURBOMAX 50-3	152,167	15	1 x TURBOMAX 50-3	1 x BUFFMAX 50	50,000	5
5 to 6	15	180	1 x TURBOMAX 80-5	51,460	5	1 x TURBOMAX 80-5	1 x BUFFMAX 50	50,000	5
7 to 8	20	238	1 x TURBOMAX 80-5	126,503	13	1 x TURBOMAX 80-5	1 x BUFFMAX 50	69,886	7
9 to 10	25	293	1 x TURBOMAX 120-9	87,026	9	1 x TURBOMAX 120-9	None	87,026	9
11 to 15	38	421	1 x TURBOMAX 120-9	140,146	14	1 x TURBOMAX 120-9	1 x BUFFMAX 50	136,203	14
16 to 20	50	541	1 x TURBOMAX 120-9	210,953	21	1 x TURBOMAX 120-9	1 x BUFFMAX 50	180,027	18
21 to 25	63	655	1 x TURBOMAX 120-9	314,968	32	1 x TURBOMAX 120-9	1 x BUFFMAX 80	222,357	22
26 to 30	75	764	1 x TURBOMAX 120-9	413,714	42	1 x TURBOMAX 120-9	1 x BUFFMAX 80	262,944	26
31 to 35	88	869	1 x TURBOMAX 120-9	508,434	51	1 x TURBOMAX 120-9	1 x BUFFMAX 120	302,203	30
36 to 40	100	971	1 x TURBOMAX 120-9	577,667	58	1 x TURBOMAX 120-9	1 x BUFFMAX 120	340,549	34
41 to 45	113	1,069	1 x TURBOMAX 120-9	668,441	67	1 x TURBOMAX 120-9	1 x BUFFMAX 120	377,235	38
46 to 50	125	1,166	2 x TURBOMAX 120-9	414,751	42	2 x TURBOMAX 120-9	1 x BUFFMAX 50	413,506	42
51 to 55	138	1,260	2 x TURBOMAX 120-9	453,761	46	2 x TURBOMAX 120-9	1 x BUFFMAX 50	448,864	45
56 to 60	150	1,352	2 x TURBOMAX 120-9	491,941	49	2 x TURBOMAX 120-9	1 x BUFFMAX 50	483,724	49
61 to 65	163	1,443	2 x TURBOMAX 120-9	529,706	53	2 x TURBOMAX 120-9	1 x BUFFMAX 50	518,169	52
66 to 70	175	1,531	2 x TURBOMAX 120-9	566,226	57	2 x TURBOMAX 120-9	1 x BUFFMAX 80	551,037	55
71 to 75	188	1,619	2 x TURBOMAX 120-9	602,746	61	2 x TURBOMAX 120-9	1 x BUFFMAX 80	584,569	59
76 to 80	200	1,704	2 x TURBOMAX 120-9	638,021	64	2 x TURBOMAX 120-9	1 x BUFFMAX 120	616,524	62
81 to 85	213	1,789	2 x TURBOMAX 120-9	673,296	68	2 x TURBOMAX 120-9	1 x BUFFMAX 120	648,479	65
86 to 90	225	1,872	2 x TURBOMAX 120-9	707,741	71	2 x TURBOMAX 120-9	1 x BUFFMAX 120	679,936	68
91 to 95	238	1,954	2 x TURBOMAX 120-9	741,771	74	2 x TURBOMAX 120-9	1 x BUFFMAX 120	710,646	90
96 to 100	250	2,035	2 x TURBOMAX 120-9	775,386	78	2 x TURBOMAX 120-9	1 x BUFFMAX 120	741,273	74
101 to 110	275	2,194	2 x TURBOMAX 120-9	841,371	84	2 x TURBOMAX 120-9	1 x BUFFMAX 120	806,802	81
111 to 120	300	2,349	2 x TURBOMAX 120-9	905,696	91	2 x TURBOMAX 120-9	2 x BUFFMAX 120	859,631	86
121 to 130	325	2,500	2 x TURBOMAX 120-9	968,361	97	2 x TURBOMAX 120-9	2 x BUFFMAX 120	916,320	92
131 to 140	350	2,649	2 x TURBOMAX 120-9	1,067,937	107	2 x TURBOMAX 120-9	2 x BUFFMAX 120	972,179	98
141 to 150	375	2,794	3 x TURBOMAX 120-9	1,055,802	106	3 x TURBOMAX 120-9	1 x BUFFMAX 120	1,026,378	103
151 to 160	400	2,937	3 x TURBOMAX 120-9	1,115,147	112	3 x TURBOMAX 120-9	1 x BUFFMAX 120	1,080,577	108
161 to 170	425	3,077	3 x TURBOMAX 120-9	1,173,247	118	3 x TURBOMAX 120-9	1 x BUFFMAX 120	1,138,677	114
171 to 180	450	3,214	3 x TURBOMAX 120-9	1,230,102	124	3 x TURBOMAX 120-9	2 x BUFFMAX 120	1,183,082	119
181 to 190	475	3,350	3 x TURBOMAX 120-9	1,286,542	129	3 x TURBOMAX 120-9	2 x BUFFMAX 120	1,233,546	124
191 to 200	500	3,483	3 x TURBOMAX 120-9	1,341,737	135	3 x TURBOMAX 120-9	2 x BUFFMAX 120	1,283,097	129
201 to 210	525	3,614	3 x TURBOMAX 120-9	1,396,102	140	3 x TURBOMAX 120-9	2 x BUFFMAX 120	1,331,486	134
211 to 220	550	3,744	3 x TURBOMAX 120-9	1,450,052	146	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,379,460	139
221 to 230	575	3,871	3 x TURBOMAX 120-9	1,502,757	151	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,425,857	143
231 to 240	600	3,997	3 x TURBOMAX 120-9	1,555,047	156	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,472,171	148
241 to 250	625	4,121	3 x TURBOMAX 120-9	1,606,507	161	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,517,655	152
251 to 260	650	4,243	3 x TURBOMAX 120-9	1,657,137	166	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,561,977	157
261 to 270	675	4,364	3 x TURBOMAX 120-9	1,707,352	171	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,605,884	161
271 to 280	700	4,484	3 x TURBOMAX 120-9	1,757,152	176	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,649,376	166
281 to 290	725	4,602	3 x TURBOMAX 120-9	1,806,122	181	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,692,038	170
291 to 300	750	4,718	3 x TURBOMAX 120-9	1,854,262	186	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,733,538	174
301 to 350	875	5,281	4 x TURBOMAX 120-9	2,053,337	206	4 x TURBOMAX 120-9	4 x BUFFMAX 120	1,933,983	194
351 to 400	1,000	5,816	4 x TURBOMAX 120-9	2,275,362	228	4 x TURBOMAX 120-9	5 x BUFFMAX 120	2,120,152	213

# Sizing guide : Apartments and Condominiums

## 2 HOUR PEAK PERIOD:

Use 2 hour peak demand if majority of apartment residents need to be somewhere in the morning (working couples, families with school aged children) or public assistance.

- **Boiler water & Turbomax aquastat at 160°F and return at 130°F**
- Thermostatic mixing valve at 140°F (maximum setting).
- Domestic cold water inlet is no less than 40°F.

Minimum requirements for an average occupancy of 2-1/2 persons per apartment & 5 minutes showers and 3 GPM shower flow rate. Includes shower load and other minor uses such as lavatories and residential dishwasher. If shower flow up to 5 GPM then multiply gallon requirements in chart (column 3) by 1.6

NOTE: Other major appliances or hot water fixtures such as clothes washers, coin-operated washing machines, whirlpools, commercial dishwashers or multiples showers will increase the total demand. Add extra hot water generating capacity accordingly. Consult manufacturers specifications for hot water consumption.

Number of Apartments 2 & 1/2 Persons (1)	Actual No. Of Persons (2)	Gallons Required 2 Hours Period (3)	OPTION A : TURBOMAX UNITS ONLY			OPTION B : TURBOMAX UNITS & THERMAL MASS STORAGE			
			TURBOMAX Model No. Number of units (4)	Boiler Size Net Output BTU /hour (5)	Pump Flow Rate US gpm 30°F (TD) (6)	TURBOMAX Model No. Number of units (7)	Thermal Mass Storage Model No. (8)	Boiler Size Net Output BTU /hour (9)	Pump Flow Rate US gpm 30°F (TD) (10)
1 to 4	10	118	1 x TURBOMAX 50-3	250,976	17	1 x TURBOMAX 50-3	1 x BUFFMAX 50	50,000	3
5 to 6	15	180	1 x TURBOMAX 80-5	187,405	13	1 x TURBOMAX 80-5	1 x BUFFMAX 50	50,000	3
7 to 8	20	238	1 x TURBOMAX 80-5	275,331	18	1 x TURBOMAX 80-5	1 x BUFFMAX 80	69,886	5
9 to 10	25	293	1 x TURBOMAX 120-9	157,052	11	1 x TURBOMAX 120-9	1 x BUFFMAX 80	89,723	6
11 to 15	38	421	1 x TURBOMAX 120-9	303,791	20	1 x TURBOMAX 120-9	1 x BUFFMAX 80	136,203	9
16 to 20	50	541	1 x TURBOMAX 120-9	421,024	28	1 x TURBOMAX 120-9	1 x BUFFMAX 120	180,027	12
21 to 25	63	655	1 x TURBOMAX 120-9	523,777	35	1 x TURBOMAX 120-9	1 x BUFFMAX 120	222,440	15
26 to 30	75	764	2 x TURBOMAX 120-9	267,675	18	2 x TURBOMAX 120-9	1 x BUFFMAX 50	262,944	18
31 to 35	88	869	2 x TURBOMAX 120-9	311,250	21	2 x TURBOMAX 120-9	1 x BUFFMAX 50	302,203	20
36 to 40	100	971	2 x TURBOMAX 120-9	353,580	24	2 x TURBOMAX 120-9	1 x BUFFMAX 80	340,549	23
41 to 45	113	1,069	2 x TURBOMAX 120-9	394,250	26	2 x TURBOMAX 120-9	1 x BUFFMAX 120	377,235	25
46 to 50	125	1,166	2 x TURBOMAX 120-9	434,505	29	2 x TURBOMAX 120-9	1 x BUFFMAX 120	413,506	28
51 to 55	138	1,260	2 x TURBOMAX 120-9	497,442	33	2 x TURBOMAX 120-9	1 x BUFFMAX 120	448,864	30
56 to 60	150	1,352	2 x TURBOMAX 120-9	558,220	37	2 x TURBOMAX 120-9	1 x BUFFMAX 120	487,003	33
61 to 65	163	1,443	2 x TURBOMAX 120-9	637,409	43	2 x TURBOMAX 120-9	2 x BUFFMAX 120	518,169	35
66 to 70	175	1,531	2 x TURBOMAX 120-9	701,611	47	2 x TURBOMAX 120-9	2 x BUFFMAX 120	551,037	37
71 to 75	188	1,619	2 x TURBOMAX 120-9	757,178	51	2 x TURBOMAX 120-9	2 x BUFFMAX 120	584,569	39
76 to 80	200	1,704	2 x TURBOMAX 120-9	815,954	55	2 x TURBOMAX 120-9	2 x BUFFMAX 120	616,524	41
81 to 85	213	1,789	2 x TURBOMAX 120-9	874,096	59	2 x TURBOMAX 120-9	2 x BUFFMAX 120	648,479	43
86 to 90	225	1,872	2 x TURBOMAX 120-9	928,378	62	2 x TURBOMAX 120-9	2 x BUFFMAX 120	679,936	46
91 to 95	238	1,954	2 x TURBOMAX 120-9	985,570	66	2 x TURBOMAX 120-9	3 x BUFFMAX 120	710,646	90
96 to 100	250	2,035	2 x TURBOMAX 120-9	1,039,235	70	2 x TURBOMAX 120-9	3 x BUFFMAX 120	741,273	50
101 to 110	275	2,194	2 x TURBOMAX 120-9	1,118,646	75	2 x TURBOMAX 120-9	3 x BUFFMAX 120	801,282	54
111 to 120	300	2,349	3 x TURBOMAX 120-9	900,758	60	3 x TURBOMAX 120-9	2 x BUFFMAX 120	859,631	58
121 to 130	325	2,500	3 x TURBOMAX 120-9	963,423	64	3 x TURBOMAX 120-9	2 x BUFFMAX 120	916,320	61
131 to 140	350	2,649	3 x TURBOMAX 120-9	1,025,258	69	3 x TURBOMAX 120-9	3 x BUFFMAX 120	972,179	65
141 to 150	375	2,794	3 x TURBOMAX 120-9	1,085,433	73	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,026,378	69
151 to 160	400	2,937	3 x TURBOMAX 120-9	1,160,858	78	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,080,079	72
161 to 170	425	3,077	3 x TURBOMAX 120-9	1,240,046	83	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,132,203	76
171 to 180	450	3,214	3 x TURBOMAX 120-9	1,342,228	90	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,183,082	79
181 to 190	475	3,350	3 x TURBOMAX 120-9	1,417,955	95	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,233,546	83
191 to 200	500	3,483	3 x TURBOMAX 120-9	1,516,303	101	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,283,097	86
201 to 210	525	3,614	3 x TURBOMAX 120-9	1,589,364	106	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,331,486	89
211 to 220	550	3,744	3 x TURBOMAX 120-9	1,660,830	111	3 x TURBOMAX 120-9	5 x BUFFMAX 120	1,379,460	92
221 to 230	575	3,871	3 x TURBOMAX 120-9	1,762,453	118	3 x TURBOMAX 120-9	5 x BUFFMAX 120	1,425,857	95
231 to 240	600	3,997	4 x TURBOMAX 120-9	1,559,985	104	4 x TURBOMAX 120-9	4 x BUFFMAX 120	1,472,171	99
241 to 250	625	4,121	4 x TURBOMAX 120-9	1,611,445	108	4 x TURBOMAX 120-9	4 x BUFFMAX 120	1,517,655	102
251 to 260	650	4,243	4 x TURBOMAX 120-9	1,662,075	111	4 x TURBOMAX 120-9	5 x BUFFMAX 120	1,561,977	105
261 to 270	675	4,364	4 x TURBOMAX 120-9	1,712,290	115	4 x TURBOMAX 120-9	5 x BUFFMAX 120	1,605,884	107
271 to 280	700	4,484	4 x TURBOMAX 120-9	1,762,090	118	4 x TURBOMAX 120-9	5 x BUFFMAX 120	1,649,376	110
281 to 290	725	4,602	4 x TURBOMAX 120-9	1,850,647	124	4 x TURBOMAX 120-9	5 x BUFFMAX 120	1,692,038	113
291 to 300	750	4,718	4 x TURBOMAX 120-9	1,923,967	129	4 x TURBOMAX 120-9	6 x BUFFMAX 120	1,733,538	116
301 to 350	875	5,281	5 x TURBOMAX 120-9	2,068,153	138	5 x TURBOMAX 120-9	6 x BUFFMAX 120	1,933,983	129
351 to 400	1,000	5,816	5 x TURBOMAX 120-9	2,336,889	156	5 x TURBOMAX 120-9	None	2,336,889	156

# Sizing guide : Hotels and Motels

## 2 HOUR PEAK PERIOD:

Use 1 hour peak period sizing guide if hotels and motels with convention facilities and/or if based a longside busy interstate highways.

- Boiler water & Turbomax aquastat at 180°F.
- Thermostatic mixing valve at 140°F (maximum setting).
- Domestic cold water inlet is no less than 40°F.

Minimum requirements for an average occupancy of 1-1/2 persons per apartment, 5 minutes showers and 3 GPM shower flow rate. If shower flow up to 5 GPM then multiply gallon requirements in chart (column 3) by 1.6

NOTE: Hot water for laundry operations, restaurants and other major appliances or hot water fixtures such coin-operated washing machines, whirlpools, commercial dishwashers will increase the total demand. Add extra hot water generating capacity accordingly. Consult manufacturers specifications for hot water consumption.

Number of Units 1 & 1/2 Persons (1)	Actual No. Of Persons (2)	Gallons Required 2 Hour Period (3)	OPTION A : TURBOMAX UNITS ONLY			OPTION B : TURBOMAX UNITS & THERMAL MASS STORAGE			
			TURBOMAX Model No. Number of units (4)	Boiler Size Net Output BTU /hour (5)	Pump Flow Rate US gpm 20°F (TD) (6)	TURBOMAX Model No. Number of units (7)	Thermal Mass Storage Model No. (8)	Boiler Size Net Output BTU /hour (9)	Pump Flow Rate US gpm 20°F (TD) (10)
1 to 4	6	63	1 x TURBOMAX 50-3	127,567	13	1 x TURBOMAX 50-3	1 x BUFFMAX 50	50,000	5
5 to 6	9	98	1 x TURBOMAX 50-3	232,299	23	1 x TURBOMAX 50-3	1 x BUFFMAX 50	50,000	5
7 to 8	12	131	1 x TURBOMAX 80-5	142,904	14	1 x TURBOMAX 80-5	1 x BUFFMAX 50	50,000	5
9 to 10	15	164	1 x TURBOMAX 80-5	209,160	21	1 x TURBOMAX 80-5	1 x BUFFMAX 50	50,000	5
11 to 15	23	241	1 x TURBOMAX 80-5	303,864	31	1 x TURBOMAX 80-5	1 x BUFFMAX 80	60,839	6
16 to 20	30	313	1 x TURBOMAX 120-9	210,953	21	1 x TURBOMAX 120-9	1 x BUFFMAX 50	85,407	9
21 to 25	38	381	1 x TURBOMAX 120-9	290,500	29	1 x TURBOMAX 120-9	1 x BUFFMAX 80	109,311	11
26 to 30	45	443	1 x TURBOMAX 120-9	412,494	41	1 x TURBOMAX 120-9	1 x BUFFMAX 80	131,057	13
31 to 35	53	502	1 x TURBOMAX 120-9	482,438	48	1 x TURBOMAX 120-9	1 x BUFFMAX 120	151,890	15
36 to 40	60	557	1 x TURBOMAX 120-9	571,084	57	1 x TURBOMAX 120-9	1 x BUFFMAX 120	171,063	17
41 to 45	68	609	1 x TURBOMAX 120-9	634,233	64	1 x TURBOMAX 120-9	1 x BUFFMAX 120	189,323	19
46 to 50	75	658	1 x TURBOMAX 120-9	720,056	72	1 x TURBOMAX 120-9	1 x BUFFMAX 120	206,338	21
51 to 55	83	704	1 x TURBOMAX 120-9	778,333	78	1 x TURBOMAX 120-9	1 x BUFFMAX 120	223,021	22
56 to 60	90	748	1 x TURBOMAX 120-9	862,035	87	1 x TURBOMAX 120-9	1 x BUFFMAX 120	241,281	24
61 to 65	98	790	1 x TURBOMAX 120-9	919,935	92	1 x TURBOMAX 120-9	1 x BUFFMAX 120	258,711	26
66 to 70	105	830	2 x TURBOMAX 120-9	275,311	28	2 x TURBOMAX 120-9	1 x BUFFMAX 50	266,098	27
71 to 75	113	869	2 x TURBOMAX 120-9	291,496	29	2 x TURBOMAX 120-9	1 x BUFFMAX 50	279,295	28
76 to 80	120	906	2 x TURBOMAX 120-9	325,914	33	2 x TURBOMAX 120-9	1 x BUFFMAX 80	291,994	29
81 to 85	128	943	2 x TURBOMAX 120-9	382,468	38	2 x TURBOMAX 120-9	1 x BUFFMAX 80	304,693	31
86 to 90	135	978	2 x TURBOMAX 120-9	438,620	44	2 x TURBOMAX 120-9	1 x BUFFMAX 80	316,562	32
91 to 95	143	1,013	2 x TURBOMAX 120-9	494,404	50	2 x TURBOMAX 120-9	1 x BUFFMAX 120	328,431	33
96 to 100	150	1,048	2 x TURBOMAX 120-9	549,853	55	2 x TURBOMAX 120-9	1 x BUFFMAX 120	340,300	34
101 to 110	165	1,116	2 x TURBOMAX 120-9	639,681	64	2 x TURBOMAX 120-9	1 x BUFFMAX 120	363,540	37
111 to 120	180	1,184	2 x TURBOMAX 120-9	747,158	75	2 x TURBOMAX 120-9	1 x BUFFMAX 120	387,652	39
121 to 130	195	1,252	2 x TURBOMAX 120-9	831,066	83	2 x TURBOMAX 120-9	1 x BUFFMAX 120	415,872	42
131 to 140	210	1,322	2 x TURBOMAX 120-9	912,016	92	2 x TURBOMAX 120-9	2 x BUFFMAX 120	433,758	44
141 to 150	225	1,394	2 x TURBOMAX 120-9	1,011,450	102	2 x TURBOMAX 120-9	2 x BUFFMAX 120	458,658	46
151 to 160	240	1,469	2 x TURBOMAX 120-9	1,088,680	109	2 x TURBOMAX 120-9	2 x BUFFMAX 120	484,803	49
161 to 170	255	1,546	2 x TURBOMAX 120-9	1,163,804	117	2 x TURBOMAX 120-9	2 x BUFFMAX 120	511,778	51
171 to 180	270	1,625	2 x TURBOMAX 120-9	1,261,314	127	2 x TURBOMAX 120-9	2 x BUFFMAX 120	539,583	54
181 to 190	285	1,707	2 x TURBOMAX 120-9	1,333,806	134	2 x TURBOMAX 120-9	3 x BUFFMAX 120	568,633	57
191 to 200	300	1,792	2 x TURBOMAX 120-9	1,433,744	144	2 x TURBOMAX 120-9	3 x BUFFMAX 120	598,596	60
201 to 210	315	1,879	2 x TURBOMAX 120-9	1,503,916	151	2 x TURBOMAX 120-9	3 x BUFFMAX 120	629,721	63
211 to 220	330	1,967	2 x TURBOMAX 120-9	1,575,484	158	2 x TURBOMAX 120-9	3 x BUFFMAX 120	660,929	66
221 to 230	345	2,058	3 x TURBOMAX 120-9	1,037,951	104	3 x TURBOMAX 120-9	2 x BUFFMAX 120	693,714	70
231 to 240	360	2,149	3 x TURBOMAX 120-9	1,117,506	112	3 x TURBOMAX 120-9	2 x BUFFMAX 120	726,167	73
241 to 250	375	2,242	3 x TURBOMAX 120-9	1,195,212	120	3 x TURBOMAX 120-9	2 x BUFFMAX 120	759,450	76
251 to 260	390	2,335	3 x TURBOMAX 120-9	1,291,740	130	3 x TURBOMAX 120-9	3 x BUFFMAX 120	792,733	80
261 to 270	405	2,428	3 x TURBOMAX 120-9	1,370,409	138	3 x TURBOMAX 120-9	3 x BUFFMAX 120	825,684	83
271 to 280	420	2,521	3 x TURBOMAX 120-9	1,466,385	147	3 x TURBOMAX 120-9	3 x BUFFMAX 120	858,967	86
281 to 290	435	2,614	3 x TURBOMAX 120-9	1,565,700	157	3 x TURBOMAX 120-9	3 x BUFFMAX 120	891,918	90
291 to 300	450	2,706	3 x TURBOMAX 120-9	1,665,031	167	3 x TURBOMAX 120-9	3 x BUFFMAX 120	924,454	93
301 to 350	525	3,149	3 x TURBOMAX 120-9	2,036,717	204	3 x TURBOMAX 120-9	4 x BUFFMAX 120	1,078,751	108
351 to 400	600	3,594	3 x TURBOMAX 120-9	2,542,101	255	3 x TURBOMAX 120-9	5 x BUFFMAX 120	1,231,886	124

# Sizing guide : Hotels and Motels

## 2 HOUR PEAK PERIOD:

Use 1 hour peak period sizing guide if hotels and motels with convention facilities and/or if based a longside busy interstate highways.

- **Boiler water & Turbomax aquastat at 160°F and return at 130°F**
- Thermostatic mixing valve at 140°F (maximum setting).
- Domestic cold water inlet is no less than 40°F.

Minimum requirements for an average occupancy of 1-1/2 persons per apartment, 5 minutes showers and 3 GPM shower flow rate. If shower flow up to 5 GPM then multiply gallon requirements in chart (column 3) by 1.6

NOTE: Hot water for laundry operations, restaurants and other major appliances or hot water fixtures such coin-operated washing machines, whirlpools, commercial dishwashers will increase the total demand. Add extra hot water generating capacity accordingly. Consult manufacturers specifications for hot water consumption.

Number of Units 1 & 1/2 Persons (1)	Actual No. Of Persons (2)	Gallons Required 2 Hour Period (3)	OPTION A : TURBOMAX UNITS ONLY			OPTION B : TURBOMAX UNITS & THERMAL MASS STORAGE			
			TURBOMAX Model No. Number of units (4)	Boiler Size Net Output BTU /hour (5)	Pump Flow Rate US gpm 30°F (TD) (6)	TURBOMAX Model No. Number of units (7)	Thermal Mass Storage Model No. (8)	Boiler Size Net Output BTU /hour (9)	Pump Flow Rate US gpm 30°F (TD) (10)
1 to 4	6	63	1 x TURBOMAX 80-5	95,991	6	1 x TURBOMAX 80-5	1 x BUFFMAX 50	50,000	3
5 to 6	9	98	1 x TURBOMAX 80-5	194,341	13	1 x TURBOMAX 80-5	1 x BUFFMAX 80	50,000	3
7 to 8	12	131	1 x TURBOMAX 80-5	272,817	18	1 x TURBOMAX 80-5	1 x BUFFMAX 80	50,000	3
9 to 10	15	164	1 x TURBOMAX 120-9	178,658	12	1 x TURBOMAX 120-9	1 x BUFFMAX 50	50,000	3
11 to 15	23	241	1 x TURBOMAX 120-9	276,168	18	1 x TURBOMAX 120-9	1 x BUFFMAX 80	60,839	4
16 to 20	30	313	1 x TURBOMAX 120-9	421,024	28	1 x TURBOMAX 120-9	1 x BUFFMAX 120	85,407	6
21 to 25	38	381	1 x TURBOMAX 120-9	492,071	33	1 x TURBOMAX 120-9	1 x BUFFMAX 120	109,311	7
26 to 30	45	443	2 x TURBOMAX 120-9	134,460	9	2 x TURBOMAX 120-9	1 x BUFFMAX 50	131,057	9
31 to 35	53	502	2 x TURBOMAX 120-9	158,945	11	2 x TURBOMAX 120-9	1 x BUFFMAX 50	151,890	10
36 to 40	60	557	2 x TURBOMAX 120-9	239,577	16	2 x TURBOMAX 120-9	1 x BUFFMAX 80	171,063	11
41 to 45	68	609	2 x TURBOMAX 120-9	308,447	21	2 x TURBOMAX 120-9	1 x BUFFMAX 80	189,323	13
46 to 50	75	658	2 x TURBOMAX 120-9	388,366	26	2 x TURBOMAX 120-9	1 x BUFFMAX 120	206,338	14
51 to 55	83	704	2 x TURBOMAX 120-9	450,275	30	2 x TURBOMAX 120-9	1 x BUFFMAX 120	222,440	15
56 to 60	90	748	2 x TURBOMAX 120-9	527,164	35	2 x TURBOMAX 120-9	1 x BUFFMAX 120	237,712	16
61 to 65	98	790	2 x TURBOMAX 120-9	588,536	39	2 x TURBOMAX 120-9	1 x BUFFMAX 120	253,773	17
66 to 70	105	830	2 x TURBOMAX 120-9	644,393	43	2 x TURBOMAX 120-9	1 x BUFFMAX 120	270,373	18
71 to 75	113	869	2 x TURBOMAX 120-9	704,314	47	2 x TURBOMAX 120-9	2 x BUFFMAX 120	279,295	19
76 to 80	120	906	2 x TURBOMAX 120-9	759,253	51	2 x TURBOMAX 120-9	2 x BUFFMAX 120	291,994	20
81 to 85	128	943	2 x TURBOMAX 120-9	813,877	54	2 x TURBOMAX 120-9	2 x BUFFMAX 120	304,693	20
86 to 90	135	978	2 x TURBOMAX 120-9	868,214	58	2 x TURBOMAX 120-9	2 x BUFFMAX 120	316,562	21
91 to 95	143	1,013	2 x TURBOMAX 120-9	922,289	62	2 x TURBOMAX 120-9	2 x BUFFMAX 120	328,431	22
96 to 100	150	1,048	2 x TURBOMAX 120-9	976,124	65	2 x TURBOMAX 120-9	2 x BUFFMAX 120	340,300	23
101 to 110	165	1,116	2 x TURBOMAX 120-9	1,054,515	71	2 x TURBOMAX 120-9	3 x BUFFMAX 120	363,540	24
111 to 120	180	1,184	3 x TURBOMAX 120-9	644,012	43	3 x TURBOMAX 120-9	2 x BUFFMAX 120	386,448	26
121 to 130	195	1,252	3 x TURBOMAX 120-9	730,356	49	3 x TURBOMAX 120-9	2 x BUFFMAX 120	409,688	27
131 to 140	210	1,322	3 x TURBOMAX 120-9	813,532	54	3 x TURBOMAX 120-9	2 x BUFFMAX 120	433,758	29
141 to 150	225	1,394	3 x TURBOMAX 120-9	912,954	61	3 x TURBOMAX 120-9	2 x BUFFMAX 120	458,658	31
151 to 160	240	1,469	3 x TURBOMAX 120-9	992,142	66	3 x TURBOMAX 120-9	3 x BUFFMAX 120	484,803	32
161 to 170	255	1,546	3 x TURBOMAX 120-9	1,069,076	72	3 x TURBOMAX 120-9	3 x BUFFMAX 120	511,778	34
171 to 180	270	1,625	3 x TURBOMAX 120-9	1,166,436	78	3 x TURBOMAX 120-9	3 x BUFFMAX 120	539,583	36
181 to 190	285	1,707	3 x TURBOMAX 120-9	1,240,549	83	3 x TURBOMAX 120-9	3 x BUFFMAX 120	568,633	38
191 to 200	300	1,792	3 x TURBOMAX 120-9	1,340,512	90	3 x TURBOMAX 120-9	3 x BUFFMAX 120	598,596	40
201 to 210	315	1,879	3 x TURBOMAX 120-9	1,412,138	95	3 x TURBOMAX 120-9	4 x BUFFMAX 120	629,721	42
211 to 220	330	1,967	3 x TURBOMAX 120-9	1,485,261	99	3 x TURBOMAX 120-9	4 x BUFFMAX 120	660,929	44
221 to 230	345	2,058	3 x TURBOMAX 120-9	1,580,879	106	3 x TURBOMAX 120-9	4 x BUFFMAX 120	693,714	46
231 to 240	360	2,149	3 x TURBOMAX 120-9	1,651,933	111	3 x TURBOMAX 120-9	4 x BUFFMAX 120	726,167	49
241 to 250	375	2,242	4 x TURBOMAX 120-9	1,282,954	86	4 x TURBOMAX 120-9	3 x BUFFMAX 120	759,450	51
251 to 260	390	2,335	4 x TURBOMAX 120-9	1,379,629	92	4 x TURBOMAX 120-9	4 x BUFFMAX 120	792,733	53
261 to 270	405	2,428	4 x TURBOMAX 120-9	1,456,923	98	4 x TURBOMAX 120-9	4 x BUFFMAX 120	825,684	55
271 to 280	420	2,521	4 x TURBOMAX 120-9	1,553,071	104	4 x TURBOMAX 120-9	4 x BUFFMAX 120	858,967	57
281 to 290	435	2,614	4 x TURBOMAX 120-9	1,652,400	111	4 x TURBOMAX 120-9	4 x BUFFMAX 120	891,918	60
291 to 300	450	2,706	4 x TURBOMAX 120-9	1,751,744	117	4 x TURBOMAX 120-9	5 x BUFFMAX 120	924,454	62
301 to 350	525	3,149	5 x TURBOMAX 120-9	1,713,234	115	5 x TURBOMAX 120-9	5 x BUFFMAX 120	1,078,751	72
351 to 400	600	3,594	5 x TURBOMAX 120-9	2,220,024	149	5 x TURBOMAX 120-9	5 x BUFFMAX 120	1,231,886	82

# Sizing guide : Hotels and Motels

## 1 HOUR PEAK PERIOD:

Use 1 hour peak demand if hotels and motels with convention facilities and/or if based a longside busy interstate highways.

- Boiler water & Turbomax aquastat at 180°F
- Thermostatic mixing valve at 140°F (maximum setting).
- Domestic cold water inlet is no less than 40°F.

Minimum requirements for a 3 GPM shower flow rate. If shower flow up to 5 GPM then multiply gallon requirements in chart (column 3) by 1.6

NOTE: Hot water for laundry operations, restaurants and other major appliances or hot water fixtures such coin-operated washing machines, whirlpools, commercial dishwashers will increase the total demand. Add extra hot water generating capacity accordingly. Consult manufacturers specifications for hot water consumption.

Number of Units 1 & 1/2 Persons (1)	Actual No. Of Persons (2)	Gallons Required 1 Hour Period (3)	OPTION A : TURBOMAX UNITS ONLY			OPTION B : TURBOMAX UNITS & THERMAL MASS STORAGE			
			TURBOMAX Model No. Number of units (4)	Boiler Size Net Output BTU /hour (5)	Pump Flow Rate US gpm 30°F (TD) (6)	TURBOMAX Model No. Number of units (7)	Thermal Mass Storage Model No. (8)	Boiler Size Net Output BTU /hour (9)	Pump Flow Rate US gpm 30°F (TD) (10)
1 to 4	6	63	1 x TURBOMAX 80-5	50,000	3	1 x TURBOMAX 80-5	None	50,000	3
5 to 6	9	98	1 x TURBOMAX 120-9	50,000	3	1 x TURBOMAX 120-9	None	50,000	3
7 to 8	12	131	1 x TURBOMAX 120-9	50,000	3	1 x TURBOMAX 120-9	None	50,000	3
9 to 10	15	164	1 x TURBOMAX 120-9	66,981	4	1 x TURBOMAX 120-9	None	66,981	4
11 to 15	23	241	1 x TURBOMAX 120-9	131,754	9	1 x TURBOMAX 120-9	1 x BUFFMAX 50	121,678	8
16 to 20	30	313	1 x TURBOMAX 120-9	316,430	21	1 x TURBOMAX 120-9	1 x BUFFMAX 50	170,814	11
21 to 25	38	381	1 x TURBOMAX 120-9	435,750	29	1 x TURBOMAX 120-9	1 x BUFFMAX 80	218,622	15
26 to 30	45	443	2 x TURBOMAX 120-9	229,412	15	2 x TURBOMAX 120-9	None	229,412	15
31 to 35	53	502	2 x TURBOMAX 120-9	278,382	19	2 x TURBOMAX 120-9	None	278,382	19
36 to 40	60	557	2 x TURBOMAX 120-9	324,032	22	2 x TURBOMAX 120-9	None	324,032	22
41 to 45	68	609	2 x TURBOMAX 120-9	367,192	25	2 x TURBOMAX 120-9	None	367,192	25
46 to 50	75	658	2 x TURBOMAX 120-9	407,862	27	2 x TURBOMAX 120-9	None	407,862	27
51 to 55	83	704	2 x TURBOMAX 120-9	446,042	30	2 x TURBOMAX 120-9	1 x BUFFMAX 50	444,880	30
56 to 60	90	748	2 x TURBOMAX 120-9	482,562	32	2 x TURBOMAX 120-9	1 x BUFFMAX 50	475,424	32
61 to 65	98	790	2 x TURBOMAX 120-9	517,422	35	2 x TURBOMAX 120-9	1 x BUFFMAX 50	504,308	34
66 to 70	105	830	2 x TURBOMAX 120-9	550,622	37	2 x TURBOMAX 120-9	1 x BUFFMAX 50	532,196	36
71 to 75	113	869	2 x TURBOMAX 120-9	582,992	39	2 x TURBOMAX 120-9	1 x BUFFMAX 50	558,590	37
76 to 80	120	906	2 x TURBOMAX 120-9	613,702	41	2 x TURBOMAX 120-9	1 x BUFFMAX 80	583,988	39
81 to 85	128	943	2 x TURBOMAX 120-9	644,412	43	2 x TURBOMAX 120-9	1 x BUFFMAX 80	609,386	41
86 to 90	135	978	2 x TURBOMAX 120-9	673,462	45	2 x TURBOMAX 120-9	1 x BUFFMAX 80	633,124	42
91 to 95	143	1,013	3 x TURBOMAX 120-9	633,373	42	3 x TURBOMAX 120-9	None	633,373	42
96 to 100	150	1,048	3 x TURBOMAX 120-9	662,423	44	3 x TURBOMAX 120-9	None	662,423	44
101 to 110	165	1,116	3 x TURBOMAX 120-9	718,863	48	3 x TURBOMAX 120-9	None	718,863	48
111 to 120	180	1,184	3 x TURBOMAX 120-9	775,303	52	3 x TURBOMAX 120-9	1 x BUFFMAX 50	772,896	52
121 to 130	195	1,252	3 x TURBOMAX 120-9	831,743	56	3 x TURBOMAX 120-9	1 x BUFFMAX 50	819,376	55
131 to 140	210	1,322	3 x TURBOMAX 120-9	889,843	60	3 x TURBOMAX 120-9	1 x BUFFMAX 50	867,516	58
141 to 150	225	1,394	3 x TURBOMAX 120-9	949,603	64	3 x TURBOMAX 120-9	1 x BUFFMAX 80	917,316	61
151 to 160	240	1,469	3 x TURBOMAX 120-9	1,011,853	68	3 x TURBOMAX 120-9	1 x BUFFMAX 120	969,606	65
161 to 170	255	1,546	3 x TURBOMAX 120-9	1,075,763	72	3 x TURBOMAX 120-9	1 x BUFFMAX 120	1,023,556	69
171 to 180	270	1,625	3 x TURBOMAX 120-9	1,141,333	76	3 x TURBOMAX 120-9	1 x BUFFMAX 120	1,079,166	72
181 to 190	285	1,707	3 x TURBOMAX 120-9	1,209,393	81	3 x TURBOMAX 120-9	1 x BUFFMAX 120	1,140,254	76
191 to 200	300	1,792	3 x TURBOMAX 120-9	1,279,943	86	3 x TURBOMAX 120-9	1 x BUFFMAX 120	1,210,804	81
201 to 210	315	1,879	3 x TURBOMAX 120-9	1,352,153	91	3 x TURBOMAX 120-9	2 x BUFFMAX 120	1,259,442	84
211 to 220	330	1,967	3 x TURBOMAX 120-9	1,425,193	95	3 x TURBOMAX 120-9	2 x BUFFMAX 120	1,321,858	88
221 to 230	345	2,058	3 x TURBOMAX 120-9	1,556,927	104	3 x TURBOMAX 120-9	2 x BUFFMAX 120	1,387,428	93
231 to 240	360	2,149	3 x TURBOMAX 120-9	1,676,259	112	3 x TURBOMAX 120-9	2 x BUFFMAX 120	1,452,334	97
241 to 250	375	2,242	3 x TURBOMAX 120-9	1,792,818	120	3 x TURBOMAX 120-9	2 x BUFFMAX 120	1,518,900	102
251 to 260	390	2,335	4 x TURBOMAX 120-9	1,661,494	111	4 x TURBOMAX 120-9	1 x BUFFMAX 120	1,592,355	107
261 to 270	405	2,428	4 x TURBOMAX 120-9	1,738,684	116	4 x TURBOMAX 120-9	2 x BUFFMAX 120	1,651,368	111
271 to 280	420	2,521	4 x TURBOMAX 120-9	1,815,874	122	4 x TURBOMAX 120-9	2 x BUFFMAX 120	1,717,934	115
281 to 290	435	2,614	4 x TURBOMAX 120-9	1,893,064	127	4 x TURBOMAX 120-9	2 x BUFFMAX 120	1,783,836	119
291 to 300	450	2,706	4 x TURBOMAX 120-9	1,969,424	132	4 x TURBOMAX 120-9	2 x BUFFMAX 120	1,848,908	124
301 to 350	525	3,149	4 x TURBOMAX 120-9	2,337,114	156	4 x TURBOMAX 120-9	3 x BUFFMAX 120	2,157,502	144
351 to 400	600	3,594	Call Technical Support	6,349,500	425	Call Technical Support	5 x BUFFMAX 120	2,568,186	172



# Sizing guide : Hotels and Motels

## 1 HOUR PEAK PERIOD:

Use 1 hour peak demand if hotels and motels with convention facilities and/or if based a longside busy interstate highways.

- **Boiler water & Turbomax aquastat at 160°F and return at 130°F**
- Thermostatic mixing valve at 140°F (maximum setting).
- Domestic cold water inlet is no less than 40°F.

Minimum requirements for a 3 GPM shower flow rate. If shower flow up to 5 GPM then multiply gallon requirements in chart (column 3) by 1.6

NOTE: Hot water for laundry operations, restaurants and other major appliances or hot water fixtures such coin-operated washing machines, whirlpools, commercial dishwashers will increase the total demand. Add extra hot water generating capacity accordingly. Consult manufacturers specifications for hot water consumption.

Number of Units 1 & 1/2 Persons (1)	Actual No. Of Persons (2)	Gallons Required 1 Hour Period (3)	OPTION A : TURBOMAX UNITS ONLY			OPTION B : TURBOMAX UNITS & THERMAL MASS STORAGE			
			TURBOMAX Model No. Number of units (4)	Boiler Size Net Output BTU /hour (5)	Pump Flow Rate US gpm 30°F (TD) (6)	TURBOMAX Model No. Number of units (7)	Thermal Mass Storage Model No. (8)	Boiler Size Net Output BTU /hour (9)	Pump Flow Rate US gpm 30°F (TD) (10)
1 to 4	6	63	1 x TURBOMAX 80-5	143,987	10	1 x TURBOMAX 80-5	1 x BUFFMAX 50	50,000	3
5 to 6	9	98	1 x TURBOMAX 120-9	78,723	5	1 x TURBOMAX 120-9	1 x BUFFMAX 50	50,000	3
7 to 8	12	131	1 x TURBOMAX 120-9	171,729	11	1 x TURBOMAX 120-9	1 x BUFFMAX 50	50,000	3
9 to 10	15	164	1 x TURBOMAX 120-9	267,986	18	1 x TURBOMAX 120-9	1 x BUFFMAX 50	69,720	5
11 to 15	23	241	1 x TURBOMAX 120-9	414,253	28	1 x TURBOMAX 120-9	1 x BUFFMAX 80	121,678	8
16 to 20	30	313	2 x TURBOMAX 120-9	161,020	11	2 x TURBOMAX 120-9	None	161,020	11
21 to 25	38	381	2 x TURBOMAX 120-9	217,460	15	2 x TURBOMAX 120-9	None	217,460	15
26 to 30	45	443	2 x TURBOMAX 120-9	268,920	18	2 x TURBOMAX 120-9	1 x BUFFMAX 50	262,114	18
31 to 35	53	502	2 x TURBOMAX 120-9	317,890	21	2 x TURBOMAX 120-9	1 x BUFFMAX 50	303,780	20
36 to 40	60	557	2 x TURBOMAX 120-9	363,540	24	2 x TURBOMAX 120-9	1 x BUFFMAX 80	342,126	23
41 to 45	68	609	2 x TURBOMAX 120-9	462,671	31	2 x TURBOMAX 120-9	1 x BUFFMAX 80	378,646	25
46 to 50	75	658	2 x TURBOMAX 120-9	582,549	39	2 x TURBOMAX 120-9	1 x BUFFMAX 120	412,676	28
51 to 55	83	704	2 x TURBOMAX 120-9	675,413	45	2 x TURBOMAX 120-9	1 x BUFFMAX 120	444,880	30
56 to 60	90	748	2 x TURBOMAX 120-9	790,746	53	2 x TURBOMAX 120-9	1 x BUFFMAX 120	475,424	32
61 to 65	98	790	2 x TURBOMAX 120-9	882,803	59	2 x TURBOMAX 120-9	1 x BUFFMAX 120	507,545	34
66 to 70	105	830	2 x TURBOMAX 120-9	966,590	65	2 x TURBOMAX 120-9	1 x BUFFMAX 120	540,745	36
71 to 75	113	869	2 x TURBOMAX 120-9	1,056,471	71	2 x TURBOMAX 120-9	2 x BUFFMAX 120	558,590	37
76 to 80	120	906	3 x TURBOMAX 120-9	603,825	40	3 x TURBOMAX 120-9	1 x BUFFMAX 50	583,988	39
81 to 85	128	943	3 x TURBOMAX 120-9	634,535	42	3 x TURBOMAX 120-9	1 x BUFFMAX 80	609,386	41
86 to 90	135	978	3 x TURBOMAX 120-9	663,585	44	3 x TURBOMAX 120-9	1 x BUFFMAX 120	633,124	42
91 to 95	143	1,013	3 x TURBOMAX 120-9	692,635	46	3 x TURBOMAX 120-9	1 x BUFFMAX 120	656,862	44
96 to 100	150	1,048	3 x TURBOMAX 120-9	721,685	48	3 x TURBOMAX 120-9	1 x BUFFMAX 120	680,600	46
101 to 110	165	1,116	3 x TURBOMAX 120-9	803,959	54	3 x TURBOMAX 120-9	1 x BUFFMAX 120	728,740	49
111 to 120	180	1,184	3 x TURBOMAX 120-9	966,018	65	3 x TURBOMAX 120-9	2 x BUFFMAX 120	772,896	52
121 to 130	195	1,252	3 x TURBOMAX 120-9	1,095,534	73	3 x TURBOMAX 120-9	2 x BUFFMAX 120	819,376	55
131 to 140	210	1,322	3 x TURBOMAX 120-9	1,220,298	82	3 x TURBOMAX 120-9	2 x BUFFMAX 120	867,516	58
141 to 150	225	1,394	3 x TURBOMAX 120-9	1,369,431	92	3 x TURBOMAX 120-9	2 x BUFFMAX 120	917,316	61
151 to 160	240	1,469	3 x TURBOMAX 120-9	1,488,214	100	3 x TURBOMAX 120-9	3 x BUFFMAX 120	969,606	65
161 to 170	255	1,546	3 x TURBOMAX 120-9	1,603,614	107	3 x TURBOMAX 120-9	3 x BUFFMAX 120	1,023,556	69
171 to 180	270	1,625	4 x TURBOMAX 120-9	1,264,319	85	4 x TURBOMAX 120-9	2 x BUFFMAX 120	1,079,166	72
181 to 190	285	1,707	4 x TURBOMAX 120-9	1,387,835	93	4 x TURBOMAX 120-9	2 x BUFFMAX 120	1,137,266	76
191 to 200	300	1,792	4 x TURBOMAX 120-9	1,510,239	101	4 x TURBOMAX 120-9	2 x BUFFMAX 120	1,197,192	80
201 to 210	315	1,879	4 x TURBOMAX 120-9	1,617,123	108	4 x TURBOMAX 120-9	3 x BUFFMAX 120	1,259,442	84
211 to 220	330	1,967	4 x TURBOMAX 120-9	1,723,580	115	4 x TURBOMAX 120-9	3 x BUFFMAX 120	1,321,858	88
221 to 230	345	2,058	4 x TURBOMAX 120-9	1,816,978	122	4 x TURBOMAX 120-9	3 x BUFFMAX 120	1,387,428	93
231 to 240	360	2,149	4 x TURBOMAX 120-9	1,910,414	128	4 x TURBOMAX 120-9	3 x BUFFMAX 120	1,452,334	97
241 to 250	375	2,242	4 x TURBOMAX 120-9	1,998,044	134	4 x TURBOMAX 120-9	3 x BUFFMAX 120	1,518,900	102
251 to 260	390	2,335	4 x TURBOMAX 120-9	2,069,443	139	4 x TURBOMAX 120-9	4 x BUFFMAX 120	1,585,466	106
261 to 270	405	2,428	4 x TURBOMAX 120-9	2,185,384	146	4 x TURBOMAX 120-9	4 x BUFFMAX 120	1,651,368	111
271 to 280	420	2,521	5 x TURBOMAX 120-9	2,120,529	142	5 x TURBOMAX 120-9	3 x BUFFMAX 120	1,717,934	115
281 to 290	435	2,614	5 x TURBOMAX 120-9	2,240,625	150	5 x TURBOMAX 120-9	3 x BUFFMAX 120	1,783,836	119
291 to 300	450	2,706	5 x TURBOMAX 120-9	2,353,893	158	5 x TURBOMAX 120-9	4 x BUFFMAX 120	1,848,908	124
301 to 350	525	3,149	5 x TURBOMAX 120-9	2,855,390	191	5 x TURBOMAX 120-9	None	2,855,390	191
351 to 400	600	3,594	6 x TURBOMAX 120-9	2,726,144	182	6 x TURBOMAX 120-9	None	2,726,144	182