

# Series 4N Natural Draft Firebox Boiler

## Ratings for Oil, Gas or Stoker Firing

4N Boiler Models		63	78	92	107	127	154	180	209	240	277	311	345	397
Gross Output	MBH	245	299	348	403	522	626	724	870	996	1,142	1,278	1,414	21,60
	BHP	7.3	8.9	10.4	12.0	15.6	18.7	21.6	26.0	29.8	34.1	38.2	42.2	65
	Lbs.Stm./Hr.	253	308	359	415	538	645	746	897	1,027	1,177	1,317	1,457	2,226
Net Rating Steam	MBH	190	232	270	313	405	486	562	675	773	887	992	1,098	1,667
	Sq. Ft.	790	970	1,125	1,305	1,690	2,025	2,340	2,815	3,220	3,695	4,235	4,570	6,990
Net Rating Water	MBH	213	260	303	351	454	545	630	757	867	994	1,112	1,230	1,878
Firing Rate - Gas	MBH	306	374	435	504	653	783	905	1,088	1,245	1,428	1,598	1,768	2,700
	Light Oil (140,000 BTU/Gal.)	2.2	2.7	3.1	3.6	4.7	5.6	6.5	7.8	8.9	10.2	11.4	12.6	19.3
	Heavy Oil (150,000 BTU/Gal.)	—	—	—	—	—	—	—	—	—	—	—	—	18.0
Coal (Stoker)	Lbs./Hr.	25	31	36	41	54	64	74	89	102	117	131	145	222
Heating Surface	Sq. Ft.	45	55	64	74	96	115	133	153	183	210	235	260	397
	Fireside Waterside	47	57	67	77	100	120	139	160	193	221	247	274	429
Furnace Volume	Cu. Ft. *	8.8	10.7	12.6	14.6	18.3	21.9	25.3	29.1	34.7	39.7	44.4	49.1	58.9
Heat Release	MBH/Cu. Ft.	34.8	35.0	34.5	34.5	35.7	35.8	35.8	37.4	35.9	36.0	36.0	36.0	45.8
Water Content Gals.	Steam	67	83	96	113	133	149	171	197	209	239	267	295	421
	Water	92	114	134	156	168	200	231	267	283	323	362	401	520
Approx. Dry Weight Lbs.		1,500	1,700	1,900	2,200	2,500	2,800	3,100	3,400	3,900	4,300	4,900	5,200	6,500
Approx. Weight Full Lbs.	Steam	2,055	2,390	2,700	3,140	3,605	4,040	4,525	5,040	5,635	6,285	7,120	7,650	10,005
	Water	2,265	2,650	3,020	3,500	3,895	4,465	5,025	5,620	6,250	6,985	7,910	8,535	10,830

4N Boiler Models		463	563	662	827	993	1157	1323	1654	1985	2315	2645	3075
Gross Output	MBH	2,519	3,063	3,601	4,499	5,402	6,294	7,197	8,998	10,798	12,594	14,389	16,738
	BHP	75	92	108	134	161	188	215	269	323	376	430	500
	Lbs.Stm./Hr.	2,596	3,156	3,712	4,636	5,567	6,484	7,417	9,273	11,129	12,979	14,829	17,250
Net Rating Steam	MBH	1,956	2,378	2,796	3,493	4,194	4,887	5,588	6,986	8,384	9,778	11,172	12,989
	Sq. Ft.	8,150	9,910	11,650	14,555	17,475	20,360	23,280	29,110	34,930	40,740	46,550	54,120
Net Rating Water	MBH	2,190	2,663	3,131	3,912	4,697	5,473	6,258	7,824	9,390	10,951	12,512	14,554
Firing Rate - Gas	MBH	3,149	3,829	4,501	5,624	6,753	7,868	8,996	11,248	13,498	15,743	17,986	20,923
	Light Oil (140,000 BTU/Gal.)	22.5	27.3	32.1	40.2	48.2	56.2	64.3	80.3	96.4	112.5	128.5	149.5
	Heavy Oil (150,000 BTU/Gal.)	21.0	25.5	30.0	37.5	45.0	52.5	60.0	75.0	90.0	104.9	120.0	139.5
Coal (Stoker)	Lbs./Hr.	258	314	369	461	554	646	738	923	1,108	1,292	1,476	1,717
Heating Surface	Sq. Ft.	463	563	662	827	993	1,157	1,323	1,654	1,985	2,315	2,645	3,075
	Fireside Waterside	500	608	715	893	1,072	1,250	1,429	1,786	2,143	2,500	2,857	3,321
Furnace Volume	Cu. Ft. *	68.0	89.3	104.7	115.6	139.2	160.7	186.5	234.0	301.6	348.6	383.8	505.6
Heat Release	MBH/Cu. Ft.	46.3	42.9	43.0	48.7	48.5	49.0	48.2	48.1	44.8	45.2	46.9	41.4
Water Content Gals.	Steam	492	602	712	761	925	1,050	1,227	1,443	1,720	1,979	2,173	2,814
	Water	607	740	875	1,003	1,220	1,330	1,554	1,826	2,147	2,473	2,718	3,665
Approx. Dry Weight Lbs.		8,000	8,500	10,100	12,300	13,300	16,600	18,600	21,700	26,500	32,800	37,500	48,200
Approx. Weight Full Lbs.	Steam	12,100	13,515	16,030	18,630	21,005	25,340	28,815	33,710	40,815	49,270	55,590	71,630
	Water	13,055	14,665	17,390	20,645	23,455	27,675	31,540	36,900	44,370	53,385	60,120	78,710

All models have 3 inch diameter tubes—except 3075 has 2-1/2 inch tubes

\* = deos not include base volume

# Series 4N Ratings

- Compact, efficient three-pass firebox design
- Applications firing solid fuel, gas or oil
- 15 psi steam, 30 psi water
- Ample firebox assures non-critical combustion, high efficiency

## Ratings for Hand Firing

4N Boiler Models		63	78	92	107	127	154	180	209	240	277	311	345
Net Rating - Steam or Water	MBH	158	192	225	259	337	404	468	538	649	744	831	922
Net Rating - Steam	Sq. Ft.	660	800	935	1,080	1,405	1,685	1,950	2,240	2,700	3,100	3,460	3,840
Net Rating - Water	Sq. Ft.	1,055	1,280	1,500	1,725	2,245	2,695	3,120	3,590	4,330	4,960	5,540	6,150
Heating Surface - Sq. Ft.	Fireside	45	55	64	74	96	115	133	153	183	210	235	260
	Waterside	47	57	67	77	100	120	139	160	193	221	247	274
Grate Area	Sq. Ft.	4.0	5.1	6.1	7.2	7.2	8.8	10.3	12.0	12.6	12.6	13.4	14.5
Furnace Volume	Cu. Ft.	8.8	10.7	12.6	14.6	18.3	21.9	25.3	29.1	34.7	39.7	44.4	49.1
Heat Release	MBH/Cu. Ft.	39.9	40.1	39.2	39.2	40.5	41.0	41.1	42.9	41.2	41.3	41.0	41.0
Water Content - Gals.	Steam	67	83	96	113	133	149	171	197	209	239	267	295
	Water	92	114	134	156	168	200	231	267	283	323	362	401
Approx. Dry Weight - Lbs.		1,900	2,200	2,500	2,900	3,200	3,700	4,100	4,600	5,150	5,550	6,250	6,650
Approx. Full Weight - Lbs.	Steam	2,455	2,900	3,310	3,860	4,325	4,920	5,555	6,240	6,895	7,545	8,460	9,100
	Water	2,665	3,160	3,630	4,220	4,615	5,905	6,055	6,820	7,510	8,245	9,250	9,985

4N Boiler Models		397	463	563	662	827	993	1157	1323	1654	1985	2315	2645
Net Rating - Steam or Water	MBH	1,408	1,724	2,188	2,572	3,214	3,859	4,496	5,141	6,427	7,713	8,996	10,278
Net Rating - Steam	Sq. Ft.	5,865	7,185	9,115	10,715	13,390	16,080	18,730	21,420	26,780	32,135	37,485	42,825
Net Rating - Water	Sq. Ft.	9,391	11,500	14,595	17,155	21,435	25,740	29,990	34,290	42,870	51,445	60,005	68,555
Heating Surface - Sq. Ft.	Fireside	397	463	563	662	827	993	1,157	1,323	1,654	1,985	2,315	2,645
	Waterside	429	500	608	715	893	1,072	1,250	1,429	1,786	2,143	2,500	2,857
Grate Area	Sq. Ft.	16.4	18.1	20.5	22.5	25.6	28.4	30.9	33.2	37.4	41.2	44.7	48.0
Furnace Volume	Cu. Ft.	58.9	68.0	89.3	104.7	115.6	139.2	160.7	186.5	234.0	301.6	348.6	383.8
Heat Release	MBH/Cu. Ft.	52.3	53.0	49.1	49.2	55.6	55.5	56.0	55.1	55.0	51.2	51.6	53.6
Water Content - Gals.	Steam	421	492	602	712	761	925	1,050	1,227	1,443	1,720	1,979	2,173
	Water	520	607	740	875	1,003	1,220	1,330	1,554	1,826	2,147	2,473	2,718
Approx. Dry Weight - Lbs.		8,150	9,800	10,550	12,350	14,850	16,150	19,700	21,900	25,450	30,600	37,250	42,300
Approx. Full Weight - Lbs.	Steam	11,645	13,910	15,565	18,280	21,190	23,845	28,480	32,132	37,450	44,935	53,740	60,400
	Water	12,470	14,865	16,715	19,640	23,200	26,295	30,715	34,860	40,640	48,490	57,855	64,920

Grates for hand firing are not supplied by Burnham Commercial  
 Select boiler on net rating to match building heat loss or installed radiation.  
 See additional note regarding heat value of coal on back page