

# Series 4F-40

## Forced Draft Firebox Generator

### Ratings and Data

4F - 40 Boiler Models	63	78	92	107	127	154	180	209	240	277	311	345	360A	450A	563A	675A
<b>Gross Output</b>																
MBH	527	653	770	896	1,063	1,289	1,506	1,749	2,009	2,318	2,603	2,887	3,015	3,770	4,720	5,657
BHP	15.7	19.5	23.0	26.8	31.8	38.5	45.0	52.2	60.9	69.2	77.8	86.2	90.1	112.6	141.0	169.0
Lbs. Stm/Hr	543	673	794	923	1,096	1,328	1,553	1,803	2,070	2,389	2,683	2,975	3,108	3,885	4,864	5,832
<b>Net Rating - Steam</b>																
MBH	409	507	598	695	825	1,000	1,169	1,357	1,559	1,799	2,020	2,240	2,340	2,926	3,663	4,390
Sq. Ft.	1,705	2,115	2,490	2,895	3,445	4,165	4,870	5,655	6,495	7,495	8,415	9,335	9,750	12,190	15,265	18,295
<b>Net Rating - Water MBH</b>	458	568	670	780	925	1,121	1,310	1,522	1,748	2,017	2,265	2,512	2,623	3,280	4,106	4,922
<b>Firing Rate - Gas MBH</b>	659	816	963	1120	1329	1,611	1,883	2,186	2,511	2,898	3,254	3,609	3,769	4,713	5,900	7,071
<b>Firing Rate - Light Oil GPH*</b>	4.7	5.8	6.9	8.0	9.5	11.5	13.5	15.6	17.9	20.7	23.2	25.8	26.9	33.7	42.1	50.5
<b>Firing Rate - Heavy Oil GPH*</b>	—	—	—	—	—	—	—	—	—	—	—	—	25.1	31.4	39.3	47.1
<b>Heating Surface Sq. Ft.</b>																
Fireside	59	73	86	101	120	145	168	194	224	257	289	320	360	450	563	675
Waterside	63	78	92	107	127	154	180	209	240	277	311	345	398	497	622	746
<b>Furnace Volume Cu. Ft.</b>	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	68.0	89.3	104.7
<b>Heat Release MBH/Cu. Ft.</b>	74.9	76.3	76.4	76.7	72.6	73.6	74.4	75.1	72.4	73.0	73.3	73.5	64.0	69.3	66.1	67.5
<b>Water Content Gal.</b>																
Steam	65	81	94	110	133	145	172	198	214	245	274	302	470	551	663	788
Water	90	112	132	153	168	196	232	268	288	329	369	408	569	666	881	951
<b>Approx. Dry Weight Lbs.</b>	1,700	1,900	2,100	2,600	2,700	3,100	3,300	3,600	4,200	4,400	5,300	5,600	6,710	8,700	9,300	10,400
<b>Approx. Full Weight Lbs.</b>																
Steam	2,240	2,570	3,090	3,510	3,800	4,300	4,730	5,250	5,980	6,435	7,575	8,110	10,615	13,290	14,825	16,970
Water	2,450	2,835	3,195	3,870	4,095	4,735	5,235	5,830	6,595	7,140	8,365	8,995	11,495	14,255	15,975	18,325

Ratings based on 4 square feet of heating surface per boiler horsepower

\* Light oil—140,000 BTU/GAL

\*\* Heavy oil,—150,000 BTU/GAL

### Instantaneous Hot Water Heating Coils

Coil Number	*For Use in the Following Boiler Sizes Subject to Capacity Limitation of Boiler	Rated Capacity — Gallons Heated 40° to 140°F Boiler Water Temp.		
		108°F GPM	180°F GPH	212°F GPH
INA-210	All sizes	3.5	210	325
INA-300	All except 4F-63	5.0	300	466
INA-360	All sizes	6.0	360	560
INA-450	All except 4F-63	7.5	450	700
INA-600	4F-154 and larger, also 4F-107	10.0	600	933
INA-750	4F-154 and larger, also 4F-107	12.5	750	1,165
INA-900	4F-92 and larger	15.0	900	1,400
INA-1125	4F-154 and larger	18.7	1,125	1,750
INA-1350	4F-277 and larger, also 4F-209	22.5	1,350	2,100
INA-1500	4F-345 and larger	25.0	1,500	2,330

\*Two coils of any size or combination of sizes may be installed in 4F-1157 and larger

# Series 4F-45

## Forced Draft Firebox Generator

### Ratings and Data

4F - 45 Boiler Models	63	78	92	107	127	154	180	209	240	277	311	345	360A	450A	563A	675A
<b>Gross Output</b>																
MBH	469	579	683	797	944	1,145	1,339	1,553	1,784	2,062	2,313	2,568	2,678	3,348	4,251	5,055
BHP	14	17.3	20.4	23.8	28.2	34.2	40.0	46.4	53.3	61.6	69.1	76.7	80.0	100.0	127.0	151.0
Lbs. Stm/Hr	483	597	704	821	973	1,180	1,380	1,601	1,839	2,125	2,384	2,646	2,760	3,450	4,380	5,210
<b>Net Rating - Steam</b>																
MBH	364	449	530	618	733	889	1,039	1,205	1,384	1,600	1,795	1,993	2,078	2,598	3,299	3,923
Sq. Ft.	1,515	1,870	2,210	2,575	3,055	3,705	4,340	5,020	5,765	6,665	7,480	8,305	8,660	10,825	13,745	16,345
<b>Net Rating - Water MBH</b>	403	504	594	693	821	996	1,165	1,351	1,552	1,794	2,012	2,234	2,350	2,913	3,698	4,398
<b>Firing Rate - Gas MBH</b>	586	724	854	996	1,180	1,431	1,674	1,941	2,230	2,578	2,891	3,210	3,348	4,185	5,314	6,319
<b>Firing Rate - Light Oil GPH</b>	4.2	5.2	6.1	7.1	8.4	10.2	12.0	13.9	15.9	18.4	20.7	22.9	23.9	29.9	38.0	45.1
<b>Firing Rate - Heavy Oil GPH</b>	—	—	—	—	—	—	—	—	—	—	—	—	22.3	27.9	35.4	42.1
<b>Heating Surface Sq. Ft.</b>																
Fireside	59	73	86	101	120	145	168	194	224	257	289	320	360	450	563	675
Waterside	63	78	92	107	127	154	180	209	240	277	311	345	398	497	622	746
<b>Furnace Volume Cu. Ft.</b>	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	68.0	89.3	104.7
<b>Heat Release MBH/Cu. Ft.</b>	66.6	67.7	67.8	68.2	64.5	65.3	66.2	66.7	64.3	64.9	65.1	65.4	56.8	61.5	59.5	60.4
<b>Water Content Gal.</b>																
Steam	65	81	94	110	133	145	172	198	214	245	274	302	470	551	663	788
Water	90	112	132	153	168	196	232	268	288	329	369	408	569	666	801	951
<b>Approx. Dry Weight Lbs.</b>	1,700	1,900	2,100	2,600	2,700	3,100	3,300	3,600	4,200	4,600	5,300	5,600	6,900	8,700	9,300	10,400
<b>Approx. Full Weight Lbs.</b>																
Steam	2,240	2,570	3,090	3,510	3,800	4,300	4,730	5,250	5,980	6,435	7,575	8,110	10,615	13,290	14,825	16,970
Water	2,450	2,835	3,195	3,870	4,095	4,735	5,235	5,830	6,595	7,140	8,365	8,995	11,495	14,255	15,975	18,325

4F - 45 Boiler Models	360A-3	450-A	563A-3	675A-3	827	993	1157	1323	1654	1985	2315
<b>Gross Output</b>											
MBH	2,953	3,445	4,188	4,924	6,126	7,388	8,606	9,842	12,302	14,766	17,220
BHP	88.2	102.9	125.1	147.1	183.0	220.7	257.1	294.0	367.5	441.1	514.4
Lbs. Stm/Hr	3,044	3,550	4,316	5,075	6,315	7,617	8,872	10,146	12,682	15,223	17,753
<b>Net Rating - Steam</b>											
MBH	2,292	2,673	3,250	3,821	4,754	5,733	6,885	7,873	9,546	11,458	13,363
Sq. Ft.	9,550	11,140	13,540	15,920	19,810	23,890	28,690	32,805	39,775	47,740	55,680
<b>Net Rating - Water MBH</b>	2,569	2,997	3,644	4,284	5,330	6,428	7,487	8,563	10,703	12,846	14,981
<b>Firing Rate - Gas MBH</b>	3,691	4,306	5,235	6,155	7,658	9,235	10,758	12,303	15,378	18,458	21,525
<b>Firing Rate - Light Oil GPH</b>	26.4	30.8	37.4	44.0	54.7	66.0	76.8	87.9	110.0	132.0	154.0
<b>Firing Rate - Heavy Oil GPH</b>	24.6	28.7	34.9	41.0	51.0	61.6	71.7	82.0	102.7	123.2	143.7
<b>Heating Surface Sq. Ft.</b>											
Fireside	397	463	563	662	827	993	1,157	1,323	1,654	1,985	2,315
Waterside	429	500	608	715	893	1,072	1,250	1,429	1,786	2,143	2,500
<b>Furnace Volume Cu. Ft.</b>	58.9	68.0	89.3	104.7	115.6	139.2	160.7	186.5	234.0	301.6	348.6
<b>Heat Release MBH/Cu. Ft.</b>	62.7	63.3	58.6	58.8	66.2	66.3	66.9	66.0	65.7	61.2	61.7
<b>Water Content Gal.</b>											
Steam	421	492	602	712	761	925	1,050	1,227	1,443	1,720	1,979
Water	519	676	740	875	1,003	1,220	1,330	1,554	1,826	2,147	2,473
<b>Approx. Dry Weight Lbs.</b>	6,900	8,800	9,300	12,400	13,200	14,800	18,300	19,200	23,000	28,000	34,500
<b>Approx. Full Weight Lbs.</b>											
Steam	10,405	12,900	14,315	16,930	18,970	22,500	27,040	29,415	35,010	42,320	50,970
Water	11,225	14,430	15,465	18,290	20,325	24,950	28,675	32,140	38,200	45,870	55,085

Ratings based on 4.5 square feet of heating surface per boiler horsepower

# Series 4F-50

## Forced Draft Firebox Generator

### Ratings and Data

4F - 50 Boiler Models	63	78	92	107	127	154	180	209	240	277	311	345	360A	450A	563A	675A
<b>Gross Output</b>																
MBH	422	522	616	716	850	1,031	1,205	1,400	1,607	1,855	2,082	2,310	2,410	3,015	3,770	4,520
BHP	12.6	15.6	18.4	21.4	25.4	30.8	36.0	41.8	48.0	55.4	62.2	69.0	72.0	90.0	112.6	135.0
Lbs. Stm/Hr	435	538	635	738	876	1,063	1,242	1,442	1,656	1,911	2,146	2,381	2,484	3,108	3,885	4,660
<b>Net Rating - Steam</b>																
MBH	327	405	478	556	660	800	935	1,086	1,247	1,439	1,616	1,793	1,870	2,340	2,926	3,508
Sq. Ft.	1,365	1,690	1,990	2,315	2,750	3,335	3,895	4,525	5,195	5,995	6,735	7,470	7,790	9,750	12,190	14,615
<b>Net Rating - Water MBH</b>	367	454	536	623	740	897	1,048	1,218	1,398	1,614	1,811	2,010	2,097	2,623	3,280	3,932
<b>Firing Rate - Gas MBH</b>	528	653	770	895	1,063	1,289	1,506	1,750	2,009	2,319	2,603	2,888	3,013	3,769	4,713	5,650
<b>Firing Rate - Light Oil GPH</b>	3.8	4.7	5.5	6.4	7.6	9.2	10.8	12.5	14.4	16.6	18.6	20.6	21.5	27.0	33.6	40.4
<b>Firing Rate - Heavy Oil GPH</b>	—	—	—	—	—	—	—	—	—	—	—	—	20.1	25.2	31.4	37.7
<b>Heating Surface Sq. Ft.</b>																
Fireside	59	73	86	101	120	145	168	194	224	257	289	320	360	450	563	675
Waterside	63	78	92	107	127	154	180	209	240	277	311	345	398	497	622	746
<b>Furnace Volume Cu. Ft.</b>	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	68.0	89.3	104.7
<b>Heat Release MBH/Cu. Ft.</b>	60.0	61.0	61.1	61.3	58.1	58.8	59.5	60.1	57.9	58.4	58.6	58.8	51.2	55.4	52.8	53.9
<b>Water Content Gal.</b>																
Steam	65	81	94	110	133	145	172	198	214	245	274	302	470	537	683	788
Water	90	112	132	153	168	196	232	268	288	329	369	408	569	666	801	951
<b>Approx. Dry Weight Lbs.</b>	1,700	1,900	2,100	2,600	2,700	3,100	3,300	3,600	4,200	4,400	5,300	5,600	6,700	8,700	9,300	10,400
<b>Approx. Full Weight Lbs.</b>																
Steam	2,240	2,570	3,090	3,510	3,800	4,300	4,730	5,250	5,980	6,435	7,575	8,110	10,615	13,290	14,825	16,970
Water	2,450	2,835	3,195	3,870	4,095	4,735	5,235	5,830	6,595	7,140	8,365	8,995	11,495	14,255	15,975	18,325

4F - 50 Boiler Models	360A-3	450-A	563A-3	675A-3	827	993	1157	1323	1654	1985	2315	2645	3075
<b>Gross Output</b>													
MBH	2,658	3,100	3,769	4,432	5,537	6,648	7,746	8,857	11,074	13,290	15,499	17,708	20,587
BHP	79.4	92.6	112.6	132.4	165.0	199.0	231.0	265.0	331.0	397.0	463.00	529.0	615.0
Lbs. Stm/Hr	2,739	3,195	3,885	4,568	5,706	6,852	7,983	9,129	11,413	13,697	15,974	18,252	21,217
<b>Net Rating - Steam</b>													
MBH	2,063	2,406	2,925	3,439	4,299	5,161	6,014	6,877	8,598	10,318	12,033	13,748	15,976
Sq. Ft.	8,596	10,025	12,188	14,329	17,910	21,505	25,060	28,655	35,825	42,995	50,140	57,285	66,525
<b>Net Rating - Water MBH</b>	2,312	2,697	3,279	3,856	4,817	5,784	6,739	7,706	9,634	11,562	13,484	15,406	17,911
<b>Firing Rate - Gas MBH</b>	3,323	3,875	4,711	5,540	6,921	8,310	9,683	11,071	13,843	16,613	19,374	22,135	25,734
<b>Firing Rate - Light Oil GPH</b>	23.7	27.7	33.7	39.6	49.9	60.0	70.0	80.0	99.0	119.0	139.0	158.0	184.0
<b>Firing Rate - Heavy Oil GPH</b>	22.2	25.8	31.4	36.9	46.6	56.0	65.3	74.7	92.4	110.7	129.3	148.0	172.0
<b>Heating Surface Sq. Ft.</b>													
Fireside	397	463	563	662	827	993	1,157	1,323	1,654	1,985	2,315	2,645	3,075
Waterside	429	500	608	715	893	1,072	1,250	1,429	1,786	2,143	2,500	2,857	3,321
<b>Furnace Volume Cu. Ft.</b>	58.9	68.0	89.3	104.7	115.6	139.2	160.7	186.5	234.0	301.6	348.6	383.8	505.6
<b>Heat Release MBH/Cu. Ft.</b>	56.4	57.0	52.8	52.9	59.9	59.7	60.3	59.4	59.2	55.1	55.6	63.5	50.9
<b>Water Content Gal.</b>													
Steam	421	492	602	712	761	925	1,050	1,227	1,443	1,720	1,979	2,173	2,814
Water	519	676	740	875	1,003	1,220	1,330	1,554	1,826	2,147	2,473	2,718	3,665
<b>Approx. Dry Weight Lbs.</b>	6,900	8,800	11,000	12,400	14,800	18,300	19,200	19,800	23,000	28,000	34,500	38,200	49,000
<b>Approx. Full Weight Lbs.</b>													
Steam	10,450	12,900	14,315	16,930	18,970	22,500	27,040	29,415	35,010	42,320	50,970	56,290	72,430
Water	11,225	14,430	15,465	18,290	20,325	24,950	29,375	32,140	38,200	45,870	55,085	60,820	79,510

Ratings based on 5 square feet of heating surface per boiler horsepower