

Rotapower® Combustion of Landfill Gas (LFG)

(Projected)

Inputs:

Single Rotor Displacement, cc 650
 % Methane in LFG 60%
 Generator Efficiency 90%

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Estimated (Extrapolated from impirical data):

Peak Vol. Efficiency. (Naturally Aspirated) 77%
 Peak Thermal Efficiency 30%
 Thermal Efficiency @ Max Power 25%

Rotors	Displacement cc	RPM	Engine CFM	Methane (CH4) Available CFM	Landfill Gas Used CFM	Air Used, CFM	Total Heat from CH4, BTU/Hr	BHp	TQ ft-lbs	Generator Output kW
1	650	3000	45.4	4.1	7	39	235,391	28	48	19
		3600	56.5	5.1	8	48	292,741	35	51	23
		4400	67.3	6.0	10	57	348,379	41	49	27
		5200	85.9	7.7	13	73	445,103	50	51	34
		6000	103.3	9.2	15	88	534,980	57	50	38
		6700	118.1	10.6	18	100	611,732	60	47	40
		7000	120.1	10.8	18	102	622,146	59	44	39
2	1300	3000	90.9	8.1	14	77	470,782	55	97	37
		3600	113.0	10.1	17	96	585,482	70	101	47
		4400	134.5	12.0	20	114	696,758	82	98	55
		5200	171.9	15.4	26	146	890,206	100	101	67
		6000	206.6	18.5	31	176	1,069,960	113	99	76
		6700	236.2	21.2	35	201	1,223,463	120	94	80
		7000	240.2	21.5	36	204	1,244,292	117	88	79
3	1950	3000	136.3	12.2	20	116	706,173	83	145	56
		3600	169.6	15.2	25	144	878,223	104	152	70
		4400	201.8	18.1	30	172	1,045,136	123	147	82
		5200	257.8	23.1	38	219	1,335,309	150	152	101
		6000	309.9	27.7	46	264	1,604,939	170	149	114
		6700	354.3	31.7	53	301	1,835,195	180	141	121
		7000	360.3	32.3	54	307	1,866,437	176	132	118
4	2600	3000	181.8	16.3	27	155	941,564	111	194	74
		3600	226.1	20.2	34	192	1,170,964	139	203	93
		4400	269.0	24.1	40	229	1,393,515	164	195	110
		5200	343.7	30.8	51	292	1,780,413	200	202	134
		6000	413.1	37.0	62	351	2,139,919	226	198	152
		6700	472.4	42.3	71	402	2,446,926	240	188	161
		7000	480.4	43.0	72	409	2,488,583	235	176	158
5	3250	3000	227.2	20.3	34	193	1,176,955	138	242	93
		3600	282.6	25.3	42	240	1,463,705	174	254	117
		4400	336.3	30.1	50	286	1,741,894	205	244	137
		5200	429.7	38.5	64	366	2,225,516	250	253	168
		6000	516.4	46.2	77	439	2,674,899	283	248	190
		6700	590.5	52.9	88	502	3,058,658	299	235	201
		7000	600.6	53.8	90	511	3,110,729	294	220	197
6	3900	3000	272.7	24.4	41	232	1,412,347	166	290	111
		3600	339.1	30.4	51	288	1,756,446	209	304	140
		4400	403.6	36.1	60	343	2,090,273	246	293	165
		5200	515.6	46.2	77	439	2,670,619	300	303	202
		6000	619.7	55.5	92	527	3,209,879	339	297	228
		6700	708.6	63.5	106	603	3,670,389	359	282	241
		7000	720.7	64.5	108	613	3,732,875	352	264	236