

Rotapower® Combustion of Landfill Gas (LFG)
(Without Pilot/Coolant Fuel)

Assumptions:

Single Rotor Displacement, cc	530
Est. Thermal Eff.	27%
Est. Vol. Eff. (Naturally Aspirated)	70%
% Methane in LFG	60%
Generator Efficiency	90%
Biogas Density (25°C, 1 atm)	1.15 kg/m³

Rotors	Disp. cc	RPM	Engine CFM	Methane (CH4) CFM	Landfill Gas (LFG) Cubic Feet/Min	Landfill Gas (LFG) Cubic Meter/Day	Landfill Gas (LFG) Kgs/Day	Air Used, CFM	Energy from CH4, BTU/Hr	BHp	Electrical Power, kW
1	530	3600	47.2	4.2	7.0	287.0	330.1	40.1	244,280	26	17
		4400	57.6	5.2	8.6	350.8	403.4	49.0	298,564	32	21
		5200	68.1	6.1	10.2	414.6	476.8	58.0	352,849	37	25
		6000	78.6	7.0	11.7	478.4	550.1	66.9	407,133	43	29
2	1060	3600	94.3	8.4	14.1	574.0	660.2	80.2	488,560	52	35
		4400	115.3	10.3	17.2	701.6	806.9	98.1	597,129	63	43
		5200	136.2	12.2	20.3	829.2	953.6	115.9	705,698	75	50
		6000	157.2	14.1	23.5	956.7	1100.3	133.7	814,267	86	58
3	1590	3600	141.5	12.7	21.1	861.1	990.2	120.4	732,840	78	52
		4400	172.9	15.5	25.8	1052.4	1210.3	147.1	895,693	95	64
		5200	204.4	18.3	30.5	1243.8	1430.3	173.9	1,058,547	112	75
		6000	235.8	21.1	35.2	1435.1	1650.4	200.6	1,221,400	130	87
4	2120	3600	188.6	16.9	28.2	1148.1	1320.3	160.5	977,120	104	70
		4400	230.6	20.6	34.4	1403.2	1613.7	196.2	1,194,258	127	85
		5200	272.5	24.4	40.7	1658.4	1907.1	231.8	1,411,395	150	101
		6000	314.4	28.2	46.9	1913.5	2200.5	267.5	1,628,533	173	116
5	2650	3600	235.8	21.1	35.2	1435.1	1650.4	200.6	1,221,400	130	87
		4400	288.2	25.8	43.0	1754.0	2017.1	245.2	1,492,822	158	106
		5200	340.6	30.5	50.8	2072.9	2383.9	289.8	1,764,244	187	126
		6000	393.0	35.2	58.7	2391.9	2750.6	334.4	2,035,667	216	145
6	3180	3600	283.0	25.3	42.2	1722.1	1980.5	240.7	1,465,680	156	104
		4400	345.8	31.0	51.6	2104.8	2420.6	294.2	1,791,387	190	128
		5200	408.7	36.6	61.0	2487.5	2860.7	347.7	2,117,093	225	151
		6000	471.6	42.2	70.4	2870.2	3300.8	401.2	2,442,800	259	174
7	3710	3600	330.1	29.6	49.3	2009.2	2310.5	280.9	1,709,960	181	122
		4400	403.5	36.1	60.2	2455.6	2824.0	343.3	2,089,951	222	149
		5200	476.9	42.7	71.2	2902.1	3337.4	405.7	2,469,942	262	176
		6000	550.2	49.3	82.1	3348.6	3850.9	468.1	2,849,933	302	203
8	4240	3600	377.3	33.8	56.3	2296.2	2640.6	321.0	1,954,240	207	139
		4400	461.1	41.3	68.8	2806.4	3227.4	392.3	2,388,515	253	170
		5200	545.0	48.8	81.3	3316.7	3814.2	463.6	2,822,791	300	201
		6000	628.8	56.3	93.9	3827.0	4401.0	535.0	3,257,067	346	232
9	4770	3600	424.4	38.0	63.4	2583.2	2970.7	361.1	2,198,520	233	157
		4400	518.8	46.5	77.4	3157.2	3630.8	441.3	2,687,080	285	191
		5200	613.1	54.9	91.5	3731.3	4291.0	521.6	3,175,640	337	226
		6000	707.4	63.4	105.6	4305.3	4951.1	601.8	3,664,200	389	261