

# GAS GENERATOR SET PRODUCT RATINGS SUMMARY

## 60Hz GAS GENERATOR SET RATINGS

### Biogas, Landfill Gas, Sewage Gas <sup>1)</sup>

Model	rpm	Emission Level (No <sub>x</sub> ) <sup>2)</sup>		Aftercooler Temperature		Electric Power <sup>3)</sup>				Efficiency <sup>4)</sup>		
						@ 1.0 pf	@ 0.8 pf	Mechanical Power		Electrical Efficiency	Thermal Efficiency	Total Efficiency
		mg/Nm <sup>3</sup>	g/bhp-hr	°C	°F	kW <sub>e</sub>		kW <sub>m</sub>	bhp	%	%	%
G3406	1800	7613	21.0	–	–	137	137	145	194	27.7%	61.1%	88.8%
G3412	1800	7051	16.4	–	–	194	191	205	275	26.5%	62.9%	89.4%
CG132B-8	1800	500	1.09	45	113	400	397	415	556	41.7%	43.3%	85.0%
CG132B-12	1800	500	1.09	45	113	600	596	621	832	41.7%	43.6%	85.3%
CG132B-16	1800	500	1.09	45	113	800	794	827	1109	41.9%	43.3%	85.2%
G3516A	1200	500	1.0	54	130	824	816	856	1148	31.0%	47.7%	78.7%
G3516A	1200	396	0.9	54	130	1012	1000	1053	1412	38.4%	37.8%	76.2%
CG170-12	1500	500	1.0	50	122	1200	1188	1235	1656	42.8%	42.8%	85.6%
CG170-16	1500	500	1.0	50	122	1560	1544	1619	2170	42.3%	43.1%	85.4%
G3520C	1200	439	1.0	54	130	1622	1600	1672	2242	39.8%	40.9%	80.8%
G3520C	1500	500	1.0	54	130	1936	1946	2015	2702	39.1%	41.4%	80.5%
CG170-20	1500	500	1.0	50	122	2000	1980	2055	2756	42.7%	43.2%	85.9%
CG260-16	900	500	1.0	40	104	3510	3503	3614	4846	43.3%	38.5%	81.8%

### Natural Gas <sup>1)</sup>

Model	rpm	Emission Level (No <sub>x</sub> ) <sup>2)</sup>		Aftercooler Temperature		Electric Power <sup>3)</sup>				Efficiency <sup>4)</sup>		
						@ 1.0 pf	@ 0.8 pf	Mechanical Power		Electrical Efficiency	Thermal Efficiency	Total Efficiency
		mg/Nm <sup>3</sup>	g/bhp-hr	°C	°F	kW <sub>e</sub>		kW <sub>m</sub>	bhp	%	%	%
G3406	1800	9176	21.6	–	–	155	150	172	231	30.1%	57.3%	87.4%
G3406	1800	8269	19.7	54	130	217	190	224	301	33.5%	52.9%	86.4%
G3412	1800	8566	22.1	–	–	253	250	271	363	30.3%	60.9%	91.2%
CG132B-8	1800	500	0.97	45	113	400	397	415	556	42.1%	45.0%	87.1%
G3412	1800	10624	25.7	54	130	403	350	422	566	33.4%	54.3%	87.7%
G3412C	1800	800	1.9	54	130	453	375	475	637	35.3%	47.1%	82.4%
CG132B-12	1800	500	0.97	45	113	600	596	621	832	42.4%	45.7%	88.1%
CG132B-16	1800	500	0.97	45	113	800	794	827	1109	42.6%	45.5%	88.1%
G3516	1200	844	2.0	54	130	779	770	809	1085	35.0%	48.8%	83.7%
CG170-12	1500	500	1.0	40	104	1125	1114	1157	1552	40.7%	45.6%	86.3%
CG170-12	1500	500	1.0	40	104	1200	1188	1235	1656	43.4%	43.2%	86.6%
G3516B	1800	500	1.0	54	130	1318	1300	1356	1818	35.7%	50.2%	85.9%
G3512H	1500	500	1.0	54	130	1500	1490	1560	2092	44.6%	42.0%	86.6%
CG170-16	1500	500	1.0	40	104	1500	1485	1546	2074	40.6%	45.7%	86.3%
CG170-16	1500	500	1.0	40	104	1560	1544	1608	2157	43.0%	43.8%	86.8%
G3516C	1800	443	1.0	54	130	1675	1660	1736	2328	37.7%	48.4%	86.1%
CG170-20	1500	500	1.0	40	104	2000	1980	2055	2756	43.4%	43.2%	86.6%
G3516H	1500	500	1.0	48	119	2008	1988	2077	2785	45.0%	41.1%	86.1%
G3520C	1800	446	1.0	54	130	2077	2000	2149	2882	37.3%	49.4%	86.7%
G3520H	1500	500	1.0	48	119	2500	2009	2080	2789	45.4%	41.0%	86.4%
CG260-12	900	500	1.0	40	104	3000	3000	3088	4141	43.9%	42.1%	86.0%
CG260-16	900	500	1.0	40	104	4000	3985	4109	5510	43.8%	42.4%	86.2%
CG260-16	900	500	1.0	40	104	4050	4040	4124	5530	44.3%	42.6%	86.9%

### Natural Gas <sup>1)</sup> Standby

Model	rpm	Emission Compliance	kW <sub>e</sub> @ 0.8 pf	NFPA 110 Compliant	Max Load Step - %
G3406	1800	NSPS Compliant Capable <sup>5)</sup>	155	No	–
G3406	1800	NSPS Compliant Capable <sup>5)</sup>	210	No	–
G3412	1800	NSPS Compliant Capable <sup>5)</sup>	400	No	–
G3412C	1800	NSPS Factory Compliant	423	Yes	100%
G3412C	1800	NSPS Factory Compliant	500	Yes	100%
G3512	1800	US EPA Stationary Emergency Certified	750	Yes	100%
G3512	1800	US EPA Stationary Emergency Certified	1000	Yes	100%
G3516B	1800	NSPS Compliant Capable <sup>5)</sup>	1300	No	25%
G3516C	1800	NSPS Compliant Capable <sup>5)</sup>	1500	No	25%
G3520C	1800	NSPS Compliant Capable <sup>5)</sup>	2000	No	25%



# GAS GENERATOR SET PRODUCT RATINGS SUMMARY

## 50Hz GAS GENERATOR SET RATINGS

Biogas <sup>1)</sup>									
Model	rpm	Emission Level (No <sub>x</sub> ) <sup>2)</sup>		Aftercooler Temperature		Electric Power <sup>3)</sup> @ 1.0 pf	Efficiency <sup>4)</sup>		
		mg/Nm <sup>3</sup>	g/bhp-hr	°C	°F		Electrical Efficiency	Thermal Efficiency	Total Efficiency
						%	%	%	
G3406	1500	7613	21.0	–	–	107	28.8%	60.7%	89.5%
G3412	1500	7051	19.9	–	–	174	27.4%	62.0%	89.4%
CG132B-8	1500	500	1.0	45	113	400	42.8%	42.2%	85.0%
CG132B-12	1500	500	1.0	45	113	600	42.9%	42.8%	85.7%
CG132B-16	1500	500	1.0	45	113	800	43.1%	42.6%	85.7%
CG170-12	1500	500	1.0	60	140	1000	42.6%	44.2%	86.8%
G3516A	1500	500	1.0	54	130	1041	32.1%	47.0%	79.1%
G3516A	1500	500	1.0	54	130	1105	36.8%	41.5%	78.3%
CG170-12	1500	500	1.0	50	122	1200	43.0%	42.8%	85.8%
CG170-16	1500	500	1.0	50	122	1560	42.6%	43.1%	85.7%
G3520C	1500	500	1.0	54	130	1984	39.4%	41.4%	80.5%
CG170-20	1500	500	1.0	50	122	2000	43.0%	43.3%	86.3%
CG260-16	1000	500	1.0	40	104	3770	43.0%	39.8%	82.8%

Natural Gas <sup>1)</sup>									
Model	rpm	Emission Level (No <sub>x</sub> ) <sup>2)</sup>		Aftercooler Temperature		Electric Power <sup>3)</sup> @ 1.0 pf	Efficiency <sup>4)</sup>		
		mg/Nm <sup>3</sup>	g/bhp-hr	°C	°F		Electrical Efficiency	Thermal Efficiency	Total Efficiency
						%	%	%	
G3406	1500	11293	27.5	–	–	126	31.9%	57.5%	89.4%
G3406	1500	9986	25.0	54	130	166	32.2%	50.2%	82.4%
G3412C	1500	846	2.0	54	130	374	33.7%	50.4%	84.1%
CG132B-8	1500	500	1.0	45	113	400	43.1%	43.6%	86.7%
CG132B-12	1500	500	1.0	45	113	600	43.3%	44.6%	87.9%
CG132B-16	1500	500	1.0	45	113	800	43.5%	44.6%	88.1%
G3516	1500	834	2.0	54	130	983	34.8%	48.3%	83.0%
CG170-12	1500	500	1.0	60	140	1000	43.0%	45.4%	88.4%
G3512E	1500	500	1.0	54	130	1017	41.5%	44.7%	86.7%
G3516B	1500	500	1.0	54	130	1088	37.2%	51.0%	88.2%
CG170-12	1500	500	1.0	40	104	1125	40.9%	45.6%	86.5%
CG170-12	1500	500	1.0	40	104	1200	43.6%	43.3%	86.9%
G3512E	1500	500	1.0	54	130	1211	42.2%	44.2%	86.4%
CG170-16	1500	500	1.0	40	104	1500	40.9%	45.7%	86.6%
G3512H	1500	500	0.97	54	130	1500	44.9%	42.1%	87.0%
CG170-16	1500	500	1.0	40	104	1560	43.2%	43.8%	87.0%
G3516C	1500	500	1.0	54	130	1603	40.0%	46.5%	86.5%
G3520C	1500	500	1.0	54	130	1976	40.2%	46.6%	86.8%
CG170-20	1500	500	1.0	38	100	2000	44.4%	42.5%	86.9%
CG170-20	1500	500	1.0	40	104	2000	43.7%	43.2%	86.9%
G3520C	1500	500	1.0	54	130	2010	40.4%	46.1%	86.5%
G3516H	1500	500	1.0	48	118	2027	45.3%	41.3%	86.6%
G3520E	1500	500	1.0	54	130	2039	42.5%	45.1%	87.6%
G3520H	1500	500	1.0	48	119	2519	45.4%	40.9%	86.3%
CG260-12	1000	500	1.0	40	104	3333	43.9%	42.6%	86.5%
CG260-16	1000	500	1.0	40	104	4300	44.1%	42.7%	86.8%
CG260-16	1000	500	1.0	40	104	4500	44.6%	43.2%	87.8%

<sup>1)</sup> Bio Gases at LHV = 18.0-23.3MJ/Nm<sup>3</sup> (457 to 593 Btu/cu.ft); MN=130-134. Natural Gas at 34.56 MJ/Nm<sup>3</sup> (905Btu/cu.ft); MN = 80 (70 for 50Hz CG series).

<sup>2)</sup> Emissions are based on the engine operating at steady state conditions and adjusted to the specified NO<sub>x</sub> level at 100% load.

Values are engine out without exhaust aftertreatment and subject to nominal tolerance based on fuel, site and operating conditions.

<sup>3)</sup> Power output based on ISO3046/1 conditions.

<sup>4)</sup> Electrical efficiency based on 1.0 pf, ISO 3046/1. Thermal efficiency based on nominal tolerance (+/-8% for CG line, +/- 10% for G3300/3400/3500 line).

Thermal efficiency includes heat rejection from jacket water circuit and exhaust gas at LHV to 120°C (CG series using Bio Gas: 150°C for CG 132/170, 180°C for CG260).

<sup>5)</sup> NSPS Compliant Capable with addition of three-way catalyst or oxidation catalyst.

