

Natural gas

Speed	1500 rpm	
Generator frequency	50 Hz	
Gas Type	Natural Gas	
NOx emissions	≤ 500 mg/nm³	1) 10)

Engine type			SFGLD 180	SFGLD 240	SFGLD 360	SFGLD 480	SFGLD 560	SFGM 560	HGM 240	HGM 560
Engine power 2)		kW	315	419	630	838	985	1055	520	1240
Speed		min ⁻¹	1500	1500	1500	1500	1500	1500	1500	1500
Mean effective pressure		bar	14	14	14	14	14	15	17,4	17,6
Exhaust temperature	approx.	°C	372	376	370	378	380	496	461	416
Exhaust mass flow wet	approx.	kg/h	1638	2155	3307	4317	5086	5173	2203	6041
Combustion air mass flow 2)	approx.	kg/h	1581	2078	3191	4163	4906	4983	2118	5839
Combustion air temperature design		°C	25	25	25	25	25	25	25	25
Ventilation air flow 3)	approx.	m³/h	22050	29330	44100	58660	68950	73850	36400	86800
Exhaust manifold type 4)			Wet	Wet	Wet	Wet	Wet	Dry	Dry	Dry
InterCooler Stages			Single	Single	Double	Double	Double	Double	Single	Double
Engine parameters										
Bore		mm	152	152	152	152	160	160	152	160
Stroke		mm	165	165	165	165	175	175	165	175
Displacement		dm³	18,0	24,0	35,9	47,9	56,3	56,3	24,0	56,3
Number of cylinders			6	8	12	16	16	16	8	16
Compression ratio			11,8 : 1	11,8 : 1	11,8 : 1	11,8 : 1	11,7 : 1	12 : 1	12: 1	12: 1
Mean piston speed		m/s	8,3	8,3	8,3	8,3	8,8	8,8	8,3	8,8
Lube oil content 5)		dm³	70	95	150	195	232	232	170	400
Typical mean lube oil consumption 6)	.	g/kWh	0,35	0,35	0,35	0,35	0,20	0,20	0,35	0,20
Generator										
Efficiency 7)		%	96,4	96,6	96,7	97,0	97,2	97,2	96,6	97,1
Energy balance 10)										
Electrical power 7)		kW	304	405	609	813	957	1025	502	1204
HT water heat	± 8 %	kW	191	265	449	604	709	524	243	556
LT water heat	± 8 %	kW	74	106	99	135	150	179	75	250
Exhaust cooled to 120 °C	± 8 %	kW	132	177	264	356	423	622	240	572
Engine radiation heat		kW	16	21	27	33	35	50	27	63
Generator radiation heat		kW	11	14	21	25	28	30	18	36
Fuel consumption 8) [HGM560 – 9)]	+ 5 %	kW	778	1053	1570	2097	2456	2587	1172	2864
Mechanical efficiency		%	40,5	39,8	40,1	40,0	40,1	40,8	44,4	43,3
Electrical efficiency		%	39,0	38,4	38,8	38,8	39,0	39,6	42,9	42,0
Thermal efficiency		%	51,0	52,0	51,7	52,2	52,2	51,2	47,6	48,1
Total efficiency		%	90,1	90,5	90,5	91,0	91,2	90,9	90,5	90,2
System parameters										
HT water flow rate min.		m³/h	25	30	50	60	70	70	45	70
HT water K value			4,5 x 10 ⁻⁴	3,3 x 10 ⁻⁴	1 x 10 ⁻⁴	1,1 x 10 ⁻⁴	1,1 x 10 ⁻⁴	1,78 x 10 ⁻⁴	1,79 x 10 ⁻⁴	1,78 x 10 ⁻⁴
LT coolant flow rate min./max.		m³/h	15/30	20/30	23/30	23/30	25/30	25/30	22/30	21/30
LT K value			1,86 x 10 ⁻³	1,89 x 10 ⁻³	2,06 x 10 ⁻³	2,06 x 10 ⁻³	2,06 x 10 ⁻³	1,9 x 10 ⁻³	1,46 x 10 ⁻³	1,9 x 10 ⁻³
HT water heat		dm³	50	60	180	200	200	200	80	260
HT water temperature max.		°C	90	90	90	90	90	90	90	90
LT coolant temperature		°C	55	55	55	55	55	55	55	40
Exhaust backpressure max.		mbar	45	45	45	45	45	45	45	45
Maximum pressure loss in front of air cleaner		mbar	5	5	5	5	5	5	5	5
Gas flow pressure, fixed between (pressure variation +/- 10 %)		mbar	50 ... 240	50 ... 240	50 ... 240	50 ... 240	50 ... 240	50 ... 240	50 ... 240	50 ... 240
Starter battery 2 x 12 V, capacity required		Ah	280	280	280	280	280	280	280	280

1) NOx emissions: Dry exhaust gas @ 5 % O²
2) Engine power ratings and combustion air volume flows acc. to ISO 3046/1
3) Intake air flow at delta T = 5° including combustion air
4) Other types available on request.
5) Not including piping and heat exchangers
6) These values are the mean lube oil consumption between maintenance steps.

7) At 50 Hz, U = 0.4 kV, power factor = 1
8) With a tolerance of + 5 %
9) Minimum MN: 80 (Applies only to HGM560)
10) HGM engine values for NOx ≤1000 mg/Nm3
11) More flow depending on the external circuit installed.
12) Maximum fixed on 30m3/h not to exceed the 3m/s

- Data for special gas and dual gas operation on request.

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- The information given in the offer is decisive.

Biogas

Speed	1500 rpm	
Generator frequency	50 Hz	
Gas Type	Biogas	
NOx emissions	≤ 500 mg/nm³	1) 10)

Engine type			SFGLD 180	SFGLD 240	SFGLD 360	SFGLD 480	SFGLD 560	SFGM 560	HGM 240	HGM 560
Engine power 2)		kW	315	419	630	838	985	1055	520	1240
Speed		min ⁻¹	1500	1500	1500	1500	1500	1500	1500	1500
Mean effective pressure		bar	14	14	14	14	14	15	17,4	17,6
Exhaust temperature	approx.	°C	374	377	372	379	383	498	470	427
Exhaust mass flow wet	approx.	kg/h	1660	2190	3345	4400	5099	5272	2272	6215
Combustion air mass flow 2)	approx.	kg/h	1517	1997	3057	4014	4646	4795	2056	5679
Combustion air temperature design		°C	25	25	25	25	25	25	25	25
Ventilation air flow 3)	approx.	m³/h	22050	29330	44100	58660	68950	73850	36400	86800
Exhaust manifold type 4)			Wet	Wet	Wet	Wet	Wet	Dry	Dry	Dry
InterCooler Stages			Single	Single	Double	Double	Double	Double	Single	Double
Engine parameters										
Bore		mm	152	152	152	152	160	160	152	160
Stroke		mm	165	165	165	165	175	175	165	175
Displacement		dm³	18,0	24,0	35,9	47,9	56,3	56,3	24,0	56,3
Number of cylinders			6	8	12	16	16	16	8	16
Compression ratio			11,8 : 1	11,8 : 1	11,8 : 1	11,8 : 1	11,7 : 1	12 : 1	12: 1	12: 1
Mean piston speed		m/s	8,3	8,3	8,3	8,3	8,8	8,8	8,3	8,8
Lube oil content 5)		dm³	70	95	150	195	232	232	170	400
Typical mean lube oil consumption 6)		g/kWh	0,35	0,35	0,35	0,35	0,20	0,20	0,35	0,20
Generator										
Efficiency 7)		%	96,4	96,6	96,7	97,0	97,2	97,2	96,6	97,1
Energy balance 10)										
Electrical power 7)		kW	304	405	609	813	957	1025	502	1204
HT water heat	± 8 %	kW	188	257	441	596	704	515	230	600
LT water heat	± 8 %	kW	76	110	101	139	156	183	75	220
Exhaust cooled to 120 °C	± 8 %	kW	135	180	269	364	429	638	254	610
Engine radiation heat		kW	17	23	30	33	37	52	29	63
Generator radiation heat		kW	11	14	21	25	28	30	18	36
Fuel consumption 8) [HGM560 – 9)]	+ 5 %	kW	781	1056	1573	2104	2466	2603	1177	2922
Mechanical efficiency		%	40,3	39,7	40,1	39,8	39,9	40,5	44,2	42,4
Electrical efficiency		%	38,9	38,3	38,7	38,6	38,8	39,4	42,7	41,2
Thermal efficiency		%	51,1	51,8	51,6	52,2	52,3	51,3	47,5	48,9
Total efficiency		%	90,0	90,1	90,3	90,9	91,1	90,7	90,2	90,1
System parameters										
HT water flow rate min.		m³/h	25	30	50	60	70	70	45	70
HT water K value			4,5 x 10 ⁻⁴	3,3 x 10 ⁻⁴	1 x 10 ⁻⁴	1,1 x 10 ⁻⁴	1,1 x 10 ⁻⁴	1,78 x 10 ⁻⁴	1,79 x 10 ⁻⁴	1,78 x 10 ⁻⁴
LT coolant flow rate min./max.		m³/h	15/30	20/30	23/30	23/30	25/30	25/30	22/30	21/30
LT K value			1,86 x 10 ⁻³	1,89 x 10 ⁻³	2,06 x 10 ⁻³	2,06 x 10 ⁻³	2,06 x 10 ⁻³	2,06 x 10 ⁻³	1,46 x 10 ⁻³	1,9 x 10 ⁻³
HT water heat		dm³	50	60	180	200	200	200	80	260
HT water temperature max.		°C	90	90	90	90	90	90	90	90
LT coolant temperature		°C	55	55	55	55	55	55	55	55
Exhaust backpressure max.		mbar	45	45	45	45	45	45	45	45
Maximum pressure loss in front of air cleaner		mbar	5	5	5	5	5	5	5	5
Gas flow pressure, fixed between (pressure variation +/- 10 %)		mbar	50 ... 240	50 ... 240	50 ... 240	50 ... 240	50 ... 240	50 ... 240	50 ... 240	50 ... 240
Starter battery 2 x 12 V, capacity required		Ah	280	280	280	280	280	280	280	280

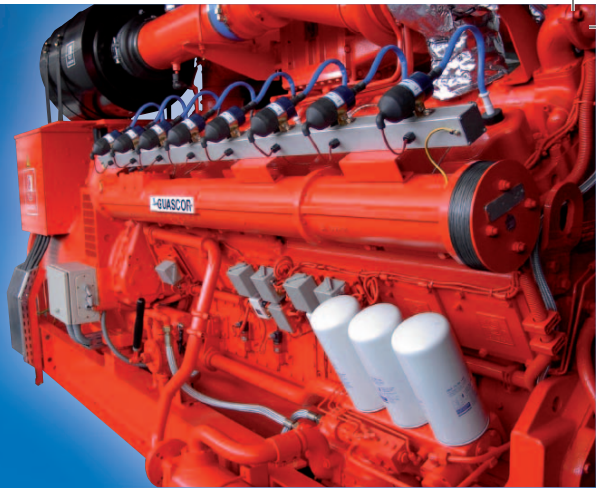
1) NOx emissions: Dry exhaust gas @ 5 % O²
2) Engine power ratings and combustion air volume flows acc. to ISO 3046/1
3) Intake air flow at delta T = 5° including combustion air
4) Other types available on request.
5) Not including piping and heat exchangers
6) These values are the mean lube oil consumption between maintenance steps.

7) At 50 Hz, U = 0.4 kV, power factor = 1
8) With a tolerance of + 5 %
9) Minimum MN: 80 (Applies only to HGM560)
10) HGM engine values for NOx ≤1000 mg/Nm3
11) More flow depending on the external circuit installed.
12) Maximum fixed on 30m3/h not to exceed the 3m/s

- Data for special gas and dual gas operation on request.

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Engine Dimensions		SFGLD 180	SFGLD 240	SFGLD 360	SFGLD 480	SFGLD 560	SFGM 560	HGM 240	HGM 560
Width	mm	1225	1248	1664	1664	1669	1669	2034	1787
Length	mm	2365	2864	2796	3033	3033	3033	3145	3409
Height	mm	1850	1914	2258	2278	2270	2270	1551	2165
Dry weight genset	kg	2700	3400	4200	5500	5500	5500	4200	7500

Genset Dimensions (50 Hz)		SFGLD 180	SFGLD 240	SFGLD 360	SFGLD 480	SFGLD 560	SFGM 560	HGM 240	HGM 560
Width	mm	1369	1369	1735	1746	1736	1736	2033	1848
Length	mm	2942	3452	3966	4637	4584	4584	3920	5648
Height	mm	2065	2065	2433	2433	2475	2475	1583	2319
Dry weight genset	kg	4060	4900	7230	9000	9300	9300	5670	11735

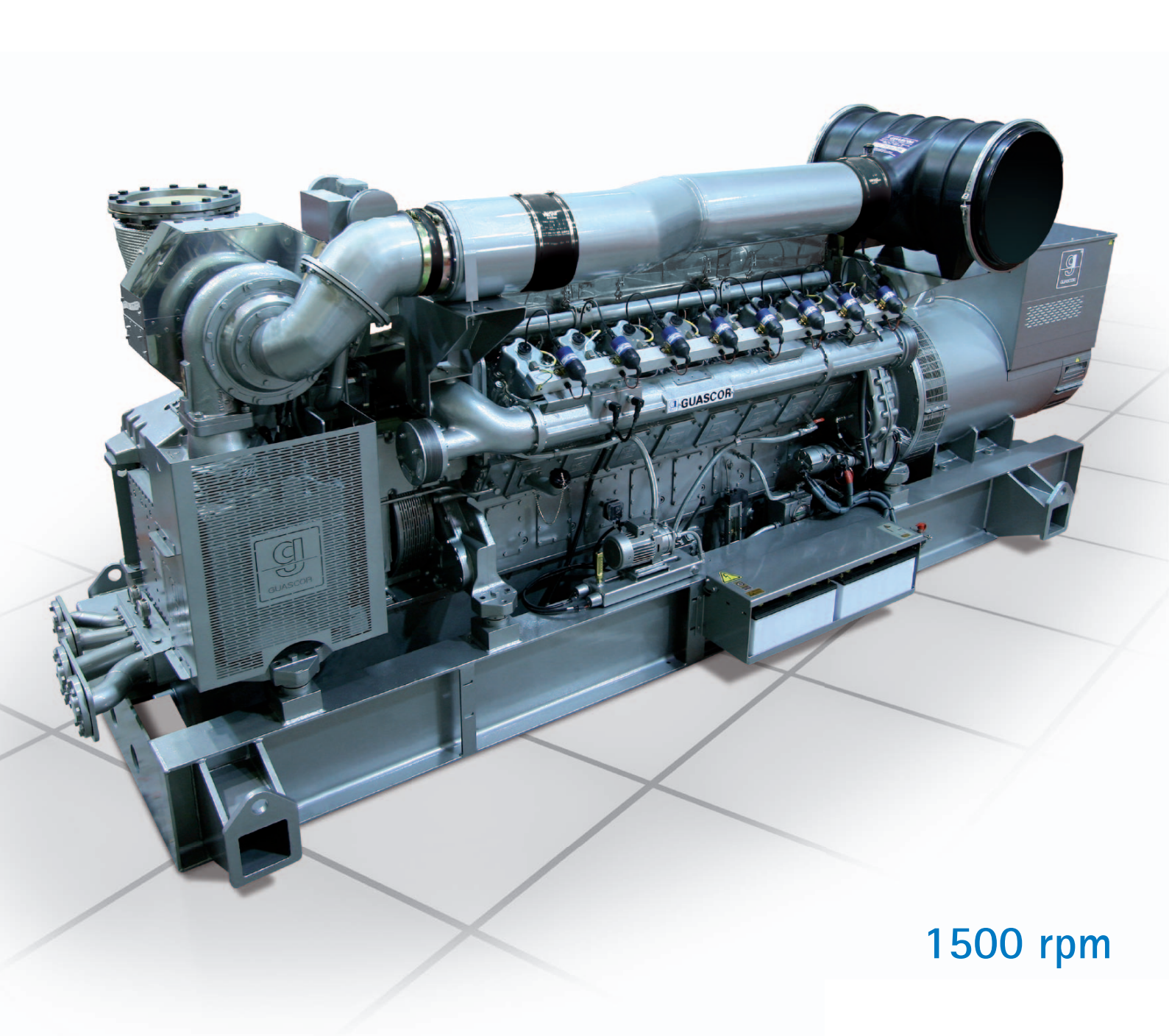
Noise emissions* 50 Hz (1500 rpm)

Engine noise dB(A)	HZ (Freq. Band)	SFGLD 180	SFGLD 240	SFGLD 360	SFGLD 480	SFGLD 560	SFGM 560	HGM 240	HGM 560
	125	--	72	70	73	76	76	69	73
	250	73	82	81	83	92	92	74	83
	500	83	87	86	88	89	89	83	85
	1000	87	90	88	90	89	89	89	88
	2000	84	89	86	89	89	89	93	92
	4000	79	86	80	82	85	85	90	89
	LpA, â dB(A)	90	95	92	95	97	97	96	96

Exhaust noise dB(A)	HZ	SFGLD 180	SFGLD 240	SFGLD 360	SFGLD 480	SFGLD 560	SFGM 560	HGM 240	HGM 560
	63	97	99	100	98	102	102	100	102
	125	118	121	121	124	121	121	121	122
	250	124	127	126	125	125	125	129	128
	500	113	116	119	124	122	122	116	122
	1000	112	115	117	121	118	118	116	119
	2000	110	114	115	119	115	115	115	117
	4000	106	109	110	111	109	109	112	112
	LpA, â dB(A)	126	128	129	130	129	129	130	130

Notes

- Data obtained according ISO 9614-2
- Data obtained @ 1 m from engine according UNE-EN ISO-11203:1996
- Maximun data Standard Deviation s = ± 4 dB(A)



1500 rpm



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