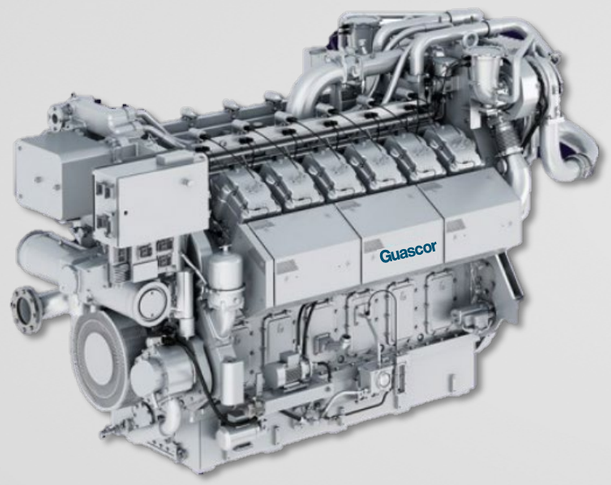
SGE-H series gas engines and gen-sets natural gas

1,200/1,500/1,800 rpm



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SGE-H series gas engines and gen-sets natural gas - 1,200/1,500/1,800 rpm

SGE-24HM & SGE-42HM

Engine Parameters [2]	English Units	Metric Units	SGE-24HM				SGE-42HM			
Speed	rpm		1,500		1,800		1,500		1,800	
Engine power [2]	bhp	kWb	697	(520)	697	(520)	1,395	(1,040)	1,395	(1,040)
Cylinder arrangement			in Line 8				V12			
Mean effective pressure	psi	bar	252	(17.4)	210	(14.5)	286	(19.7)	238	(16.4)
Bore	inch	mm	5.98	(152)	5.98	(152)	6.30	(160)	6.30	(160)
Stroke	inch	mm	6.50	(165)	6.50	(165)	6,89	(175)	6.89	(175)
Displacement	cu.in	liters	1,460	(24.0)	1,460	(24.0)	1,718	(42.2)	1,718	(42.2)
Mean piston speed	in/s	m/s	325	(8.3)	390	(9.9)	344	(8.8)	413	(10.5)
Compression ratio			11.8:1				11.9:1			
Combustion air mass flow	lbs/hr	kg/h	4,343	(1,970)	5,313	(2,410)	10,516	(4,770)	10,670	(4,840)
Packaged ventilation air flow [3]	scfm	m^3/h	21,424	(36,400)	21,424	(36,400)	42,849	(72,800)	42,849	(72,800)
Engine coolant capacity (Main circuit) [4]	gal.	liters	21	(80)	21	(80)	63	(240)	63	(240)
Engine coolant capacity (Aux. circuit) [4]	gal.	liters	5	(20)	5	(20)	20	(75)	20	(75)
Lube oil capacity [5]	gal.	liters	45	(169)	45	(169)	107	(403)	107	(403)
Lube oil consumption [5]	lbs/bhp.hr	g/kWh	0.00058	(0.35)	0.00058	(0.35)	0.00025	(0.15)	0.00025	(0.15)

1) Natural Gas MN80. For other MN consult Guascor Energy
2) Engine performance data acc. to ISO 3046/1
3) Assumes intake air flow at delta T = 5ºC including combustion air
4) Not Including pipes and heat exchangers
5) Mean lube oil consumption between maintenance steps
6) At 60 Hz, U = 0.48 kV, power factor = 1
7) At 50 Hz, U = 0.4 kV, power factor = 1
8) With a tolerance of + 5 %
9) Lower emission engines are available, consult Guascor Energy for performance data

Data is for continuous rating, at sea level, and at an ambient temperature of 77F (25ºC)
Data for special gas and dual gas operation on request.
The values given in this data sheet are for information purposes only and not binding.

SGE-H series gas engines and gen-sets natural gas - 1,200/1,500/1,800 rpm

SGE-24HM & SGE-42HM

Energy Balance	English Units	Metric Units	SGE-24HM				SGE-42HM			
Generator efficiency [6) 7)]	%	%	96.4		96.2		97.2		96.7	
Electrical power [6) 7)]	kWe	kWe	501		500		1,011		1,006	
Jacket (HT) water heat	Btu x 1,000/hr	kW	816.0	(239)	710.2	(208)	1,877.9	(550)	2,000.9	(586)
Intercooler (LT) water heat	Btu x 1,000/hr	kW	280.0	(82)	338.0	(99)	215.1	(63)	204.9	(60)
Exhaust heat - cooled to 120°C	Btu x 1,000/hr	kW	829.7	(243)	997.0	(292)	1,628.7	(477)	1,837.0	(538)
Engine radiation heat	Btu x 1,000/hr	kW	95.6	(28)	136.6	(40)	239.0	(70)	239.0	(70)
Generator radiation heat	Btu x 1,000/hr	kW	63.9	(19)	67.5	(20)	99.4	(29)	117.2	(34)
Fuel consumption [8)]	Btu x 1,000/hr	kW	4,008.5	(1,174)	4,216.8	(1,235)	8,027.3	(2,351)	8,351.7	(2,446)
Mechanical efficiency	%		44.3		42.1		44.2		42.5	
Electrical efficiency	%		42.7		40.5		43		41.1	
Thermal efficiency	%		48.0		48.5		46.4		48.4	
Total efficiency	%		90.7		90.6		89.4		89.5	

1) Natural Gas MN80. For other MN consult Guascor Energy
2) Engine performance data acc. to ISO 3046/1
3) Assumes intake air flow at delta T = 5ºC including combustion air
4) Not Including pipes and heat exchangers
5) Mean lube oil consumption between maintenance steps
6) At 60 Hz, U = 0.48 kV, power factor = 1
7) At 50 Hz, U = 0.4 kV, power factor = 1
8) With a tolerance of + 5 %
9) Lower emission engines are available, consult Guascor Energy for performance data

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Data for special gas and dual gas operation on request.
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SGE-H series gas engines and gen-sets natural gas - 1,200/1,500/1,800 rpm

SGE-24HM & SGE-42HM

System Parameters	English Units	Metric Units	SGE-24HM				SGE-42HM			
Jacket (HT) water temperature max.	ºF	ºC	194	(90)	194	(90)	194	(90)	194	(90)
Jacket (HT) water flow rate min.	gpm	m³/h	145	(33)	128	(29)	167	(57)	181	(41)
Jacket (HT) water flow rate max.	gpm	m³/h	264	(60)	264	(60)	308	(70)	308	(70)
Intercooler stages			Single				Double			
Intercooler (LT) coolant temperature	ºF	ºC	131	(55)	131	(55)	131	(55)	131	(55)
Intercooler (LT) coolant flow rate min.	gpm	m³/h	88	(20)	110	(25)	88	(20)	110	(25)
Intercooler (LT) coolant flow rate max.	gpm	m³/h	132	(30)	132	(30)	132	(30)	132	(30)
Exhaust manifold type			Dry				Dry			
Exhaust temperature	ºF	ºC	914	(490)	905	(485)	792	(422)	851	(455)
Exhaust mass flow wet	lbs/hr	kg/h	4,519	(2,050)	5,512	(2,500)	10,891	(4,940)	11,067	(5,020)
Exhaust backpressure max.	psi	mbar	0.65	(45)	0.65	(45)	0.65	(45)	0.65	(45)
Maximum pressure loss in front of air cleaner	psi	mbar	0.073	(5)	0.073	(5)	0.073	(5)	0.073	(5)
Fuel pressure range	psi	mbar	0.73 - 3.48 (50 - 240)				0.73 - 3.48 (50 - 240)			
Starter battery 2x12 V, capacity required	Ampere-hour		280				280			

Emissions [9]	English Units	Metric Units	SGE-24HM		SGE-42HM	
NOx	g/bhp.hr	mg/Nm3	< 1 / <500	< 1 / 500	< 1 / 500	< 1 / 500
CO	g/bhp.hr	mg/Nm3	< 2.2 / 1100	< 2.2 / 1100	< 2 / 1000	< 2 / <1000
THC (in C1base)	g/bhp.hr	mg/Nm3	< 3,8 / 1900	< 3,8 / 1900	< 3,8 / 1900	< 3,8 / 1900
NMHC (in C1 base)	g/bhp.hr	mg/Nm3	< 0.6 / <300	< 0.6 / <300	< 0.6 / <300	< 0.6 / <300

1) Natural Gas MN80. For other MN consult Guascor Energy
2) Engine performance data acc. to ISO 3046/1
3) Assumes intake air flow at delta T = 5ºC including combustion air
4) Not Including pipes and heat exchangers
5) Mean lube oil consumption between maintenance steps
6) At 60 Hz, U = 0.48 kV, power factor = 1
7) At 50 Hz, U = 0.4 kV, power factor = 1
8) With a tolerance of + 5 %
9) Lower emission engines are available, consult Guascor Energy for performance data

Data is for continuous rating, at sea level, and at an ambient temperature of 77F (25ºC)
Data for special gas and dual gas operation on request.
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SGE-H series gas engines and gen-sets natural gas - 1,200/1,500/1,800 rpm

SGE-56HM

Engine Parameters [2]	**English Units**	**Metric Units**	**SGE-56HM**					
Speed	rpm		1,200		1,500		1,800	
Engine power [2]	bhp	kWb	1,395	(1,040)	1,840	(1,373)	1,810	(1,350)
Cylinder arrangement			V16					
Mean effective pressure	psi	Bar	268	(18.5)	284	(19.6)	232	(16.0)
Bore	inch	mm	6.30	(160)	6.30	(160)	6.30	(160)
Stroke	inch	mm	6.89	(175)	6.89	(175)	6.89	(175)
Displacement	cu.in	litres	3,436	(56.3)	3,436	(56.3)	3,436	(56.3)
Mean piston speed	in/s	m/s	276	(7.0)	344	(8.8)	413	(10.5)
Compression ratio			11.9 : 1					
Combustion air mass flow	lbs/hr	kg/h	10,847	(4,920)	13,822	(6,270)	13,955	(6,330)
Packaged ventilation air flow [3]	scfm	m3/h	42,849	(72,800)	55,621	(94,500)	55,621	(94,500)
Engine coolant capacity (Main circuit) [4]	gal.	litres	69	(260)	69	(260)	69	(260)
Engine coolant capacity (Aux. circuit) [4]	gal.	litres	20	(75)	20	(75)	20	(75)
Lube oil capacity [5]	gal.	litres	111	(419)	111	(419)	111	(419)
Lube oil consumption [5]	lbs/bhp.hr	g/kWh	0.00025	(0.15)	0.00025	(0.15)	0.00025	(0.15)

1) Natural Gas MN80. For other MN consult Guascor Energy
2) Engine performance data acc. to ISO 3046/1
3) Assumes intake air flow at delta T = 5ºC including combustion air
4) Not Including pipes and heat exchangers
5) Mean lube oil consumption between maintenance steps
6) At 60 Hz, U = 0.48 kV, power factor = 1
7) At 50 Hz, U = 0.4 kV, power factor = 1
8) With a tolerance of + 5 %
9) Lower emission engines are available, consult Guascor Energy for performance data

Data is for continuous rating, at sea level, and at an ambient temperature of 77F (25ºC)
Data for special gas and dual gas operation on request.
The values given in this data sheet are for information purposes only and not binding.

SGE-56HM

Energy Balance	English Units	Metric Units	SGE-56HM					
Generator efficiency [6) 7)]	%	%	97.2		97.3		96.8	
Electrical power [6) 7)]	kWe	kWe	1,011		1,337		1,307	
Jacket (HT) water heat	Btu x 1,000/hr	kW	2,035.0	(596)	2,445	(716)	2,448.1	(717)
Intercooler (LT) water heat	Btu x 1,000/hr	kW	198.0	(58)	362	(106)	283.4	(83)
Exhaust heat - cooled to 120°C	Btu x 1,000/hr	kW	1,591.1	(466)	2,042	(598)	2,506.2	(734)
Engine radiation heat	Btu x 1,000/hr	kW	225.4	(66)	300	(88)	286.8	(84)
Generator radiation heat	Btu x 1,000/hr	kW	99.4	(29)	119.8	(35)	147.5	(43)
Fuel consumption [8)]	Btu x 1,000/hr	kW	8.126.3	(2,380)	10,509	(3,078)	10,816.9	(3,168)
Mechanical efficiency	%		43.7		44.6		42.6	
Electrical efficiency	%		42.5		43.4		41.3	
Thermal efficiency	%		47.1		46.1		48.4	
Total efficiency	%		89.5		89.5		89.7	

1) Natural Gas MN80. For other MN consult Guascor Energy
2) Engine performance data acc. to ISO 3046/1
3) Assumes intake air flow at delta T = 5ºC including combustion air
4) Not Including pipes and heat exchangers
5) Mean lube oil consumption between maintenance steps
6) At 60 Hz, U = 0.48 kV, power factor = 1
7) At 50 Hz, U = 0.4 kV, power factor = 1
8) With a tolerance of + 5 %
9) Lower emission engines are available, consult Guascor Energy for performance data

Data is for continuous rating, at sea level, and at an ambient temperature of 77F (25ºC)
Data for special gas and dual gas operation on request.
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SGE-H series gas engines and gen-sets natural gas - 1,200/1,500/1,800 rpm

SGE-H series gas engines and gen-sets natural gas - 1,200/1,500/1,800 rpm

SGE-56HM

System Parameters	English Units	Metric Units	SGE-56HM					
Jacket (HT) water temperature max.	ºF	ºC	194	(90)	194	(90)	194	(90)
Jacket (HT) water flow rate min.	gpm	m³/h	181	(41)	220	(50)	220	(50)
Jacket (HT) water flow rate max.	gpm	m³/h	308	(70)	308	(70)	308	(70)
Intercooler stages			Double					
Intercooler (LT) coolant temperature	ºF	ºC	131	(55)	104	(40)	131	(55)
Intercooler (LT) coolant flow rate min.	gpm	m³/h	66	(15)	88	(20)	110	(25)
Intercooler (LT) coolant flow rate max.	gpm	m³/h	132	(30)	132	(30)	132	(30)
Exhaust manifold type			Dry					
Exhaust temperature	ºF	ºC	763	(406)	766	(408)	878	(470)
Exhaust mass flow wet	lbs/hr	kg/h	11,222	(5,090)	14,307	(6,490)	14,462	(6,560)
Exhaust backpressure max.	psi	mbar	0.65	(45)	0.65	(45)	0.65	(45)
Maximum pressure loss in front of air cleaner	psi	mbar	0.073	(5)	0.073	(5)	0.073	(5)
Fuel pressure range	psi	mbar	0.73 - 3.48 (50 - 240)					
Starter battery 2x12 V, capacity required	Ampere-hour		280					

Emissions [9]	English Units	Metric Units	SGE-56HM		
NOx	g/bhp.hr	mg/Nm3	< 1 / <500	< 1 / <500	< 1 / <500
CO	g/bhp.hr	mg/Nm3	< 2 / 1000	< 2 / 1000	< 2 / 1000
THC (in C1base)	g/bhp.hr	mg/Nm3	<3.8 / 1900	< 5.3 / 2650	<3.8 / 1900
NMHC (in C1 base)	g/bhp.hr	mg/Nm3	< 0.6 / 300	< 0.9 / 450	< 0.6 / 300

1) Natural Gas MN80. For other MN consult Guascor Energy
2) Engine performance data acc. to ISO 3046/1
3) Assumes intake air flow at delta T = 5ºC including combustion air
4) Not Including pipes and heat exchangers
5) Mean lube oil consumption between maintenance steps
6) At 60 Hz, U = 0.48 kV, power factor = 1
7) At 50 Hz, U = 0.4 kV, power factor = 1
8) With a tolerance of + 5 %
9) Lower emission engines are available, consult Guascor Energy for performance data

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SGE-H series gas engines and gen-sets natural gas - 1,200/1,500/1,800 rpm

Dimensions and other data

Engine Dimensions	English Units	Metric Units	SGE-24HM		SGE-42HM		SGE-56HM	
Width	in.	mm	81,850	(2,079)	84,843	(2,155)	84,291	(2,141)
Length	in.	mm	126,890	(3,223)	140,591	(3,571)	159,095	(4,041)
Height	in.	mm	62,598	(1,590)	85,866	(2,181)	87,284	(2,217)
Dry weight	lb	kg	9,259	(4,200)	13,779	(6,250)	16,535	(7,500)

Genset Dimensions	English Units	Metric Units	SGE-24HM		SGE-42HM		SGE-56HM	
Width	in.	mm	81,850	(2,079)	84,843	(2,155)	84,291	(2,141)
Length	in.	mm	155,591	(3,952)	191,536	(4,865)	218,307	(5,545)
Height	in.	mm	68,425	(1,738)	93,425	(2,373)	91,299	(2,319)
Dry weight	lb	kg	13,735	(6,230)	23,667	(10,735)	26,896	(12,200)

Noise emissions*

Engine Noise dB(A)	HZ (Frec. Band)	SGE-24HM		SGE-42HM		SGE-56HM		
		1,500	1,800	1,500	1,800	1,200	1,500	1,800
	125	73	67	71	-	71	73	70
	250	83	77	81	74	77	83	84
	500	85	80	84	88	79	85	82
	1,000	88	88	87	83	81	88	86
	2,000	92	91	90	90	88	92	92
	4,000	89	87	89	87	83	89	88
	LpA, å dB(A)	96	94	94	94	90	96	95

SGE-H series gas engines and gen-sets natural gas - 1,200/1,500/1,800 rpm

Dimensions and other data

Noise emissions*

Exhaust Noise dB(A)	HZ	SGE-24HM		SGE-42HM		SGE-56HM		
	63	100	102	105	106	99	101	103
	125	121	131	119	129	109	122	125
	250	129	133	129	133	115	128	136
	500	116	122	116	123	116	122	127
	1,000	116	119	115	117	114	119	121
	2,000	115	117	113	114	114	117	117
	4,000	112	110	111	111	116	112	113
	LpA, å dB(A)	130	136	130	135	122	130	137

Notes: Data obtained according to ISO 9614-2 • Data obtained @1 m from engine according to UNE-EN ISO-11203:1996
Maximum data standard deviations = ± 4 dB(A)

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