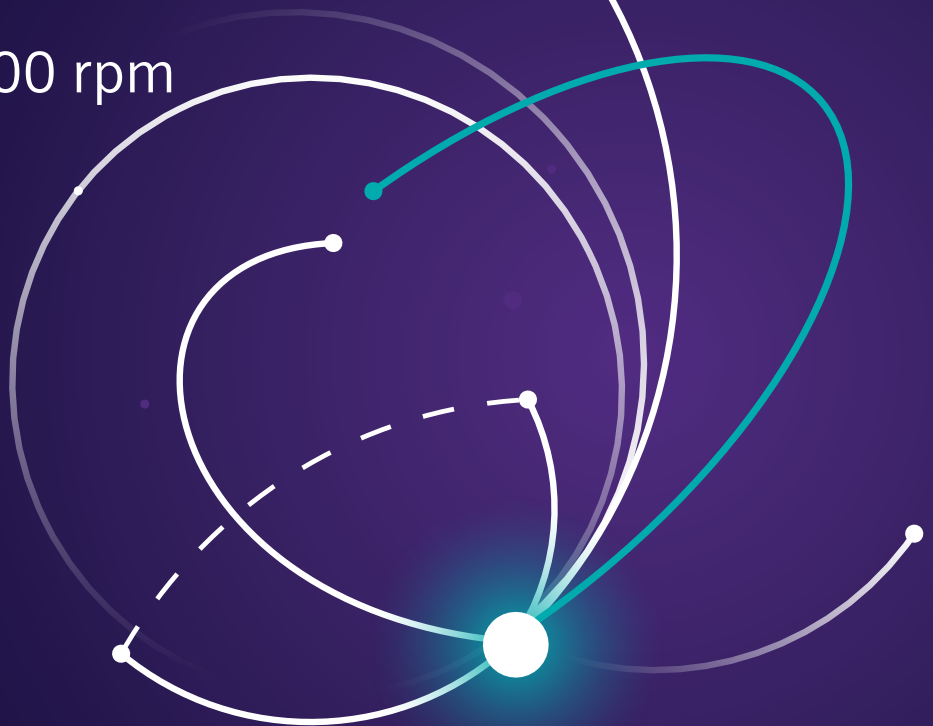


**SIEMENS**  
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# SGE-S series gas engines and gen-sets biogas

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



[siemens-energy.com/gasengines](https://www.siemens-energy.com/gasengines)

## SGE-18SL & SGE-24SL

Engine Parameters <sup>2)</sup>	English Units	Metric Units	SGE-18SL						SGE-24SL					
Speed		rpm	1,200		1,500		1,800		1,200		1,500		1,800	
Engine power <sup>2)</sup>	bhp	kWb	338	(252)	422	(315)	469	(350)	449	(335)	562	(419)	607	(453)
Cylinder arrangement			in Line 6						in Line 8					
Mean effective pressure	psi	bar	203	(14.0)	203	(14.0)	188	(13.0)	203	(14.0)	203	(14.0)	183	(12.6)
Bore	inch	mm	5.98	(152)	5.98	(152)	5.98	(152)	5.98	(152)	5.98	(152)	5.98	(152)
Stroke	inch	mm	6.50	(165)	6.50	(165)	6.50	(165)	6.50	(165)	6.50	(165)	6.50	(165)
Displacement	cu.in	Litres	1,095	(18.0)	1,095	(18.0)	1,095	(18.0)	1,460	(24.0)	1,460	(24.0)	1,460	(24.0)
Mean piston speed	in/s	m/s	260	(6.6)	325	(8.3)	390	(9.9)	260	(6.6)	325	(8.3)	390	(9.9)
Compression ratio			11.6:1						11.6:1					
Combustion air mass flow	lbs/hr	kg/h	2,800	(1,270)	3,351	(1,520)	3,858	(1,750)	3,549	(1,610)	4,409	(2,000)	4,960	(2,250)
Packaged ventilation air flow <sup>2)</sup>	scfm	m <sup>3</sup> /h	10,383	(17,640)	12,978	(22,050)	14,420	(24,500)	1,380.2	(23,450)	17,263	(29,330)	18,664	(31,710)
Engine coolant capacity (main/aux.) <sup>3)</sup>	gal.	Litres	19/7	(70/25)	19/7	(70/25)	19/7	(70/25)	24/7	(90/25)	24/7	(90/25)	24/7	(90/25)
Lube oil capacity <sup>3)</sup>	gal.	Litres	23	(86)	23	(86)	23	(86)	31	(116)	31	(116)	31	(116)
Lube oil consumption <sup>4)</sup>	lbs/bhp.hr	g/kWh	0.00058	(0.35)	0.00058	(0.35)	0.00058	(0.35)	0.00058	(0.35)	0.00058	(0.35)	0.00058	(0.35)

1) Reference gas (CH4 62,5%, CO2: 36 AND N2: 1,5%) for other biogas qualities consult Siemens Energy Engines

2) Engine performance data acc. to ISO 3046/1

3) Assumes intake air flow at delta T = 5°C including combustion air

4) Not Including pipes and heat exchangers

5) Mean lube oil consumption between maintenance steps

## SGE-18SL & SGE-24SL

Energy Balance	English Units	Metric Units	SGE-18SL				SGE-24SL							
Generator efficiency <sup>5) 6)</sup>	%	%	95.5	96.5	96.1	95.9	96.6	96.1						
Electrical power <sup>5) 6)</sup>	Btu x 1,000/hr	kW	241	304	336	321	405	435						
Jacket (HT) water heat	Btu x 1,000/hr	kW	607.8	(178)	754.6	(221)	816.0	(239)	959.5	(281)	1,038.0	(304)	1,188.2	(348)
Intercooler (LT) water heat	Btu x 1,000/hr	kW	150.2	(44)	143.4	(42)	239.0	(70)	174.1	(51)	211.7	(62)	269.7	(79)
Exhaust heat - cooled to 120°C	Btu x 1,000/hr	kW	341.4	(100)	460.9	(135)	583.9	(171)	525.8	(154)	614.6	(180)	805.8	(236)
Engine radiation heat	Btu x 1,000/hr	kW	37.6	(11)	58.0	(17)	54.6	(16)	58.0	(17)	78.5	(23)	68.3	(20)
Generator radiation heat	Btu x 1,000/hr	kW	38.7	(11)	37.6	(11)	46.6	(14)	46.9	(14)	48.6	(14)	60.3	(18)
Fuel consumption <sup>7)</sup>	Btu x 1,000/hr	kW	2,140.8	(627)	2,663.2	(780)	3,086.6	(904)	3,045.7	(892)	3,602.2	(1,055)	4,134.9	(1,211)
Mechanical efficiency		%	40.2		40.4		38.7		37.6		39.7		37.4	
Electrical efficiency		%	38.4		39.0		37.2		36.0		38.4		35.9	
Thermal efficiency		%	51.4		51.0		53.1		54.5		51.8		54.7	
Total efficiency		%	89.7		90.0		90.3		90.5		90.1		90.7	

5) At 60 Hz, U = 0.48 kV, power factor = 1

6) At 50 Hz, U = 0.4 kV, power factor = 1

7) With a tolerance of + 5 %

Data is for continuous rating, at sea level, and at an ambient temperature of 77F (25°C)

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-18SL & SGE-24SL

System Parameters	English Units	Metric Units	SGE-18SL				SGE-24SL							
Jacket (HT) water temperature max.	°F	°C	194	(90)	194	(90)	194	(90)	194	(90)	194	(90)	194	(90)
Jacket (HT) water flow rate min/max.	gpm	m <sup>3</sup> /hr	110/264	(25/60)	136/264	(31/60)	145/264	(33/60)	172/264	(39/60)	185/264	(42/60)	211/264	(48/60)
Intercooler stages			Single				Single							
Intercooler (LT) coolant temperature max.	°F	°C	131	(55)	131	(55)	131	(55)	131	(55)	131	(55)	131	(55)
Intercooler (LT) coolant flow rate min./max.	gpm	m <sup>3</sup> /hr	66/132	15/30	88/132	20/30	110/132	25/30	66/132	15/30	88/132	20/30	110/132	25/30
Exhaust manifold type			Wet				Wet							
Exhaust temperature	°F	°C	655	(346)	705	(374)	750	(399)	738	(392)	711	(377)	784	(418)
Exhaust mass flow wet	lbs/hr	kg/h	3,064	(1,390)	3,660	(1,660)	4,233	(1,920)	3,902	(1,770)	4,828	(2,190)	5,467	(2,480)
Exhaust back-pressure max.	psi	mbar	0.65	(45)	0.65	(45)	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)	0.073	(5)	0.073	(5)
EFuel 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 <sup>8)</sup>	English Units	Metric Units	SGE-18SL			SGE-24HM		
NOx	g/bhp.hr	< 1	< 1.1	< 1	< 1	< 1.1	< 1	
CO	g/bhp.hr	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	
THC (in C1base)	g/bhp.hr	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	
NMHC (in C1 base)	g/bhp.hr	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	

8) Lower emission engines are available; contact a sales representative for performance data  
 - Engine performance data acc. to ISO 3046/1  
 - The values given in this data sheet are for information purposes only and not binding

## SGE-36SL & SGE-48SL

Engine Parameters <sup>2)</sup>	English Units	Metric Units	SGE-36SL						SGE-48SL							
			rpm		1,200		1,500		1,800		1,200		1,500		1,800	
Speed			rpm		1,200		1,500		1,800		1,200		1,500		1,800	
Engine power <sup>2)</sup>	bhp	kWb	675	(503)	845	(630)	939	(700)	898	(670)	1,124	(838)	1,215	(906)		
Cylinder arrangement			V12						V16							
Mean effective pressure	psi	bar	203	(14.0)	203	(14.0)	188	(13.0)	203	(14.0)	203	(14.0)	183	(12.6)		
Bore	inch	mm	5.98	(152)	5.98	(152)	5.98	(152)	5.98	(152)	5.98	(152)	5.98	(152)		
Stroke	inch	mm	6.50	(165)	6.50	(165)	6.50	(165)	6.50	(165)	6.50	(165)	6.50	(165)		
Displacement	cu.in	Litres	2,191	(35.9)	2,191	(35.9)	2,191	(35.9)	2,921	(47.9)	2,921	(47.9)	2,921	(47.9)		
Mean piston speed	in/s	m/s	260	(6.6)	325	(8.3)	390	(9.9)	260	(6.6)	325	(8.3)	390	(9.9)		
Compression ratio			11.6:1						11.6:1							
Combustion air mass flow	lbs/hr	kg/h	5,401	(2,450)	6,745	(3,060)	7,584	(3,440)	7,319	(3,320)	8,841	(4,010)	9,480	(4,300)		
Packaged ventilation air flow <sup>2)</sup>	scfm	m <sup>3</sup> /h	20,724	(35,210)	25,956	(44,100)	28,840	(49,000)	27,604	(46,900)	34,526	(58,660)	37,328	(63,420)		
Engine coolant capacity (main/aux.) <sup>3)</sup>	gal.	Litres	48/11	(180/40)	48/11	(180/40)	48/11	(200/50)	53/13	(200/50)	53/13	(200/50)	53/13	(200/50)		
Lube oil capacity <sup>3)</sup>	gal.	Litres	46	(174)	46	(174)	46	(174)	62	(233)	62	(195)	62	(233)		
Lube oil consumption <sup>4)</sup>	lbs/bhp.hr	g/kWh	0.00058	(0.35)	0.00058	(0.35)	0.00058	(0.35)	0.00058	(0.35)	0.00058	(0.35)	0.00058	(0.35)		

1) Reference gas (CH4 62,5%, CO2: 36 AND N2: 1,5%) for other biogas qualities consult Siemens Energy Engines

2) Engine performance data acc. to ISO 3046/1

3) Assumes intake air flow at delta T = 5°C including combustion air

4) Not Including pipes and heat exchangers

5) Mean lube oil consumption between maintenance steps

## SGE-36SL & SGE-48SL

Energy Balance	English Units	Metric Units	SGE-36SL				SGE-48SL							
Generator efficiency <sup>5) 6)</sup>	%	%	96.3	96.2	96.7	96.6	97	96.3						
Electrical power <sup>5) 6)</sup>	Btu x 1,000/hr	kW	485	610	677	647	813	873						
Jacket (HT) water heat	Btu x 1,000/hr	kW	1,498.9	(439)	1,741.4	(510)	1,956.5	(573)	2,161.3	(633)	2,332.0	(683)	2,765.7	(810)
Intercooler (LT) water heat	Btu x 1,000/hr	kW	99	(29)	102.4	(30)	143.4	(42)	119.5	(35)	170.7	(50)	187.8	(55)
Exhaust heat - cooled to 120°C	Btu x 1,000/hr	kW	665.8	(195)	921.9	(270)	1,160.9	(340)	1,072.1	(314)	1,242.8	(364)	1,638.9	(480)
Engine radiation heat	Btu x 1,000/hr	kW	61.5	(18)	102.4	(30)	102.4	(30)	75.1	(22)	112.7	(33)	112.7	(33)
Generator radiation heat	Btu x 1,000/hr	kW	62.3	(18)	66.7	(21)	78.9	(30)	77.8	(23)	85.8	(25)	112.9	(33)
Fuel consumption <sup>7)</sup>	Btu x 1,000/hr	kW	4,322.7	(1,266)	5,364.1	(1,571)	6,142.5	(1,799)	6,074.3	(1,785)	7,177.8	(2,102)	8,299.2	(2,428)
Mechanical efficiency		%	39.7		40.1		38.9		37.5		39.9		37.3	
Electrical efficiency		%	38.7		38.9		37.6		36.3		38.7		36.0	
Thermal efficiency		%	52.4		51.6		53.1		55		52.2		55.4	
Total efficiency		%	90.7		90.4		90.7				90.9		91.3	

5) At 60 Hz, U = 0.48 kV, power factor = 1  
 6) At 50 Hz, U = 0.4 kV, power factor = 1  
 7) With a tolerance of + 5 %

## SGE-36SL & SGE-48SL

System Parameters	English Units	Metric Units	SGE-36SL				SGE-48SL							
Jacket (HT) water temperature max.	°F	°C	194	(90)	194	(90)	194	(90)	194	(90)	194	(90)	194	(90)
Jacket (HT) water flow rate min/max.	gpm	m <sup>3</sup> /hr	132/308	(30/70)	154/308	(35/70)	176/308	(40/70)	194/308	(44/70)	207/308	(48/70)	247/308	(56/70)
Intercooler stages			Double				Double							
Intercooler (LT) coolant temperature max.	°F	°C	131	(55)	131	(55)	131	(55)	131	(55)	131	(55)	131	(55)
Intercooler (LT) coolant flow rate min./max.	gpm	m <sup>3</sup> /hr	66/132	15/30	88/132	20/30	110/132	25/30	66/132	15/30	88/132	20/30	110/132	25/30
Exhaust manifold type			Wet				Wet							
Exhaust temperature	°F	°C	658	(348)	702	(372)	756	(402)	732	(389)	714	(379)	817	(436)
Exhaust mass flow wet	lbs/hr	kg/h	5,908	(2,680)	7,363	(3,340)	8,311	(3,770)	8,047	(3,650)	9,700	(4,400)	10,472	(4,750)
Exhaust back-pressure max.	psi	mbar	0.65	(45)	0.65	(45)	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)	0.073	(5)	0.073	(5)
EFuel 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 <sup>8)</sup>	English Units	Metric Units	SGE-36SL				SGE-48SL							
NOx	g/bhp.hr		< 1	< 1.1	< 1	< 1	< 1	< 1.1	< 1	< 1	< 1.1	< 1	< 1	< 1.1
CO	g/bhp.hr		< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
THC (in C1base)	g/bhp.hr		< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5
NMHC (in C1 base)	g/bhp.hr		< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7

8) With a tolerance of + 5 %

9) Lower emission engines are available, consult Siemens Energy Engines for performance data

## SGE-56SL & SGE-56SM

Engine Parameters <sup>2)</sup>	English Units	Metric Units	SGE-56SL						SGE-56SM			
			1,200		1,500		1,800		1,500		1,800	
Speed		rpm										
Engine power <sup>2)</sup>	bhp	kWb	1,057	(788)	1,321	(985)	1,431	(1,067)	1,415	(1,055)	1,475	(1,100)
Cylinder arrangement			V16						V16			
Mean effective pressure	psi	bar	203	(14.0)	203	(14.0)	183	(12.6)	217	(15.0)	189	(13.0)
Bore	inch	mm	6.30	(160)	6.30	(160)	6.30	(160)	6.30	(160)	6.30	(160)
Stroke	inch	mm	6.89	(175)	6.89	(175)	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)	3,436	(56.3)	3,436	(56.3)
Mean piston speed	in/s	m/s	276	(7.0)	344	(8.8)	413	(10.5)	344	(8.8)	413	(10.5)
Compression ratio			12.3 : 1						12.3 : 1			
Combustion air mass flow	lbs/hr	kg/h	8422	(3,820)	10251	(4,650)	11773	(5,340)	10869	(4,930)	11464	(5,200)
Packaged ventilation air flow <sup>2)</sup>	scfm	m <sup>3</sup> /h	32466	(55,160)	40582	(68,950)	43961	(74,690)	43467	(73,850)	45321	(77,000)
Engine coolant capacity (main/aux.) <sup>3)</sup>	gal.	Litres	53/16	(200/60)	53/16	(200/60)	53/16	(200/60)	53/16	(200/60)	53/16	(200/60)
Lube oil capacity <sup>3)</sup>	gal.	Litres	72	(272)	72	(272)	72	(272)	72	(272)	72	(272)
Lube oil consumption <sup>4)</sup>	lbs/bhp.hr	g/kWh	0.00033	(0.20)	0.00033	(0.20)	0.00033	(0.20)	0.00016	(0.10)	0.00016	(0.10)

1) Reference gas (CH4 62,5%, CO2: 36 AND N2: 1,5%) for other biogas qualities consult Siemens Energy Engines

2) Engine performance data acc. to ISO 3046/1

3) Assumes intake air flow at delta T = 5°C including combustion air

4) Not Including pipes and heat exchangers

5) Mean lube oil consumption between maintenance steps



## SGE-56SL & SGE-56SM

Energy Balance	English Units	Metric Units	SGE-56SL				SGE-56SM					
Generator efficiency <sup>5) 6)</sup>	%	%	96.8	97.2	96.3	97.2	96.9					
Electrical power <sup>5) 6)</sup>	Btu x 1,000/hr	kW	763	957	1,028	1025	1066					
Jacket (HT) water heat	Btu x 1,000/hr	kW	2287.7	(670)	2,748.6	(805)	3062.7	(897)	2093.0	(613)	2284.2	(669)
Intercooler (LT) water heat	Btu x 1,000/hr	kW	143.4	(42)	181.0	(53)	187.8	(55)	225.4	(66)	266.3	(78)
Exhaust heat - cooled to 120°C	Btu x 1,000/hr	kW	1072.1	(314)	1,464.8	(429)	2007.7	(588)	2,222.8	(651)	2,550.6	(747)
Engine radiation heat	Btu x 1,000/hr	kW	112.7	(33)	126.3	(37)	129.7	(38)	177.5	(52)	187.8	(55)
Generator radiation heat	Btu x 1,000/hr	kW	86.1	(25)	94.2	(28)	134.8	(39)	100.9	(30)	116.4	(34)
Fuel consumption <sup>7)</sup>	Btu x 1,000/hr	kW	6,740.1	(1,974)	8,413.1	(2,464)	9,638.9	(2,823)	8,880.9	(2,601)	9,635.5	(2,822)
Mechanical efficiency		%	39.9	40.0	37.8	40.6	39.0					
Electrical efficiency		%	38.6	38.9	36.4	39.4	37.8					
Thermal efficiency		%	52.0	52.2	54.6	51.1	52.9					
Total efficiency		%	90.6	91.1	91.1	90.6	90.7					

5) At 60 Hz, U = 0.48 kV, power factor = 1  
 6) At 50 Hz, U = 0.4 kV, power factor = 1  
 7) With a tolerance of + 5 %

## SGE-56SL & SGE-56SM

System Parameters	English Units	Metric Units	SGE-56SL				SGE-56SM					
Jacket (HT) water temperature max.	°F	°C	194	(90)	194	(90)	194	(90)	194	(90)	194	(90)
Jacket (HT) water flow rate min/max.	gpm	m <sup>3</sup> /hr	207/308	(46/70)	247/308	(56/70)	273/308	(62/70)	189/308	(43/70)	203/308	(46/70)
Intercooler stages			Double				Double					
Intercooler (LT) coolant temperature max.	°F	°C	131	(55)	131	(55)	131	(55)	131	(55)	131	(55)
Intercooler (LT) coolant flow rate min./max.	gpm	m <sup>3</sup> /hr	66/132	15/30	88/132	20/30	110/132	25/30	88/132	25/30	110/132	25/30
Exhaust manifold type			Wet				Dry					
Exhaust temperature	°F	°C	671	(355)	721	(383)	813	(434)	927	(497)	984	(529)
Exhaust mass flow wet	lbs/hr	kg/h	9215	(4,180)	11,244	(5,100)	12,919	(5,860)	11,905	(5,400)	12,588	(5,710)
Exhaust back-pressure max.	psi	mbar	0.65	(45)	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)	0.073	(5)
EFuel 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 <sup>9)</sup>	English Units	Metric Units	SGE-56SL		SGE-56SM	
NOx	g/bhp.hr	< 1	< 1.1	< 1	< 1.1	< 1
CO	g/bhp.hr	< 1.8	< 1.8	< 1.8	< 2.2	< 2.2
THC (in C1base)	g/bhp.hr	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5
NMHC (in C1 base)	g/bhp.hr	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7

9) Lower emission engines are available, consult Siemens Energy Engines for performance data

## Dimensions and other data

Engine Dimensions	English Units	Metric Units	SGE-24HM		SGE-42HM		SGE-56HM	
Width	in.	mm	81.8	(2,079)	84.8	(2,155)	84.2	(2,141)
Length	in.	mm	126.9	(3,223)	140.6	(3,571)	159.1	(4,041)
Height	in.	mm	62.6	(1,590)	85.8	(2,181)	87.3	(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	81.8	(2,079)	84.8	(2,155)	84.2	(2,141)
Length	in.	mm	155.5	(3,952)	191.5	(4,865)	218.3	(5,545)
Height	in.	mm	68.4	(1,738)	93.4	(2,373)	91.3	(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, à dB(A)		96	94	94	94	90	96	95

## Dimensions and other data

### Noise emissions\*

Engine Noise dB(A)	HZ	SGE-24HM		SGE-42HM		SGE-56HM		
	63	100	102	105	106	99	102	103
	125	121	131	119	109	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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