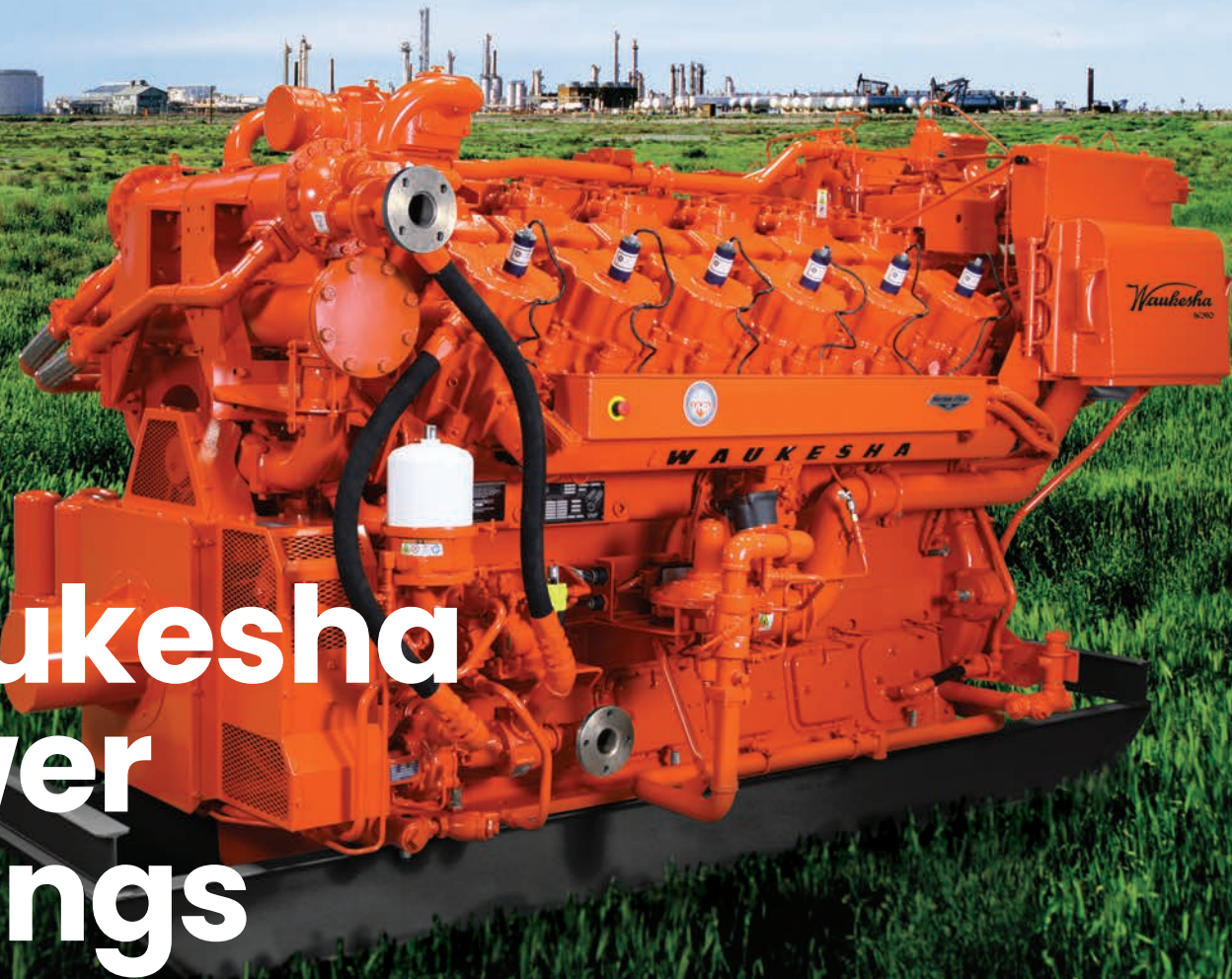


Waukesha

Waukesha Power Ratings



Gas Compression & Mechanical Drives

Waukesha* Natural Gas Fueled Engines (Continuous Duty)

275GL*+				750 rpm	800 rpm	900 rpm	1000 rpm
Model	Disp.	Bore & Stroke	C.R.	bhp kWb	bhp kWb	bhp kWb	bhp kWb
16V275GL+ with ESM2	17,398 in ³ (285 L)	10.83 x 11.81" (275 x 300 mm)	9:1	3750 2796	4000 2983	4500 3356	5000 3729
12V275GL+ with ESM2	13,048 in ³ (213.9 L)	10.83 x 11.81" (275 x 300 mm)	9:1	2812 2097	3000 2237	3375 2517	3750 2796
16V275GL+ with ESM2, Fuel Flex	17,398 in ³ (285 L)	10.83 x 11.81" (275 x 300 mm)	8:1	3750 2796	4000 2983	4500 3356	5000 3729
12V275GL+ with ESM2, Fuel Flex	13,048 in ³ (213.9 L)	10.83 x 11.81" (275 x 300 mm)	8:1	2812 2097	3000 2237	3375 2517	3750 2796

VHP*				800 rpm	900 rpm	1000 rpm	1200 rpm
Model	Disp.	Bore & Stroke	C.R.	bhp kWb	bhp kWb	bhp kWb	bhp kWb
P9394GSI S5	9388 in ³ (153.9 L)	9.375 x 8.5" (238 x 216 mm)	9.7:1	— —	1875 1398	2083 1554	2500 1864
L7044GSI S5			9.7:1	— —	1425 1063	1583 1181	1900 1417
L7044GSI	7040 in ³ (115.4 L)	9.375 x 8.5" (238 x 216 mm)	8:1	1120 ¹ 835 ¹	1260 ¹ 940 ¹	1400 ¹ 1044 ¹	1680 ¹ 1253 ¹
L7042GSI S5			9.7:1	— —	1125 839	1250 932	1500 1119
L7042GSI S4			8:1	987 ¹ 736 ¹	1110 ¹ 828 ¹	1233 ¹ 920 ¹	1480 ¹ 1104 ¹
L5794GSI			8.2:1	920 ¹ 686 ¹	1035 ¹ 772 ¹	1150 ¹ 858 ¹	1380 ¹ 1029 ¹
L5794LT	5788 in ³ (94.9 L)	8.5 x 8.5" (216 x 216 mm)	10.2:1	614 ⁵ 458 ⁵	1005 ⁵ 749 ⁵	1208 901	1450 1081
L5774LT			10.2:1	614 ⁵ 458 ⁵	934 ⁵ 696 ⁵	1067 795	1280 954
F3524GSI	3520 in ³ (57.7 L)	9.375 x 8.5" (238 x 216 mm)	8:1	560 ¹ 418 ¹	630 ¹ 470 ¹	700 ¹ 522 ¹	840 ¹ 626 ¹
F3514GSI			8:1	493 ¹ 368 ¹	555 ¹ 414 ¹	617 ¹ 460 ¹	740 ¹ 552 ¹

VGF*				1200 rpm	1400 rpm	1500 rpm	1600 rpm	1800 rpm
Model	Disp.	Bore & Stroke	C.R.	bhp kWb	bhp kWb	bhp kWb	bhp kWb	bhp kWb
P48GSI/GSID			8.6:1	— —	830 620	885 660	945 705	1065 800
P48GL/GLD	2924 in ³ (48 L)	5.98 x 6.5" (152 x 165 mm)	11:1	710 ⁴ 530 ⁴	830 ⁴ 620 ⁴	885 ⁴ 660 ⁴	945 ⁴ 705 ⁴	1065 ⁴ 800 ⁴
P48GL			8.7:1	— —	830 620	885 660	945 705	1065 800
P48GL/GLD			11:1	— —	910 ³ 680 ³	975 ³ 730 ³	1040 ³ 775 ³	1175 ³ 880 ³
L36GSI/GSID			8.6:1	— —	620 460	670 500	710 530	800 600
L36GL/GLD	2193 in ³ (36 L)	5.98 x 6.5" (152 x 165 mm)	11:1	— —	620 460	670 500	710 530	800 600
L36GL			8.7:1	— —	620 460	670 500	710 530	800 600
L36GL/GLD			11:1	— —	685 ³ 510 ³	735 ³ 550 ³	780 ³ 580 ³	880 ³ 660 ³
H24SE			8.6:1	— —	415 310	445 330	475 355	530 400
H24GL/GLD	1462 in ³ (24 L)	5.98 x 6.5" (152 x 165 mm)	11:1	355 ⁴ 265 ⁴	415 ⁴ 310 ⁴	445 ⁴ 330 ⁴	475 ⁴ 355 ⁴	530 ⁴ 400 ⁴
H24GL			8.7:1	— —	415 310	445 330	475 355	530 400
H24GL/GLD			11:1	— —	455 ³ 340 ³	490 ³ 365 ³	520 ³ 390 ³	585 ³ 440 ³
F18SE			8.6:1	— —	310 230	335 250	355 265	400 300
F18GL/GLD	1096 in ³ (18 L)	5.98 x 6.5" (152 x 165 mm)	11:1	— —	310 230	335 250	355 265	400 300
F18GL			8.7:1	— —	310 230	335 250	355 265	400 300
F18GL/GLD			11:1	— —	340 ³ 255 ³	365 ³ 275 ³	390 ³ 290 ³	440 ³ 330 ³
F18G			11:1	160 119	185 138	200 149	215 160	240 179

Notes:

- All ratings are at an intercooler water temperature of 130°F (54.4°C).
- LFPS available on L5794LT engine for power generation applications only.

ISO Standard Power (Continuous Power Rating): The highest load and speed which can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance. It is permissible to operate the engine at up to 10% overload for two hours in every 24 hour period.

Mechanical Drives

Waukesha Natural Gas Fueled Engines (Intermittent Duty)

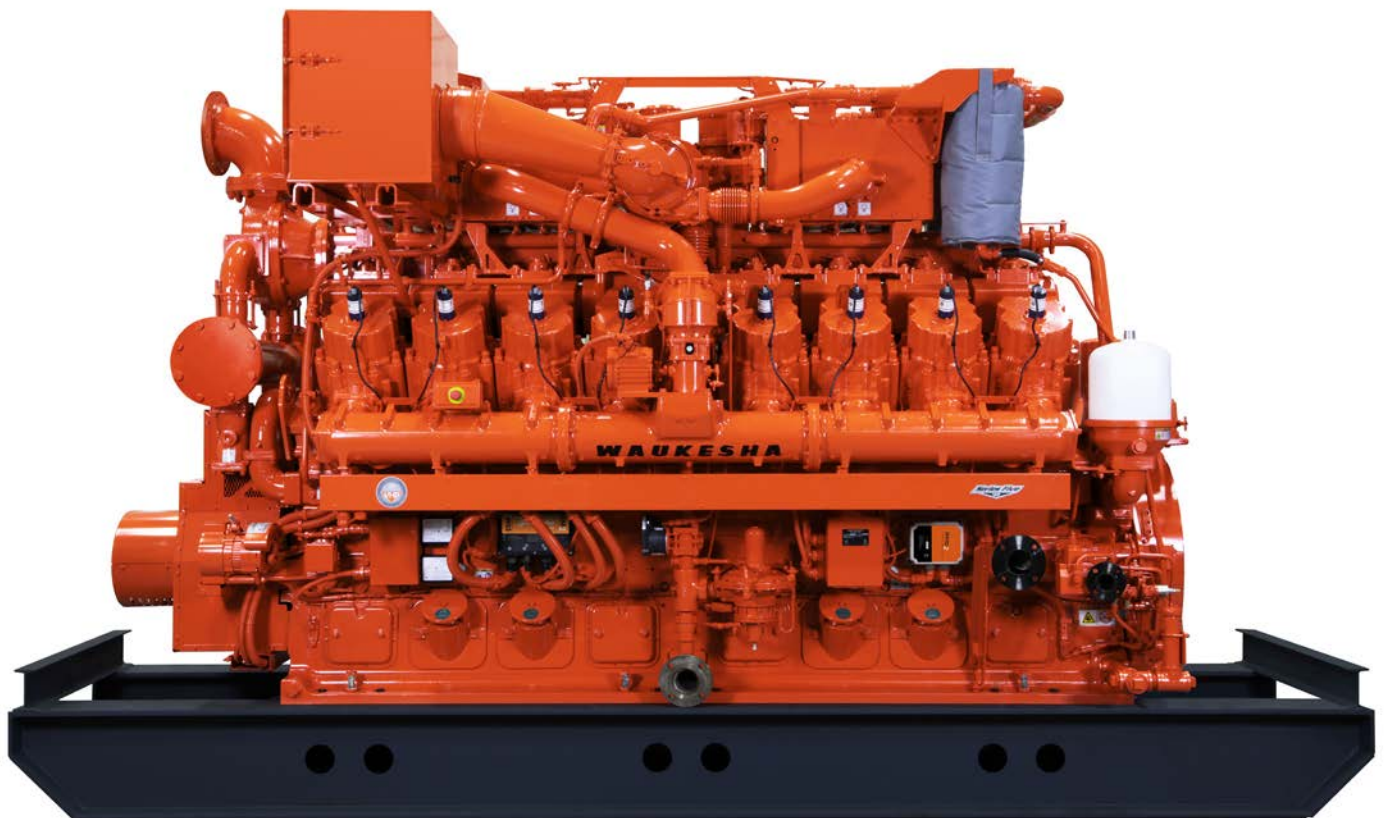
VGF				1200 rpm	1400 rpm	1500 rpm	1600 rpm	1800 rpm
Model	Disp.	Bore & Stroke	C.R.	bhp kWb	bhp kWb	bhp kWb	bhp kWb	bhp kWb
P48GSI/GSID	2924 in ³ (48 L)	5.98 x 6.5" (152 x 165 mm)	8.6:1	— —	910 680	975 730	1040 775	1175 880
P48GL/GLD			11:1	785 ⁴ 585 ⁴	910 ⁴ 680 ⁴	975 ⁴ 730 ⁴	1040 ⁴ 775 ⁴	1175 ⁴ 880 ⁴
P48GL			8.7:1	— —	910 680	975 730	1040 775	1175 880
L36GSI/GSID	2193 in ³ (36 L)	5.98 x 6.5" (152 x 165 mm)	8.6:1	— —	685 510	735 550	780 580	880 660
L36GL/GLD			11:1	— —	685 510	735 550	780 580	880 660
L36GL			8.7:1	— —	685 510	735 550	780 580	880 660
H24SE	1462 in ³ (24 L)	5.98 x 6.5" (152 x 165 mm)	8.6:1	— —	455 340	490 365	520 390	585 440
H24GL/GLD			11:1	395 ⁴ 290 ⁴	455 ⁴ 340 ⁴	490 ⁴ 365 ⁴	520 ⁴ 390 ⁴	585 ⁴ 440 ⁴
H24GL			8.7:1	— —	455 340	490 365	520 390	585 440
F18SE	1096 in ³ (18 L)	5.98 x 6.5" (152 x 165 mm)	8.6:1	— —	340 255	365 275	390 290	440 330
F18GL/GLD			11:1	— —	340 255	365 275	390 290	440 330
F18GL			8.7:1	— —	340 255	365 275	390 290	440 330
F18G			11:1	180 130	205 155	220 165	240 180	265 195

1) Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to Technical Data for LFPS ambient and altitude adjustments.

3) These power ratings require pricebook option Code 1100 (176 BMEP). They are available continuously when applied per WKI* Power and Timing Curve S7079-19. It is permissible to operate at up to 5% overload for two hours in each 24 hour period.

4) Inline engine ratings are 1200 - 1400 rpm for low speed turbocharger operation and 1400 - 1800 rpm for high speed turbocharger operation.
Vee engine ratings are 1100 - 1600 rpm for low speed turbocharger operation and 1400 - 1800 rpm for high speed turbocharger operation.

5) No overload allowed.



Power Generation

Waukesha Natural Gas Fueled Engine & Enginotor*

275GL+		Remote Radiator Cooling (kWe)		Engines Only (kWb)	
		60Hz	50Hz	60Hz	50Hz
Model	Continuous	Continuous	Model	Continuous	Continuous
	900 rpm	1000 rpm		900 rpm	1000 rpm
16V275GL+ with ESM2	3200	3600	16V 275GL+	3356	3729
12V275GL+ with ESM2	2410	2685	12V 275GL+	2517	2796
16V275GL+ with ESM2, Fuel Flex	3200	3600	16V 275GL+	3356	3729
12V275GL+ with ESM2, Fuel Flex	2410	2685	12V 275GL+	2517	2796

VHP		Remote Radiator Cooling (kWe)		Engines Only (kWb)	
		60Hz	50Hz	60Hz	50Hz
Model	Continuous	Continuous	Model	Continuous	Continuous
	1200 rpm	1000 rpm		1200 rpm	1000 rpm
VHP9504GSI S5	1770	1600	P9394GSI	1860	1680
VHP7104GSI/GSID S5	1350 ⁶	1235	L7044GSI S5	1417 ⁶	1300
VHP7104GSI/GSID	1200	1100 ⁷	L7044GSI	1253	1153 ⁷
VHP7100GSI/GSID S5	1065 ⁶	1005	L7042GSI S5	1116 ⁶	1053
VHP7100GSI/GSID S4	1050	875	L7042GSI S4	1104	920
VHP5904LT/LTD	1025	900 ⁷	L5794LT	1078	947 ⁷
VHP5904GSI/GSID	980	900 ⁷	L5794GSI	1029	947 ⁷
VHP3604GSI/GSID	600	540 ⁷	F3524GSI	627	573 ⁷

VGF		Remote Radiator Cooling (kWe)				Engines Only (kWb)		
		60Hz		50Hz		Model	60Hz	50Hz
Model	Continuous	Standby	Continuous	Standby	Model		Continuous	Continuous
	1800 rpm	1800 rpm	1500 rpm	1500 rpm		1800 rpm	1500 rpm	
VGF48SE	In Development		—	—	P48SE	1100	—	
VGF48GL/GLD	830 ³	860	685 ³	715	P48GL/GLD	880 ³	730 ³	
VGF48GSI/GSID	750	825	625	685	P48GSI/GSID	800	660	
VGF36GL/GLD	620 ³	645	515 ³	535	L36GL/GLD	660 ³	550 ³	
VGF36GSI/GSID	560	620	475	515	L36GSI/GSID	600	500	
VGF24GL/GLD	415 ³	425	340 ³	355	H24GL/GLD	440 ³	365 ³	
VGF24SE	375	410	310	340	H24SE	400	330	
VGF18GL/GLD	310 ³	315	250 ³	260	F18GL/GLD	330 ³	275 ³	
VGF18SE	280	310	230	255	F18SE	300	250	

Power Generation

Radiator Cooling (Unit Mounted)

VHP Model	60Hz	50Hz
	Continuous (kWe)	Continuous (kWe)
	1200 rpm	1000 rpm
VHP7104GSI/GSID S5	1285 ⁶	1190
VHP7104GSI/GSID	1150 ¹	1050 ^{1,7}
VHP7100GSI/GSID S5	1020 ⁶	975
VHP7100GSI/GSID S4	1000 ¹	835 ^{1,7}
VHP5904LT	990	860 ⁷
VHP5904LTD	990	860 ^{1,7}
VHP5904GSI/GSID	940 ¹	860 ^{1,7}
VHP3604GSI/GSID	560 ¹	500 ^{1,7}

VGF Model	60Hz		50Hz	
	Continuous (kWe)	Standby (kWe)	Continuous (kWe)	Standby (kWe)
	1800 rpm	1800 rpm	1500 rpm	1500 rpm
VGF48GL/GLD	810 ³	825	670 ³	700
VGF48GSID	730	800	610	650
VGF36GL/GLD	590 ³	625	500 ³	525
VGF36GSID	530	600	450	490
VGF24GL/GLD	390 ³	405	325 ³	350
VGF24SE	350	395	295	325
VGF18GL/GLD	295 ³	300	240 ³	250
VGF18SE	265	300	220	240

mobileFLEX

Natural Gas Fueled Engine & Enginator (Continuous Duty)

Power Generation, **60Hz**, EPA Certified
(Mobile Tier 2 Certified Per 40 CFR 1048)
(Stationary Certified Per 40 CFR 60 JJJJ)

Mobile Power Generation, **50 Hz**
50 Hz Engines are not EPA Certified (Non-North America Only)

Model	Remote Radiator Cooling (kWe)	Model	Engines Only (kWb)
VHP Enginator	1200 rpm	Engine	1200 rpm
VHP5904GSI-EPA	980	L5794GSI-EPA	1029
VHP7104GSI-EPA	1200	L7044GSI-EPA	1253

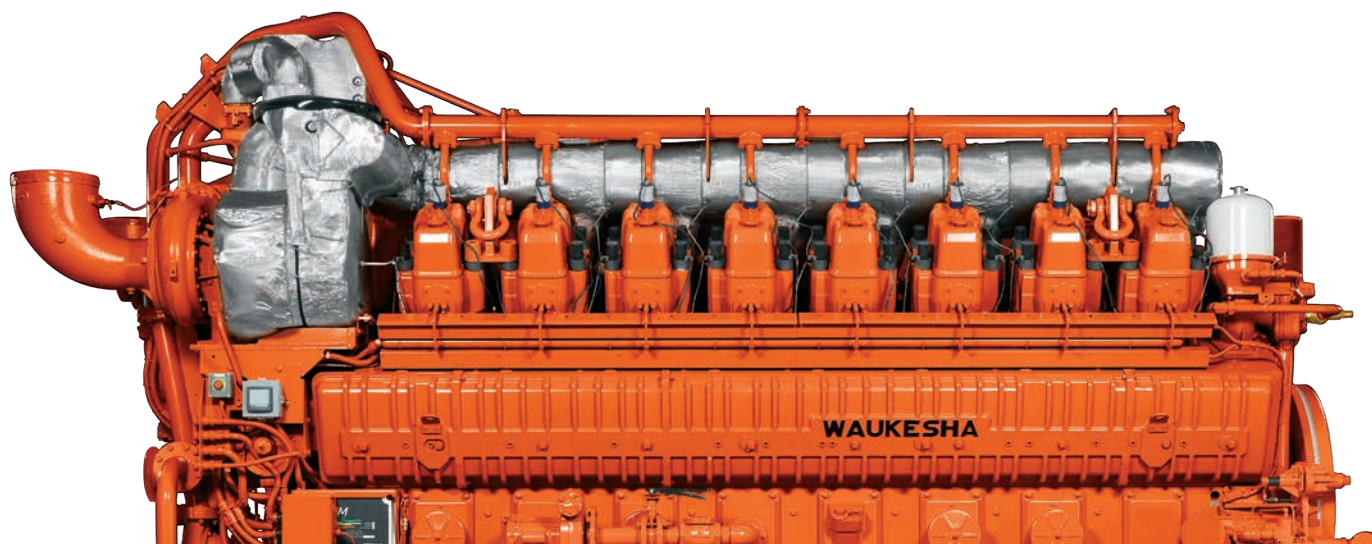
Model	Remote Radiator Cooling (kWe)	Model	Engines Only (kWb)
VHP Enginator	1000 rpm	Engine	1000 rpm
VHP5904GSI-MOB	900 ⁷	L5794GSI-MOB	947 ⁷
VHP7104GSI-MOB	1100 ⁷	L7044GSI-MOB	1153 ⁷

VGF Enginator	1800 rpm	Engine	1800 rpm
VGF18SE-EPA	280	F18SE-EPA	300
VGF24SE-EPA	375	H24SE-EPA	400

- 1) Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to technical data for LFPS ambient and altitude adjustments.
- 3) These power ratings require pricebook option Code 1100 (176 BMEP). They are available continuously when applied per WK1 Power and Timing Curve S7079-19. It is permissible to operate at up to 5% overload for two hours in each 24 hour period.
- 6) 60Hz rating available only for GSI S5 model.
- 7) No overload allowed.

Generator Standby Power Rating (kWe): This rating applies to those systems used as a secondary source of electrical power. This rating is the output the system will produce continuously (no overload), 24 hours per day for the duration of the prime power source outage.

Notes: kWe output is based on 0.8 Power Factor Enginator efficiency.



Alternative Fuels

(Continuous Duty)

Biogas - Landfill - Digester

VHP				1000 rpm			1200 rpm		
Model	Disp.	Bore & Stroke	C.R.	bhp	kWb	kWe*	bhp	kWb	kWe*
L5794LT	5788 in ³ (94.9 L)	8.5 x 8.5" (216 x 216 mm)	10.2:1	1270 ^{1,7}	947 ^{1,7}	900 ^{1,7}	1445 ¹	1078 ¹	1025 ¹

VGF				1500 rpm			1800 rpm		
Model	Disp.	Bore & Stroke	C.R.	bhp	kWb	kWe*	bhp	kWb	kWe*
P48GLD	2924 in ³ (48 L)	5.98 x 6.5" (152 x 165 mm)	11:1	885 ¹¹	660 ¹¹	625 ¹¹	1060 ¹¹	800 ¹¹	750 ¹¹
L36GLD	2193 in ³ (36 L)	5.98 x 6.5" (152 x 165 mm)	11:1	670 ¹¹	500 ¹¹	475 ¹¹	800 ¹¹	600 ¹¹	560 ¹¹
H24GLD	1462 in ³ (24 L)	5.98 x 6.5" (152 x 165 mm)	11:1	445 ¹¹	330 ¹¹	310 ¹¹	530 ¹¹	400 ¹¹	375 ¹¹
F18GLD	1096 in ³ (18 L)	5.98 x 6.5" (152 x 165 mm)	11:1	335 ¹¹	250 ¹¹	230 ¹¹	400 ¹¹	300 ¹¹	280 ¹¹

1) Engine available with Low Fuel Pressure System (LFPS) with the same ratings. Refer to technical data for LFPS ambient and altitude adjustments.

7) No overload allowed.

11) Engine operation using 400 - 500 Btu/ft³ (15.7 - 19.7 MJ/m³). Landfill fuel requires 175°F (80°C) ICW. Option code 1100 is not available.

Notes:

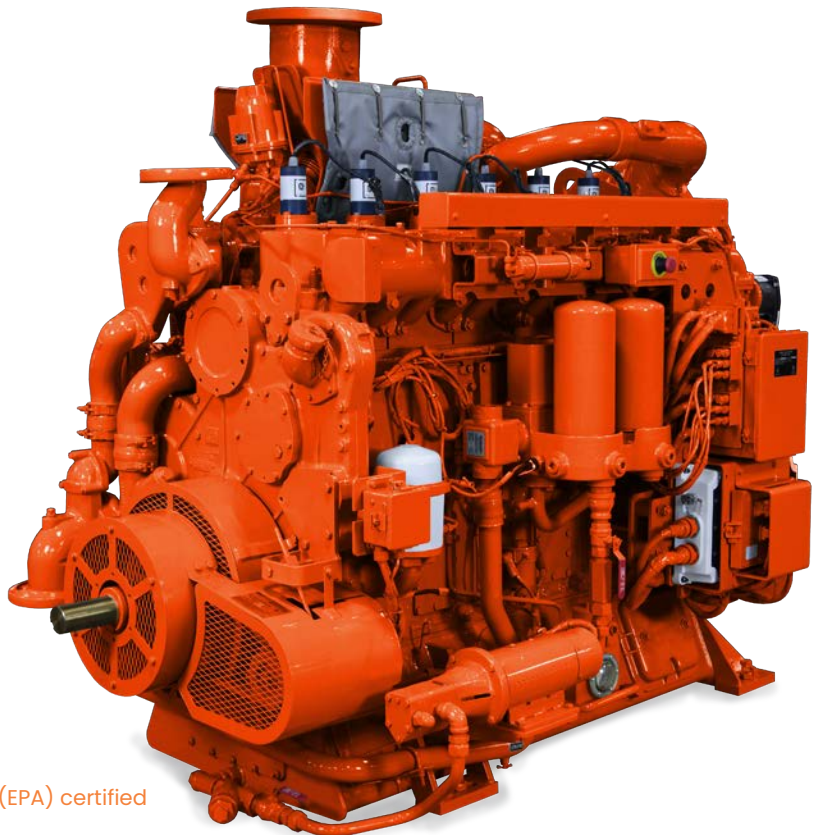
- Low Btu (calorific value) fueled engines operate on fuel with 400 Btu/ft³ (15.7 MJ/m³) or greater saturated low heat (net calorific value) and are equipped with special low Btu fuel system.
- VGF GLD - Gas lean combustion with draw-thru carburetion. Minimum regulated gas supply pressure is 8" H₂O (12.44 mbar)
- Generator efficiencies are typical values. Please consult with your packager.
- All ratings are at an intercooler water temperature of 130°F (54.4°C).

Waukesha Engine Model Prefix Designations

Number of cylinders except 275GL which states actual number of cylinders.
 P = 16 H = 8 L = 12 F = 6

Suffix Designations

- G = Naturally aspirated
- GSI = Turbocharged intercooled
- GSID = Turbocharged intercooled draw-thru
- GL = Turbocharged intercooled lean burn
- LT = Lean combustion turbulence
- GLD = Turbocharged intercooled lean burn draw-thru
- LTD = Lean combustion turbulence draw-thru
- EPA = United States Environmental Protection Agency (EPA) certified
- MOB = Mobile, non-certified, Non-North America
- SE = Turbocharged intercooled draw-thru with ESM



HD-5 Propane Fueled Engines

(Continuous Duty)

275GL+				900 rpm	1000 rpm
Model	Disp.	Bore & Stroke	C.R.	bhp kWb	bhp kWb
16V275GL+ with ESM2, Fuel Flex	17,398 in ³ (285 L)	10.83 x 11.81" (275 x 300 mm)	8:1	3750 2800	4175 3115
12V275GL+ with ESM2, Fuel Flex	13,048 in ³ (213.9 L)	10.83 x 11.81" (275 x 300 mm)	8:1	2812 2100	3130 2336

VHP				900 rpm	1000 rpm	1200 rpm
Model	Disp.	Bore & Stroke	C.R.	bhp kWb	bhp kWb	bhp kWb
P9394GSI S5	9388 in ³ (153.9 L)	9.375 x 8.5" (238 x 216 mm)	9.7:1	1600 1193	1780 1327	2135 1592
L7044GSI S5	7040 in ³ (115.4 L)	9.375 x 8.5" (238 x 216 mm)	9.7:1	1200 895	1333 994	1600 1193
L7044GSI			8:1	864 644	960 716	1152 859
L7042GSI S5			9.7:1	1125 839	1250 932	1500 1119
L7042GSI S4			8:1	864 644	960 716	1152 859
L5794GSI	5788 in ³ (94.9 L)	8.5 x 8.5" (216 x 216 mm)	8.2:1	789 588	877 654	1052 785
F3524GSI	3520 in ³ (57.7 L)	9.375 x 8.5" (238 x 216 mm)	8:1	472 352	524 391	629 469

VGf				1500 rpm	1800 rpm
Model	Disp.	Bore & Stroke	C.R.	bhp kWb	bhp kWb
P48GSID	2924 in ³ (48 L)	5.98 x 6.5" (152 x 165 mm)	8.6:1	609 454	731 545
P48GL/GLD			11:1	496 370	604 450
P48GL			8.7:1	885 ¹⁹ 660 ¹⁹	1065 ¹⁹ 800 ¹⁹
L36GSID	2193 in ³ (36 L)	5.98 x 6.5" (152 x 165 mm)	8.6:1	457 341	548 409
L36GL/GLD			11:1	376 280	442 330
L36GL			8.7:1	670 ¹⁹ 500 ¹⁹	800 ¹⁹ 600 ¹⁹
H24SE			8.6:1	366 273	439 327
H24GL/GLD	1462 in ³ (24 L)	5.98 x 6.5" (152 x 165 mm)	11:1	249 186	299 223
H24GL	1096 in ³ (18 L)	5.98 x 6.5" (152 x 165 mm)	8.7:1	445 ¹⁹ 330 ¹⁹	530 ¹⁹ 400 ¹⁹
F18SE			8.6:1	274 204	329 246
F18GL/GLD			11:1	187 139	224 167
F18GL			8.7:1	335 ¹⁹ 250 ¹⁹	400 ¹⁹ 300 ¹⁹
F18G			11:1	187 139	224 167

19) Contact Application Engineering regarding stability in Power Generation applications

Notes:

- No overload allowed on all HD-5 propane ratings.
- Requires a minimum of 34 WKI fuel.
- Engine may require optional fuel system.
- All ratings are at an intercooler water temperature of 130°F (54.4°C).

Rating Standard: All models: Ratings conform to ISO 3046/1 (latest version) with a mechanical efficiency of 90% and auxiliary water temperature, T_{cr}, as specified in the Power Rating Chart, Bulletin 1079 (latest version) limited to ±10° F (+5.5° C). Ratings are also valid for SAE J1349, BS 5514, DIN 6271 and API 7B-11C standard atmospheric reference conditions.

Fuel Standard: All natural gas engine ratings are based on 900 BTU/ft³ (35.38 MJ/m³ [25, V(0; 101.325)]) SLHV, 91 WKI minimum, commercial quality natural gas. Refer to S-7884-7 (latest version) for full gaseous fuel specifications.

ISO Standard Power (Continuous Power Rating): The highest load and speed that can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance at ISO standard ambient reference conditions. Unless otherwise stated, at ISO standard ambient reference conditions, it is permissible to operate the engine at up to 110% of the ISO Standard Power or the maximum power indicated by the intermittent rating, whichever is lower, for two hours in every 24 hour period.

ISO Service Power (Site Continuous Power Rating): The highest load and speed that can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance at the operating and ambient conditions of the site application. Unless otherwise stated, it is permissible to operate the engine at up to 110% of the ISO Service Power (see the Overload Power definition) or the intermittent power rating available at the site operating and ambient conditions, whichever is lower, for two hours in every 24 hour period.

Overload Power: The power that an engine is permitted to supply, with a duration and frequency of use depending upon the service application, at stated ambient conditions, immediately after operating at its ISO Service Power rating. Unless otherwise stated, it is permissible to operate the engine at up to 110% of the ISO Service Power or the intermittent power rating available at the site operating and ambient conditions, whichever is lower, for two hours in every 24 hour period. For situations without a defined intermittent power, the allowable 10% overload power is reduced from ISO standard ambient reference conditions by the applicable rating adjustments listed in the Intermittent/Standby Power column.

Intermittent Power Rating: The highest load and speed that can be applied in variable speed mechanical system applications only. Operation at this rating is limited to a maximum of 3500 hours per year.

Generator Continuous Power Rating (kW_e): The highest load and speed which can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance. Unless otherwise stated, it is permissible to operate the engine at up to 110% of the generator continuous power rating for two hours in every 24 hour period.

Generator Standby Power Rating (kW_e): This rating applies to those systems used as a secondary source of electrical power. This rating is the output the system will produce continuously 24 hours per day for the duration of the prime power source outage. No overload is allowed. This rating may reduce the lifecycle intervals.



Purposely designed for the oil & gas industry's most challenging and remote environments, our earliest technologies are still among the industry's best performers. Committed to each customer's success, today Waukesha is building on this foundation by evolving engine technologies, innovating new service capabilities, and increasing the impact of its distributors and packagers.

Reliability + Productivity

Waukesha Gas Engines maximize uptime and prevent unplanned downtime through reliable and available engines that excel in the most challenging and remote environments with:

- Smart controls, data analytics and equipment intelligence.
- Fuel flexibility and robust performance.

Short Payback + Long-Term ROI

With an immediate upfront capital expenditure advantage, and lasting operational expenditure savings, Waukesha's engines lower overall cost of ownership by:

- Reducing maintenance and downtime.
- Generating short and long-term bottom-line benefits.

Maintenance + Upgrades

Optimize engine performance, improve fuel efficiency, and equip existing engines with today's advanced technologies, using:

- Remanufactured OEM warrantied parts and engines.
- Customized maintenance and parts programs.

Service + Support

End-users and channel partners have direct access to Waukesha's deep expertise through dedicated sales engineering teams, committed to each customer's success. This includes:

- Technical support through industry and engine-specific experts.
- Customized training and customer service solutions.

Visit <https://www.waukeshaengine.com> for more information on Waukesha's gas engines and services.