

Generator set data sheet



EPA Emissions

Model: GGHH
kW rating: 100 natural gas Standby
 100 propane Standby
Frequency 60
Fuel type Natural gas/propane

Exhaust emission data sheet:	EDS-327
Exhaust emission compliance sheet:	
Sound performance data sheet:	MSP-185
Cooling performance data sheet:	
Prototype test summary data sheet:	PTS-147
Standard set-mounted radiator cooling outline:	0500-3485

Fuel consumption	Natural gas				Propane				Propane							
	Standby kW (kVA)				Prime kW (kVA)				Prime kW (kVA)				Prime kW (kVA)			
Ratings	100 (125)								100 (125)							
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
US gph	406	618	848	1090					178	272	367	467				
L/hr	11.5	17.5	24	30.9					5.1	7.7	10.4	13.2				

Engine	Natural gas				Propane			
	Standby rating		Prime rating		Standby rating		Prime rating	
Engine model	WSG-1068							
Configuration	Cast iron, V 10 cylinder							
Aspiration	Turbocharged							
Gross engine power output, kWm (bhp)	114.2 (153.2)				114.2 (153.2)			
BMEP at set rated load, kPa (psi)	1158.3 (168.0)				1158.3 (168.0)			
Bore, mm (in.)	90.2				90.2			
Stroke, mm (in.)	105.9 (4.17)				105.9 (4.17)			
Rated speed, rpm	1800				1800			
Piston speed, m/s (ft/min)	6.4 (1250.0)				6.4 (1250.0)			
Compression ratio	9.0:1				9.0:1			
Lube oil capacity, L (qt)	6.1 (6.5)				6.1 (6.5)			
Overspeed limit, rpm	2400 ± 50				2400 ± 50			
Regenerative power, kW	16:00				16:00			

Fuel flow

Minimum operating pressure. kPa (in H ₂ O)	1.7 (7.0)		1.7 (7.0)	
Minimum operating pressure. kPa (in H ₂ O)	3.4 (13.6)		3.4 (13.6)	

Air	Natural gas		Propane	
	Standby rating	Prime rating	Standby rating	Prime rating
Combustion air, m ³ /min (scfm)	6.3 (222.0)		5.8 (204.0)	
Maximum air cleaner restriction, kPa (in H ₂ O)	1.2 (5.0)		1.2 (5.0)	
Alternator cooling air, m ³ /min (scfm)	37.0 (1308.0)		37.0 (1308.0)	

Exhaust

Exhaust flow at set rated load, m ³ /min (cfm)	19.4 (687.0)		17.9 (633.0)	
Exhaust temperature, °C (°F)	573 (1063)		555 (1031)	
Maximum back pressure, kPa (in H ₂ O)	6.2 (25.0)		6.2 (25.0)	
Available back pressure for additional sound attenuation and piping, kPa (in H ₂ O)	2.5 (10.0)		2.5 (10.0)	

Standard set-mounted radiator cooling¹

Ambient design, °C (°F)	40 (104)		40 (104)	
Fan load, kW _m (HP)	7.3 (9.8)		7.3 (9.8)	
Coolant capacity (with radiator), L (US gal)	33.0 (8.8)		33.0 (8.8)	
Cooling system air flow, m ³ /min (scfm)	193.1 (6825.0)		193.1 (6825.0)	
Total heat rejection, MJ/min (Btu/min)	9.3 (8740.0)		9.3 (8740.0)	
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.124 (0.5)		0.124 (0.5)	

Weights²

Unit dry weight kgs (lbs)	1093 (2410)
Unit wet weight kgs (lbs)	1133 (2498)

Notes:

¹ For non-standard remote installations contact your local Cummins representative.

² Weights represent a set with standard features. See outline drawing for weights of other configurations.

Alternator data

Natural gas Three phase table ¹		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C	150 °C	150 °C	150 °C
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet number		208	208	210	207	207	207	209	207	206	207	206
Voltage ranges		110/190 Thru 120/208 220/380 Thru 240/416	120/208 Thru 139/240 240/416 Thru 277/480	120/208 Thru 139/240 240/416 Thru 277/480	347/600	110/190 Thru 120/208 220/380 Thru 240/416	120/208 Thru 139/240 240/416 Thru 277/480	120/208 Thru 139/240 240/416 Thru 277/480	347/600	110/190 Thru 120/208 220/380 Thru 240/416	120/208 Thru 139/240 240/416 Thru 277/480	347/600
Surge kW		111	111	112	110	109	109	111	110	108	109	109
Motor Starting kVA (at 90% sustained voltage)	Shunt	422	422	563	360	360	360	516	360	313	360	313
	PMG	497	497	663	423	423	423	607	423	368	423	368

Full Load Current - Amps at Standby Rating	<u>120/208</u> 347	<u>127/220</u> 328	<u>139/240</u> 301	<u>220/380</u> 190	<u>240/416</u> 173	<u>277/480</u> 150	<u>347/600</u> 120
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Propane three phase table ¹		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C	150 °C	150 °C	150 °C
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet number		208	208	210	207	207	207	209	207	206	207	206
Voltage ranges		110/190 Thru 120/208 220/380 Thru 240/416	120/208 Thru 139/240 240/416 Thru 277/480	120/208 Thru 139/240 240/416 Thru 277/480	347/600	110/190 Thru 120/208 220/380 Thru 240/416	120/208 Thru 139/240 240/416 Thru 277/480	120/208 Thru 139/240 240/416 Thru 277/480	347/600	110/190 Thru 120/208 220/380 Thru 240/416	120/208 Thru 139/240 240/416 Thru 277/480	347/600
Surge kW		104	104	104	103	102	102	104	103	101	102	102
Motor Starting kVA (at 90% sustained voltage)	Shunt	422	422	563	360	360	360	516	360	313	360	313
	PMG	497	497	663	423	423	423	607	423	368	423	368

Full Load Current - Amps at Standby Rating	<u>120/208</u> 347	<u>127/220</u> 328	<u>139/240</u> 301	<u>220/380</u> 190	<u>240/416</u> 173	<u>277/480</u> 150	<u>347/600</u> 120
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Alternator data continued

Natural gas single phase table ¹		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C			
Feature code		B418	B415	B274	B268	B417	B414	B273	B267			
Alternator data sheet number		208	208	209	210	207	207	208	209			
Voltage ranges		102/240 ³	102/240 ³	102/240 ³	102/240 ³	102/240 ³	102/240 ³	102/240 ³	102/240 ³			
Surge kW		108	108	110	109	106	106	109	108			
Motor Starting kVA (at 90% sustained voltage)	Shunt	250	250	305	330	215	215	250	305			
	PMG	290	290	360	385	250	250	290	360			

Full Load Current - Amps at Standby Rating	$\frac{120/240^2}{278}$	$\frac{120/240^3}{328}$
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Propane gas single phase table ¹		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C			
Feature code		B418	B415	B274	B268	B417	B414	B273	B267			
Alternator data sheet number		208	208	209	210	207	207	208	209			
Voltage ranges		102/240 ³	102/240 ³	102/240 ³	102/240 ³	102/240 ³	102/240 ³	102/240 ³	102/240 ³			
Surge kW		101	101	103	102	100	100	102	101			
Motor Starting kVA (at 90% sustained voltage)	Shunt	250	250	305	330	215	215	250	305			
	PMG	290	290	360	385	250	250	290	360			

Full Load Current - Amps at Standby Rating	$\frac{120/240^2}{278}$	$\frac{120/240^3}{328}$
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Notes:

- 1 - Single phase power can be taken from a three phase generator set at up to 2/3 set rated 3-phase kW at 1.0 power factor. Also see Note 3 below.
- 2 - The broad range alternators can supply single phase output up to 2/3 set rated 3-phase kW at 1.0 power factor.
- 3 - The extended stack (full single phase output) and 4 lead alternators can supply single phase output up to full set rated 3-phase kW at 1.0 power factor.

Derating factors

Natural gas

Standby/Prime Three phase	Engine power available up to 594 m (1950 ft) at ambient temperatures up to 40 °C (104 °F). Altitude derate - 4% per 305 m (1000 ft) above 594 m (1950 ft). Temperature derate - 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).
Standby/Prime Full single phase output	Engine power available up to 594 m (1950 ft) at ambient temperatures up to 30 °C (86 °F). Altitude derate - 4% per 305 m (1000 ft) above 594 m (1950 ft). Temperature derate - 4% per 10 °C (2% per 10 °F) above 30 °C (86 °F).

Propane

Standby/Prime Three phase	Engine power available up to 305 m (1000 ft) at ambient temperatures up to 25 °C (77 °F). Altitude derate - 4% per 305 m (1000 ft) above 305 m (1000 ft). Temperature derate - 2% per 11 °C (1% per 10 °F) above 25 °C (77 °F).
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Ratings definitions

Emergency Standby Power (ESP):	Limited-Time Running Power (LTP):	Prime Power (PRP):	Base Load (Continuous) Power (COP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

Formulas for calculating full load currents:

Three phase output	Single phase output
$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$	$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

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