

# Generator set data sheet



## EPA emissions

**Model:** GGHG  
**kW rating** 85 natural gas Standby  
 85 propane Standby  
**Frequency:** 60 Hz  
**Fuel type:** Natural gas/propane

Exhaust emission data sheet:	EDS-326
Exhaust emission compliance sheet:	
Sound performance data sheet:	MSP-184
Cooling performance data sheet:	
Prototype test summary data sheet:	PTS-147
Standard set-mounted radiator cooling outline:	0500-3485

Fuel consumption	Natural gas								Propane							
	Standby kW (kVA)				Prime kW (kVA)				Standby kW (kVA)				Prime kW (kVA)			
Ratings	85 (106)								85 (106)							
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
scfh	294	491	710	945					129	216	310	407				
m <sup>3</sup> /hr	8.3	13.9	20.1	26.8					3.7	6.1	8.8	11.5				

Engine	Natural gas				Propane			
	Standby rating		Prime rating		Standby rating		Prime rating	
Engine model	WSG-1068							
Configuration	Cast iron, V-10 cylinder							
Aspiration	Turbocharger							
Gross engine power output, kW <sub>m</sub> (bhp)	98.1 (131.6)				98.1 (131.6)			
BMEP at rated load, kPa (psi)	1012.2 (146.8)				1012.2 (146.8)			
Bore, mm (in.)	90.2 (3.55)				90.2 (3.55)			
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	Natural gas	Propane
Minimum operating pressure, kPa (in H <sub>2</sub> O)	1.7 (7.0)	1.7 (7.0)
Maximum operating pressure, kPa (in H <sub>2</sub> O)	3.4 (13.6)	3.4 (13.6)

Air	Natural gas		Propane	
	Standby rating	Prime rating	Standby rating	Prime rating
Combustion air, m <sup>3</sup> /min (scfm)	5.6 (197.0)		5.0 (175.0)	
Maximum air cleaner restriction, kPa (in H <sub>2</sub> O)	1.2 (5.0)		1.2 (5.0)	
Alternator cooling air, m <sup>3</sup> /min (cfm)	37.0 (1308.0)		37.0 (1308.0)	

## Exhaust

Exhaust flow at set rated load, m <sup>3</sup> /min (cfm)	17.3 (611.0)		15.4 (545.0)	
Exhaust temperature, °C (°F)	573 (1063)		555 (1031)	
Maximum back pressure, kPa (in H <sub>2</sub> O)	6.2 (25.0)		6.2 (25.0)	
Available back pressure for additional sound attenuation and piping, kPa (in H <sub>2</sub> O)	2.5 (10.0)		2.5 (10.0)	

## Standard set-mounted radiator cooling<sup>1</sup>

Ambient design, °C (°F)	40 (104)		40 (104)	
Fan load, kW <sub>m</sub> (HP)	7.3 (9.8)		7.3 (9.8)	
Coolant capacity (with radiator), L (US gal)	33.1 (8.8)		33.0 (8.8)	
Cooling system air flow, m <sup>3</sup> /min (scfm)	193.1 (6825.0)		193.1 (6825.0)	
Total heat rejection, MJ/min (Btu/min)	8.1 (7635.0)		8.1 (7635.0)	
Maximum cooling air flow static restriction, kPa (in H <sub>2</sub> O)	0.124 (0.5)		0.124 (0.5)	

## Weights<sup>2</sup>

Unit dry weight kgs (lbs)	1071 (2362)
Unit wet weight kgs (lbs)	1111 (2450)

### Notes:

<sup>1</sup> For non-standard remote installations contact your local Cummins representative.

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

## Alternator data

Natural gas three phase table <sup>1</sup>		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		206	207	209	206	206	206	208	206	206	206	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		109	109	111	109	109	108	110	109	109	108	109
Motor starting kVA (at 90% sustained voltage)	Shunt	313	360	516	313	313	313	422	313	313	313	313
	PMG	368	423	607	368	368	368	497	368	368	368	368
Full load current amps at Standby rating		<u>120/208</u> 295	<u>127/220</u> 279	<u>139/240</u> 256	<u>220/380</u> 161	<u>240/416</u> 147	<u>277/480</u> 128	<u>347/600</u> 102				

## Alternator data (continued)

Propane three phase table <sup>1</sup>		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		206	207	209	206	206	206	208	206	206	206	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		102	102	104	102	102	101	103	102	102	101	102
Motor starting kVA (at 90% sustained voltage)	Shunt	313	360	516	313	313	313	422	313	313	313	313
	PMG	368	423	607	368	368	368	497	368	368	368	368

Full load current amps at Standby rating	$\frac{120/208}{295}$	$\frac{127/220}{279}$	$\frac{139/240}{256}$	$\frac{220/380}{161}$	$\frac{240/416}{147}$	$\frac{277/480}{128}$	$\frac{347/600}{102}$
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Natural gas single phase table		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		206	207	208	209	206	206	207	208			
Voltage ranges		120/240 <sup>2</sup>	120/240 <sup>2</sup>	120/240 <sup>2</sup>	120/240 <sup>2</sup>	120/240 <sup>2</sup>	120/240 <sup>2</sup>	120/240 <sup>2</sup>	120/240 <sup>2</sup>			
Surge kW		106	107	110	109	106	106	108	107			
Motor starting kVA (at 90% sustained voltage)	Shunt	185	215	250	305	185	185	215	250			
	PMG	220	250	290	360	220	220	250	290			

Full load current amps at Standby rating	$\frac{120/240^2}{237}$	$\frac{127/220}{279}$
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Propane single phase table		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		206	207	208	209	206	206	207	208			
Voltage ranges		120/240 <sup>1</sup>	120/240 <sup>2</sup>	120/240 <sup>1</sup>	120/240 <sup>3</sup>	120/240 <sup>2</sup>	120/240 <sup>2</sup>	120/240 <sup>3</sup>	120/240 <sup>3</sup>			
Surge kW		99	100	103	102	99	99	101	101			
Motor starting kVA (at 90% sustained voltage)	Shunt	185	215	250	305	185	185	215	250			
	PMG	220	250	290	360	220	220	250	290			

Full load current amps at Standby rating	$\frac{120/240^2}{237}$	$\frac{127/220}{279}$
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### Notes:

<sup>1</sup> - 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.

<sup>2</sup> - The broad range alternators can supply single phase output up to 2/3 set rated 3-phase kW at 1.0 power factor.

<sup>3</sup> - 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

<b>Standby/Prime</b>	Engine power available up to 1554 m (5100 ft) at ambient temperatures up to 40 °C (104 °F). Above 1554 m (5100 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).
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### Propane

<b>Standby/Prime</b>	Engine power available up to 1097 m (3600 ft) at ambient temperatures up to 40 °C (104 °F). Above 1097 m (3600 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).
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## Ratings definitions

<b>Emergency Standby Power (ESP):</b>	<b>Limited-Time Running Power (LTP):</b>	<b>Prime Power (PRP):</b>	<b>Base Load (Continuous) Power (COP):</b>
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. No sustained overload capability is available at this rating.

## Formulas for calculating full load currents:

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

**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](http://power.cummins.com)

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