

Generator set data sheet



Model:	DSGAC
Frequency:	60 Hz
Fuel type:	Diesel
kW rating:	150 Standby 135 Prime
Emissions level:	EPA NSPS Stationary Emergency Tier 3

Exhaust emission data sheet:	EDS-1085
Exhaust emission compliance sheet:	EPA-1119
Sound performance data sheet:	MSP-1057
Cooling performance data sheet:	MCP-172
Prototype test summary data sheet:	PTS-285
Standard set-mounted radiator cooling outline:	A035C611
Optional set-mounted radiator cooling outline:	
Optional heat exchanger cooling outline:	
Optional remote radiator cooling outline:	

Fuel consumption	Standby				Prime				Continuous
	kW (kVA)				kW (kVA)				kW (kVA)
Ratings	150 (188)				135 (169)				
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	
US gph	4.08	6.94	9.49	11.73	3.88	6.32	8.77	10.81	
L/hr	15.4	26.3	35.9	44.4	17.7	23.9	33.2	40.9	

Engine	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QSB7-G5 NR3		
Configuration	Cast iron, in-line, 6 cylinder		
Aspiration	Turbocharged and air-to-air after-cooled		
Gross engine power output, kW _m (bhp)	242 (324)	208 (279)	
BMEP at set rated load, kPa (psi)	1727 (251)	1558 (226)	
Bore, mm (in.)	107 (4.21)		
Stroke, mm (in.)	124 (4.88)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	7.4 (1464)		
Compression ratio	17.2:1		
Lube oil capacity, L (qt)	17.5 (18.5)		
Overspeed limit, rpm	2100		
Regenerative power, kW	19		

Fuel flow

Maximum fuel flow, L/hr (US gph)	106 (28)	
Maximum fuel flow with C174, L/hr (US gph)		
Maximum fuel inlet restriction with clean filter, mm Hg (in Hg)	127 (5)	
Maximum return restriction, mm Hg (in Hg)	152 (6)	

Air

	Standby rating	Prime rating	Continuous rating
Combustion air, m ³ /min (scfm)	14.6 (517)	14.2 (501)	
Maximum air cleaner restriction, kPa (in H ₂ O)	3.7 (15)		
Alternator cooling air, m ³ /min (cfm)	41.3 (1460)		

Exhaust

Exhaust flow at set rated load, m ³ /min (cfm)	35.2 (1241)	33.4 (1179)	
Exhaust temperature, °C (°F)	464 (867)	451 (845)	
Maximum back pressure, kPa (in H ₂ O)	10 (40)	10 (40)	

Standard set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)		
Fan load, kW _m (HP)	9.7 (13.0)		
Coolant capacity (with radiator), L (US gal)	23 (6.1)	23 (6.1)	
Cooling system air flow, m ³ /min (scfm)	351 (12400)		
Total heat rejection, MJ/min (Btu/min)	8.11 (7681)	7.57 (7167)	
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)		

Optional set-mounted radiator cooling

Ambient design, °C (°F)			
Fan load, kW _m (HP)			
Coolant capacity (with radiator), L (US gal)			
Cooling system air flow, m ³ /min (scfm)			
Total heat rejection, MJ/min (Btu/min)			
Maximum cooling air flow static restriction, kPa (in H ₂ O)			

Optional heat exchanger cooling	Standby rating	Prime rating	Continuous rating
Set coolant capacity, L (US gal)			
Heat rejected, jacket water circuit, MJ/min (Btu/min)			
Heat rejected, aftercooler circuit, MJ/min (Btu/min)			
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)			
Maximum raw water pressure, jacket water circuit, kPa (psi)			
Maximum raw water pressure, after-cooler circuit, kPa (psi)			
Maximum raw water pressure, fuel circuit, kPa (psi)			
Maximum raw water flow, jacket water circuit, L/min (US gal/min)			
Maximum raw water flow, aftercooler circuit, L/min (US gal/min)			
Maximum raw water flow, fuel circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, jacket water circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, after-cooler circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, fuel circuit, L/min (US gal/min)			
Raw water delta P at min flow, jacket water circuit, kPa (psi)			
Raw water delta P at min flow, aftercooler circuit, kPa (psi)			
Raw water delta P at min flow, fuel circuit, kPa (psi)			
Maximum jacket water outlet temp, °C (°F)			
Maximum after-cooler inlet temp, °C (°F)			
Maximum after-cooler inlet temp at 25 °C (77 °F) ambient, °C (°F)			
Maximum fuel return line restriction, kPa (in Hg)			

Optional remote radiator cooling¹

Set coolant capacity, L (US gal)			
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)			
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)			
Heat rejected, jacket water circuit, MJ/min (Btu/min)			
Heat rejected, aftercooler circuit, MJ/min (Btu/min)			
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)			
Maximum friction head, jacket water circuit, kPa (psi)			
Maximum friction head, aftercooler circuit, kPa (psi)			
Maximum static head, jacket water circuit, m (ft)			
Maximum static head, aftercooler circuit, m (ft)			
Maximum jacket water outlet temp, °C (°F)			
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)			
Maximum aftercooler inlet temp, °C (°F)			
Maximum fuel flow, L/hr (US gph)			
Maximum fuel return line restriction, kPa (in Hg)			

Weights²

Unit dry weight kgs (lbs)	
Unit wet weight kgs (lbs)	1263 (2784)

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.

Derating factors

Standby	Engine power available up to 3048 m (10000 ft) at ambient temperature up to 40° C (104° F) and 2164 m (7100 ft) at 50° C (122° F). Consult your Cummins distributor for temperature and ambient requirements outside these parameters.
Prime	Engine power available up to 2743 m (9000 ft) at ambient temperature up to 40° C (104° F) and 1463 m (4800 ft) at 50° C (122° F). Consult your Cummins distributor for temperature and ambient requirements outside these parameters.
Continuous	

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. No sustained overload capability is available at this rating.

Alternator data

Three phase table ¹	105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C	125 °C	125 °C	150 °C	150 °C	150 °C
Feature code	B418	B415	B268	B304	B417	B414	B267	B246	B303	B416	B413	B419	
Alternator data sheet number	210	210	212	209	210	210	212	209	209	210	209	208	
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	139/240 277/480	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	165	165	167	166	165	165	167	166	166	165	164	164	
Motor Starting kVA (at 90% sustained voltage)	Shunt	563	563	770	516	563	563	770	516	516	563	516	422
	PMG	663	663	920	607	663	663	920	607	607	663	607	497
Full load current - amps at Standby rating	<u>120/208</u> 521	<u>127/220</u> 493	<u>139/240</u> 452	220/380 285	240/416 261	254/440 246	277/480 226	347/600 181					

Alternator data (continued)

Single phase table	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	150 °C	
Feature code	B418	B415	B268	B417	B414	B267	B413	
Alternator data sheet number	210	210	121	210	210	212	209	
Voltage ranges	120/240 ²	120/240 ²	120/240 ³	120/240 ²	120/240 ²	120/240 ³	120/240 ²	
Surge kW	152	152	164	152	152	164	152	
Motor Starting kVA (at 90% sustained voltage)	Shunt	330	330	420	330	330	420	305
	PMG	385	385	500	385	385	500	360
Full load current - amps at Standby rating	$\frac{120/240^2}{417}$	$\frac{120/240^2}{625}$						

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.

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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