Model: DSFAE
Frequency: 60
Fuel type: Diesel
KW rating: 80 standby
72 prime
Emissions level: EPA NSPS Stationary Emergency Tier 3

† Generator set data sheet

Our energy working for you.™

Power Generation

Exhaust emission data sheet:	EDS-1076
Exhaust emission compliance sheet:	EPA-1110
Sound performance data sheet:	MSP-1051
Cooling performance data sheet:	MCP-166
Prototype test summary data sheet:	PTS-275
Standard set-mounted radiator cooling outline:	0500-4552
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	80 (100)				72 (90)				
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	Full
US gph	2.1	3.8	5.5	6.9	2.0	3.4	5.2	6.3	
L/hr	8.0	14.2	21.0	26.1	7.5	13.0	19.5	24.0	

Engine

	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QSB5-G3 NR3		
Configuration	Cast iron, in-line, 4 cylinder		
Aspiration	Turbocharged and air-to-air aftercooled		
Gross engine power output, kWm (bhp)	108 (145)	94 (126)	
BMEP at set rated load, kPa (psi)	1437 (208)	1308 (190)	
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	17.3:1		
Lube oil capacity, L (qt)	12.1 (12.8)		
Overspeed limit, rpm	2100 ± 50		
Regenerative power, kW	13		

Fuel flow

Maximum fuel flow with C180, L/hr (US gph)	132 (35)	
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)	9.1 (320)	8.6 (305)	
Maximum air cleaner restriction, kPa (in. H_2O)	3.7 (15)		
Alternator cooling air, m^3/min (cfm)	37.0 (1308)		

Exhaust			
Exhaust flow at set rated load, m^3/min (cfm)	20.8 (736)	19.8 (702)	
Exhaust temperature, °C (°F)	451 (844)	430 (806)	
Maximum back pressure, kPa (in. H_2O)	10 (40)		

Standard set-mounted radiator cooling			
Ambient design, °C (°F)	54 (129)		
Fan load, kW_m (HP)	9.3 (12.5)		
Coolant capacity (with radiator), L (US Gal.)	17 (4.5)		
Cooling system air flow, m^3/min (scfm)	189 (6675)		
Total heat rejection, MJ/min (Btu/min)	3.74 (3550)	3.45 (3271)	
Maximum cooling air flow static restriction, kPa (in. H_2O)	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_2O)			

Optional heat exchanger cooling			
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, aftercooler 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, aftercooler 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 aftercooler inlet temp, °C (°F)			
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)			

Our energy working for you.™

www.cumminspower.com

D-3370c (11/11)

Cummins Power Generation

Optional remote radiator cooling[1]

	Standby rating	Prime rating	Continuous rating
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)			

Weights[2]

Unit dry weight kgs (lbs.)	1200 (2650)
Unit wet weight kgs (lbs.)	1220 (2690)

Notes:

[1] For non-standard remote installations contact your local Cummins Power Generation 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 2500 m (8200 ft) at ambient temperatures up to 55 °C (131 °F). Consult your Cummins Power Generation distributor for temperature and ambient requirements outside these parameters.
Prime	Engine power available up to 2380 m (7800 ft) at ambient temperatures up to 55 °C (131 °F). Consult your Cummins Power Generation distributor for temperature and ambient requirements outside these parameters.
Continuous	

Ratings definitions

Standby:	Prime (unlimited running time):	Base load (continuous):
Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating (equivalent to fuel stop power in accordance with ISO3046, AS2789, DIN6271 and BS5514). Nominally rated.	Applicable for supplying power in lieu of commercially purchased power. Prime power is the maximum power available at a variable load for an unlimited number of hours. A 10% overload capability is available for limited time (equivalent to prime power in accordance with ISO8528 and overload power in accordance with ISO3046, AS2789, DIN6271 and BS5514). This rating is not applicable to all generator set models.	Applicable for supplying power continuously to a constant load up to the full output rating for unlimited hours. No sustained overload capability is available for this rating. Consult authorized distributor for rating (equivalent to continuous power in accordance with ISO8528, ISO3046, AS2789, DIN6271 and BS5514). This rating is not applicable to all generator set models.

Our energy working for you.™

www.cumminspower.com

D-3370c (11/11)

Cummins Power Generation

Alternator data

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		206	207	208	206	205	206	208	205	205	205	205
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		82	82	83	82	81	81	83	82	81	81	82
Motor starting kVA (at 90% sustained voltage)	Shunt	313	360	422	313	260	313	422	260	260	260	260
	PMG	368	423	497	368	306	368	497	306	306	306	306
Full load current - Amps at standby rating		120/208 278	127/220 262	139/240 241	240/416 139	254/440 131	277/480 120	347/600 96				

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	207	208	205	206	206	208			
Voltage ranges		120/240[2]	120/240[2]	120/240[3]	120/240[3]	120/240[2]	120/240[3]	120/240[3]	120/240[3]			
Surge kW		80	81	81	81	79	80	80	81			
Motor starting kVA (at 90% sustained voltage)	Shunt	185	215	215	250	155	185	185	250			
	PMG	220	250	250	290	183	220	220	290			
Full load current - Amps at standby rating		120/240[2] 222	120/240[3] 333									

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

$$\frac{kW \times 1000}{Voltage \times 1.73 \times 0.8}$$

Single phase output

$$\frac{kW \times SinglePhaseFactor \times 1000}{Voltage}$$

Cummins Power Generation
1400 73rd Avenue N.E.
Minneapolis, MN 55432 USA
Phone: 763 574 5000
USA toll-free: 877 769 7669
Fax: 763 574 5298

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.

Our energy working for you.™

www.cumminspower.com

D-3370c (11/11)