Model: DGCA
Frequency: 60
Fuel type: Diesel
KW rating: 50 standby
45 prime
Emissions level: EPA Nonroad Tier 1

Generator set data sheet

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Exhaust emission data sheet:	**EDS- 102**
EPA Tier 1 exhaust emission compliance sheet:	
Sound performance data sheet:	**MSP- 106**
Cooling performance data sheet:	
Prototype test summary data sheet:	**PTS- 104**
Standard set-mounted radiator cooling outline:	**0500-3303**
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	50 (63)				45 (56)				
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**	**Full**
US gph	1.8	2.4	3.3	4.2	1.7	2.3	3.1	3.8	
L/hr	7	9	12	16	6	9	12	14	

Engine

	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	4TB3.9-G4		
Configuration	Cast iron, in-line 4 cylinder		
Aspiration	Turbocharged		
Gross engine power output, kWm (bhp)	73.9 (99.0)	67.1 (90.0)	
BMEP at rated load, kPa (psi)	992.8 (144.0)	889.1 (130.4)	
Bore, mm (in)	102.1 (4.02)		
Stroke, mm (in)	119.9 (4.72)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	7.2 (1416.0)		
Compression ratio	16.5:1		
Lube oil capacity, L (qt)	10.9 (11.5)		
Overspeed limit, rpm	2100 ± 50		
Regenerative power, kW	11.90		

Fuel flow

Fuel flow at rated load, L/hr (US gph)	46.2 (12.2)	44.7 (11.8)	
Maximum inlet restriction, mm Hg (in Hg)	101.6 (4.0)		
Maximum return restriction, mm Hg (in Hg)	254.0 (10.0)		

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Air

	Standby rating	Prime rating	Continuous rating
Combustion air, m^3/min (scfm)	5.4 (191.0)	5.3 (188.0)	
Maximum air cleaner restriction w/clean filter, kPa (in H_2O)	2.5 (10.0)		
Alternator cooling air, m^3/min (scfm)	18.0 (635.0)		

Exhaust

Exhaust flow at rated load, m^3/min (cfm)	12.7 (450.0)	12.1 (427.0)	
Exhaust temperature, °C (°F)	468.9 (876.0)	443.9 (831.0)	
Maximum back pressure, kPa (in H_2O)	10.2 (41.0)		

Standard set-mounted radiator cooling

Ambient design, °C (°F)	40 (104)		
Fan load, kW (HP)	3.4 (4.6)		
Coolant capacity (with radiator), L (US gal)	16.9 (4.5)		
Cooling system air flow, m^3/min (scfm)	139 (4900)		
Total heat rejection, MJ/min (Btu/min)	3.2 (3036)	2.9 (2727)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)		

Optional set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)		
Fan load, kW_m (HP)	3.4 (4.6)		
Coolant capacity (with radiator), L (US gal)	16.9 (4.5)		
Cooling system air flow, m^3/min (scfm)	139 (4900)		
Total heat rejection, MJ/min (Btu/min)	3.2 (3036)	2.9 (2727)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)		

Optional heat exchanger cooling

Set coolant capacity, L (US gal)			
Heat rejected, jacket water circuit, MJ/min (Btu/min)			
Heat rejected, after-cooler 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 @ 27 °C (80 °F) Inlet temp, jacket water circuit, L/min (US gal/min)			
Minimum raw water flow @ 27 °C (80 °F) Inlet remp, after-cooler circuit, L/min (US gal/min)			
Minimum raw water flow @ 27 °C (80 °F) Inlet temp, fuel circuit, L/min (US gal/min)			
Raw water delta P @ min flow, jacket water circuit, kPa (psi)			
Raw water delta P @ min flow, after-cooler circuit, kPa (psi)			
Raw water delta P @ 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 @ 25 °C (77 °F) ambient, °C (°F)			

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Optional remote radiator cooling[1]

Set coolant capacity, L (US gal)	7.2 (1.9)		
Max flow rate @ max friction head, jacket water circuit, L/min (US gal/min)	133 (35)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	2.2 (2065)	2.0 (1870)	
Total heat radiated to room, MJ/min (Btu/min)	1.0 (971)	0.9 (857)	
Maximum friction head, jacket water circuit, kPa (psi)	35 (5)		
Maximum static head, jacket water circuit, m (ft)	14 (46)		
Maximum jacket water outlet temp, °C (°F)	104 (220)	100 (212)	

Weights[2]

Unit dry weight kgs (lbs)	
Unit wet weight kgs (lbs)	780 (1720)

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 1880 m (6180 ft) at ambient temperatures up to 40 °C (104 °F). Above 1880 m (6180 ft), derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104°F).
Prime	Engine power available up to 1880 m (6180 ft) at ambient temperatures up to 40 °C (104 °F). Above 1880 m (6180 ft), derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104°F).
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.

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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		203	203	204	203	202	203	204	202	202	202	202
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		65	65	66	66	64	65	66	65	64	64	65
Motor starting kVA (at 90% sustained voltage)	Shunt	188	188	231	188	163	188	231	163	163	163	163
	PMG	221	221	272	221	191	221	272	191	191	191	191

Full load current amps at standby rating	120/208	127/220	139/240	220/380	240/416	277/480	347/600
	173	164	150	95	87	75	60

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		203	203	204	204	202	203	203	204
Voltage ranges		120/240[2]	120/240[2]	120/240[3]	120/240[3]	120/240[2]	120/240[2]	120/240[3]	120/240[3]
Surge kW		61	63	65	64	60	62	64	64
Motor starting kVA (at 90% sustained voltage)	Shunt	113	113	130	130	95	113	113	130
	PMG	133	133	153	153	112	133	133	153

Full load current amps at standby rating	120/240[2]	120/240[3]
	139	208

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

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

Single phase output

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

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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.

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