

Generator set data sheet



Model: DQGAE
Frequency: 60 Hz
Fuel type: Diesel
kW rating: 1135 Data Center Continuous
Emissions level: EPA NSPS Stationary Emergency Tier 2

Exhaust emission data sheet:	EDS-1110
Exhaust emission compliance sheet:	EPA-1156
Sound performance data sheet:	MSP-1097
Cooling performance data sheet:	MCP-198
Prototype test summary data sheet:	PTS-301
Standard set-mounted radiator cooling outline:	A029J185
Optional set-mounted radiator cooling outline:	A029P243
Optional heat exchanger cooling outline:	A034H896
Optional remote radiator cooling outline:	A029P245

Fuel consumption	kW (kVA)			
	1/4	1/2	3/4	Full
Ratings	1135 (1419)			
US gph	30.1	48.6	66.5	83.7
L/hr	114	184	251.6	316.8

Engine

Engine manufacturer	Cummins Inc.
Engine model	QSK50-G5 NR2
Configuration	Cast iron, V 16 cylinder
Aspiration	Turbocharged and low temperature after-cooled
Gross engine power output, kWm (bhp)	1470 (1971)
BMEP at set rated load, kPa (psi)	1685 (244)
Bore, mm (in.)	159 (6.25)
Stroke, mm (in.)	159 (6.25)
Rated speed, rpm	1800
Piston speed, m/s (ft/min)	9.5 (1875)
Compression ratio	15:1
Lube oil capacity, L (qt)	235 (248)
Overspeed limit, rpm	2100 ±50
Regenerative power, kW	168

Fuel flow

Maximum fuel flow, L/hr (US gph)	912
Maximum fuel inlet restriction, kPa (in Hg)	16.9 (5)
Maximum fuel inlet temperature, °C (°F)	71 (160)

Air

Combustion air, m ³ /min (scfm)	124 (4365)
Maximum air cleaner restriction, kPa (in H ₂ O)	3.7 (15)
Alternator cooling air, m ³ /min (cfm)	207 (7300)

Exhaust

Exhaust flow at set rated load, m ³ /min (cfm)	296 (10438)
Exhaust temperature, °C (°F)	462 (863)
Maximum back pressure, kPa (in H ₂ O)	6.78 (27)

Standard set-mounted radiator cooling

Ambient design, °C (°F)	44.5 (112)
Fan load, kW _m (HP)	53.7 (72)
Coolant capacity (with radiator), L (US gal)	401 (106)
Cooling system air flow, m ³ /min (scfm)	1783 (62983)
Total heat rejection, MJ/min (Btu/min)	60267 (63.6)
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)

Optional set-mounted radiator cooling

Ambient design, °C (°F)	52.6 (127)
Fan load, kW _m (HP)	45.5 (61)
Coolant capacity (with radiator), L (US gal)	496 (131)
Cooling system air flow, m ³ /min (scfm)	2094 (73937)
Total heat rejection, MJ/min (Btu/min)	63.6 (60267)
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)

Optional remote radiator cooling¹

Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)	1893 (500)
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)	538 (142)
Heat rejected, jacket water circuit, MJ/min (Btu/min)	32.94 (31225)
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	19.95 (18905)
Total heat radiated to room, MJ/min (Btu/min)	10.3 (9777.8)
Maximum friction head, jacket water circuit, kPa (psi)	69 (10)
Maximum friction head, aftercooler circuit, kPa (psi)	48 (7)
Maximum static head, jacket water circuit, m (ft)	18.3 (60)
Maximum static head, aftercooler circuit, m (ft)	18.3 (60)
Maximum jacket water outlet temp, °C (°F)	100 (212)
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)	49 (120)
Maximum aftercooler inlet temp, °C (°F)	66 (150)

Weights²

Unit dry weight kgs (lbs)	11293 (24897)
Unit wet weight kgs (lbs)	11926 (26292)

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

Standard cooling system: Full rated power available up to 2646 m (8679 ft) elevation at ambient temperatures up to 40 °C (104 °F). Above these conditions derate by 3.6% per 305 m (1000 ft), and derate by an additional 8.0% per 10 °C (18 °F).
Enhanced cooling system: Full rated power available up to 2558.4 m (8391.4 ft) elevation at ambient temperatures up to 40 °C (104 °F). Above these conditions derate by 4.6% per 305 m (1000 ft). Full rated power available up to 2342.1 m (7682.1 ft) elevation at ambient temperatures up to 50 °C (122 °F). Above these conditions derate by 3.6% per 305 m (1000 ft). At higher ambient temperatures, derate by additional 8% per 10 °C (18 °F).

Ratings definitions

Data Center Continuous (DCC): Applicable for supplying power continuously to a constant or varying electrical load for unlimited hours in a data center application.

Alternator data

Voltage	Connection	Temp rise degrees C	Duty ¹	Max surge kVA ²	Winding No.	Alternator data sheet	Feature code
380	Wye, 3-phase	150/125	S/P	5521	312	ADS-331	B799-2
380	Wye, 3-phase	125/80	S/P/C	5743	312	ADS-332	B598-2
380	Wye, 3-phase	105/80	S/P	6716	312	ADS-333	B599-2
416	Wye, 3-phase	105/80	S/P	5521	312	ADS-331	B715-2
440	Wye, 3-phase	150/125	S/P	4602	312	ADS-330	B691-2
440	Wye, 3-phase	125/80	S/P/C	4602	312	ADS-330	B663-2
440	Wye, 3-phase	105/80	S/P	5521	312	ADS-331	B664-2
440	Wye, 3-phase	150/125	S/P	7267	12	ADS-515	B691-2
480	Wye, 3-phase	125/105	S/P	4602	312	ADS-330	B276-2
480	Wye, 3-phase	105/80	S/P	4602	312	ADS-330	B600-2
480	Wye, 3-phase	80	S/P	5743	312	ADS-332	B903-2
600	Wye, 3-phase	125/105/80	S/P/C	4602	07	ADS-330	B602-2
600	Wye, 3-phase	105/80	S/P	4602	07	ADS-330	B603-2
600	Wye, 3-phase	80	S/P	5743	07	ADS-332	B904-2
4160	Wye, 3-phase	105	S/P	6204	51	ADS-322	B920-2
4160	Wye, 3-phase	80	S/P	7005	51	ADS-323	B919-2
12470	Wye, 3-phase	80	S	5948	91	ADS-521	B607-2
12470	Wye, 3-phase	80	P	5948	91	ADS-521	B812-2
13200	Wye, 3-phase	80	S	5948	91	ADS-521	B807-2
13200	Wye, 3-phase	80	P	5948	91	ADS-521	B566-2
13800	Wye, 3-phase	80	S	5948	91	ADS-521	B610-2
13800	Wye, 3-phase	80	P	5948	91	ADS-521	B809-2

Notes:

¹ Standby (S), Prime (P) and Continuous ratings (C).

² Maximum rated starting kVA that results in a minimum of 90% of rated sustained voltage during starting.

Formulas for calculating full load currents:

Three phase output

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

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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