

Generator set data sheet

Model: DQGAA
 Frequency: 60 Hz
 Fuel type: Diesel
 KW rating: 1250 standby
 1100 prime
 Emissions: EPA NSPS Stationary Emergency Tier 2

Exhaust emission data sheet:	EDS-1058
Exhaust emission compliance sheet:	EPA-1092
Sound performance data sheet:	MSP-1033
Cooling performance data sheet:	MCP-151
Prototype test summary data sheet:	PTS-265
Standard set-mounted radiator cooling outline:	0500-4357
Optional remote radiator cooling outline:	0500-4309

Fuel consumption	Standby				Prime			
	kW (kVA)				kW (kVA)			
Ratings	1250 (1563)				1100 (1375)			
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
US gph	31.6	50.6	69.6	88.6	29.8	47.1	64.4	81.6
L/hr	119.5	191.5	263.5	335.4	112.9	178.3	243.6	308.9

Engine	Standby rating	Prime rating
Engine manufacturer	Cummins Inc.	
Engine model	QSK50-G4 NR2	
Configuration	Cast iron, V 16 cylinder	
Aspiration	Turbocharged and low temperature aftercooled	
Gross engine power output, kWm (bhp)	1656 (2220)	1470 (1971)
BMEP at set rated load, kPa (psi)	1827 (265)	1606 (233)
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 (241)
Maximum fuel inlet restriction, kPa (in Hg)	16.9 (5)
Maximum fuel inlet temperature, °C (°F)	71 (160)

Air	Standby rating	Prime rating
Combustion air, m ³ /min (scfm)	130 (4570)	124 (4375)
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)	291 (10290)	261 (9225)
Exhaust temperature, °C (°F)	417 (782)	372 (702)
Maximum back pressure, kPa (in H ₂ O)	6.78 (27)	

Standard set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)	
Fan load, kW _m (HP)	45 (60)	
Coolant capacity (with radiator), L (US gal)	541 (143)	
Cooling system air flow, m ³ /min (scfm)	1705 (60150)	
Total heat rejection, MJ/min (Btu/min)	59.88 (56796)	52.43 (49727)
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)	
Maximum fuel return line restriction kPa (in Hg)	34 (10)	

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)	1893 (500)	
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)	537 (142)	
Heat rejected, jacket water circuit, MJ/min (Btu/min)	29.89 (28352)	26.57 (25197)
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	21.98 (20845)	19 (18025)
Heat rejected, fuel circuit, MJ/min (Btu/min)		
Total heat radiated to room, MJ/min (Btu/min)	11.3 (10747)	10.1 (9571)
Maximum friction head, jacket water circuit, kPa (psi)	67 (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)	104 (220)	100 (212)
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)	49 (120)	
Maximum aftercooler inlet temp, °C (°F)	71 (160)	66 (150)
Maximum fuel flow, L/hr (US gph)	469 (124)	
Maximum fuel return line restriction, kPa (in Hg)	34 (10)	

Weights²

Unit dry weight kgs (lbs)	12700 (28000)
Unit wet weight kgs (lbs)	13270 (29260)

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	Full rated power available up to 1901.3m (6236.3 ft) elevation at ambient temperatures up to 40 °C (104 °F). Full rated power available up to 1421.2m (4661.5 ft) elevation at ambient temperatures up to 50 °C (120 °F). Above these conditions derate by 6.6% per 305m (1000 ft) and derate by an additional 10.3% per 10 °C (18 °F).
Prime	Full rated power available up to 2053.5m (6735.5 ft) elevation at ambient temperatures up to 40 °C (104 °F). Full rated power available up to 1260.2m (4133.3 ft) elevation at ambient temperatures up to 50 °C (120 °F). Above these conditions derate by 5.8% per 305m (1000 ft) and derate by an additional 14.0% per 10 °C (18 °F).

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.

Alternator data

Voltage	Connection ¹	Temp rise degrees C	Duty ²	Single phase factor ³	Max surge kVA ⁴	Winding No.	Alternator data sheet	Feature Code
380	Wye, 3-phase	150/105	S/P/C		6716		ADS-331	B595-2
380	Wye, 3-phase	125/105/80	S/P/C		5743		ADS-332	B598-2
380	Wye, 3-phase	105/80	P/C		5521		ADS-331	B659-2
380	Wye, 3-phase	80	P		6716		ADS-332	B687-2
380	Wye, 3-phase	80	S		7695		ADS-333	B660-2
440	Wye, 3-phase	80	P		5521		ADS-330	B689-2
440	Wye, 3-phase	125/105	S/P		5743		ADS-330	B663-2
440	Wye, 3-phase	80	S		6716		ADS-331	B688-2
480	Wye, 3-phase	125/105	S/P		5521		ADS-330	B276-2
480	Wye, 3-phase	105/80	S/P		5743		ADS-330	B600-2
480	Wye, 3-phase	80	S		6716		ADS-331	B601-2
600	Wye, 3-phase	125/105	S/P		5521		ADS-330	B602-2
600	Wye, 3-phase	105/80	S/P		5743		ADS-330	B603-2
600	Wye, 3-phase	80	S		6716		ADS-331	B604-2
4160	Wye, 3-phase	105	P		6204		ADS-322	B312-2
4160	Wye, 3-phase	105/80	S/P		6204		ADS-322	B313-2
4160	Wye, 3-phase	80			7005		ADS-323	B314-2

Notes:

¹ Limited single phase capability is available from some three phase rated configurations. To obtain single phase rating, multiply the three phase kW rating by the Single Phase Factor³. All single phase ratings are at unity power factor.

² Standby (S), Prime (P) and Continuous ratings (C).

³ Factor for the *Single Phase Output from Three Phase Alternator* formula listed below.

⁴ 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

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

Single phase output

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

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.

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