

Generator set data sheet



Model: DQKAJ
Frequency: 50 Hz
Fuel type: Diesel
kVA rating: 2500 Standby
 2000 Prime
Emissions level: EPA NSPS Stationary Emergency Tier 2
 2g TA Luft

Exhaust emission data sheet:	EDS-1147
Exhaust emission compliance sheet:	EPA-1205
Sound performance data sheet:	MSP-1137
Cooling performance data sheet:	MCP-233
Prototype test summary data sheet:	PTS-309
Standard set-mounted radiator cooling outline:	A034H896
Optional set-mounted radiator cooling outline:	A034T734
Optional heat exchanger cooling outline:	A042V096
Optional remote radiator cooling outline:	A034U921

Fuel consumption	Standby				Prime			
	kVA (kW)				kVA (kW)			
Ratings	2500 (2000)				2000 (1600)			
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
US gph	37	68	99	138	31	55	80	105
L/hr	140	256	375	523	117	210	302	399

Engine	Standby rating	Prime rating
Engine manufacturer	Cummins Inc.	
Engine model	QSK60-G18 NR2	
Configuration	Cast iron, V 16 cylinder	
Aspiration	Turbocharged and low temperature after-cooled	
Gross engine power output, kW _m (bhp)	2164 (2901)	1727 (2315)
BMEP at set rated load, kPa (psi)	2868 (416)	2289 (332)
Bore, mm (in.)	159 (6.25)	
Stroke, mm (in.)	190 (7.48)	
Rated speed, rpm	1500	
Piston speed, m/s (ft/min)	9.5 (1869)	
Compression ratio	14.5:1	
Lube oil capacity, L (qt)	261 (276)	378 (399)
Overspeed limit, rpm	1725	
Regenerative power, kW	277	

Fuel flow

Maximum fuel flow, L/hr (US gph)	939 (248)
Maximum fuel inlet restriction, kPa (in Hg)	30 (9.0)
Maximum fuel inlet temperature, °C (°F)	71 (160)

Air

	Standby rating	Prime rating
Combustion air, m ³ /min (scfm)	154 (5450)	130 (4578)
Maximum air cleaner restriction, kPa (in H ₂ O)	6.2 (25)	
Alternator cooling air, m ³ /min (cfm)	192 (6780)	

Exhaust

Exhaust flow at set rated load, m ³ /min (cfm)	378 (13330)	360 (12715)
Exhaust temperature, °C (°F)	507 (944)	450 (841)
Maximum back pressure, kPa (in H ₂ O)	6.7 (27)	

Standard set-mounted radiator cooling

Ambient design, °C (°F)	40 (104)	
Fan load, kW _m (HP)	40 (53)	
Coolant capacity (with radiator), L (US gal)	537 (142)	
Cooling system air flow, m ³ /min (scfm)	2094 (73937)	
Total heat rejection, MJ/min (Btu/min)	97 (92368)	73 (69465)
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)	
Maximum fuel return line restriction kPa (in Hg)		

Optional set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)	
Fan load, kW _m (HP)	64 (86)	
Coolant capacity (with radiator), L (US gal)	606 (160)	
Cooling system air flow, m ³ /min (scfm)	2347 (82891)	
Total heat rejection, MJ/min (Btu/min)	97 (92368)	73 (69465)
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)	
Maximum fuel return line restriction kPa (in Hg)		

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)	

Optional heat exchanger cooling (continued)

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)	
Maximum fuel return line restriction, kPa (in Hg)	

Optional remote radiator cooling¹

	Standby rating	Prime rating
Set coolant capacity, L (US gal)		
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)	1590 (420)	
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)	503 (133)	
Heat rejected, jacket water circuit, MJ/min (Btu/min)	50 (46957)	40 (37512)
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	35 (33332)	24 (22739)
Heat rejected, fuel circuit, MJ/min (Btu/min)		
Total heat radiated to room, MJ/min (Btu/min)	13 (11969)	10 (9132)
Maximum friction head, jacket water circuit, kPa (psi)	48 (7)	
Maximum friction head, aftercooler circuit, kPa (psi)	35 (5)	
Maximum static head, jacket water circuit, m (ft)	18 (60)	
Maximum static head, aftercooler circuit, m (ft)	18 (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)		
Maximum fuel return line restriction, kPa (in Hg)		

Weights²

Unit dry weight kgs (lbs)	17837 (39323)
Unit wet weight kgs (lbs)	18537 (40867)

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	<p><u>Standard cooling system:</u> Full rated power available up to 1497m (4917 ft) at 40 °C. Above these conditions, derates by 10% per 1000m (3281 ft) and 13.5% per 10 °C.</p> <p><u>Enhanced cooling system:</u> Full rated power available up to 149m (489 ft) at 50 °C. Above these conditions, derates by 10% per 1000m (3281 ft).</p>
Prime	<p><u>Standard cooling system:</u> Full rated power available up to 1325m (4346 ft) at 40 °C. Above these conditions, derates by 12% per 1000m (3281 ft) and 12.5% per 10 °C.</p> <p><u>Enhanced cooling system:</u> Derates by 10% at sea level at 50 °C. Above these conditions, derates by 11% per 1000m (3281 ft).</p>
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

Voltage	Connection¹	Temp rise degrees C	Duty²	Single phase factor³	Max surge kVA⁴	Winding No.	Alternator data sheet	Feature code
380-440	Wye, 3-phase	125	P		5000	312	ADS-334	BA07-2
400-440	Wye, 3-phase	105	P		5280	312	ADS-335	BA03-2
380	Wye, 3-phase	163/105	S/P		5971	312	ADS-515	BA23-2
380&440	Wye, 3-phase	125/80	S/P		6758	312	ADS-516	BA15-2
400-415	Wye, 3-phase	105/80	S/P		6758	312	ADS-516	BA08-2
380&440	Wye, 3-phase	105/80	S/P		7354	312	ADS-517	BA08-2
400-415	Wye, 3-phase	80	P		7354	312	ADS-517	BA05-2
400-415	Wye, 3-phase	150/105	S/P		5971	312	ADS-515	BA18-2
3300	Wye, 3-phase	125/80	S/P		5477	51	ADS-518	BA33-2
3300	Wye, 3-phase	105/80	S/P		6316	51	ADS-519	BA31-2
3300	Wye, 3-phase	80/80	S/P		7040	51	ADS-520	BA34-2
6300-6600	Wye, 3-phase	105	P		5250	61	ADS-521	BA37-2
6300	Wye, 3-phase	125/80	S/P		6076	61	ADS-522	BA44-2
6600	Wye, 3-phase	105/80	S/P		6076	61	ADS-522	BA39-2
11000	Wye, 3-phase	105/80	S/P		5896	51	ADS-522	BA40-2
11000	Wye, 3-phase	80	P		5196	51	ADS-521	BA36-2
11000	Wye, 3-phase	80/80	S/P		6784	51	ADS-523	BA45-2

Notes:

- 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.
- Standby (S), Prime (P) and Continuous ratings (C).
- Factor for the *Single phase output from Three phase alternator* formula listed below.
- 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.