

Generator Set Data Sheet



Model:	DQKAG
Frequency:	50 Hz
Fuel Type:	Diesel
kVA Rating:	2250 Standby
	2000 Prime
	1600 Continuous
Emissions Level:	EPA NSPS Stationary Emergency Tier 2
	2g TA Luft

Exhaust emission data sheet:	EDS-1146
Exhaust emission compliance sheet:	EPA-1204
Sound performance data sheet:	MSP-1136
Cooling performance data sheet:	MCP-232
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				Continuous
	kVA (kW)				kVA (kW)				kVA (kW)
Ratings	2250 (1800)				2000 (1600)				1600 (1280)
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	Full
US gph	42	67	97	124	33	60	86	116	93
L/hr	159	252	369	471	126	227	327	438	351

Engine	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QSK60-G11 NR2		
Configuration	Cast iron, V 16 cylinder		
Aspiration	Turbocharged and low temperature after-cooled		
Gross engine power output, kWm (bhp)	1955 (2620)	1730 (2319)	1395 (1890)
BMEP at set rated load, kPa (psi)	2590 (376)	2293 (332)	1850 (268)
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)	379 (400)	
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	Continuous rating
Combustion air, m ³ /min (scfm)	146 (5173)	144 (5084)	
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)	359 (12677)	350 (12343)	340 (12000)
Exhaust temperature, °C (°F)	486 (906)	478 (892)	446 (835)
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)	2082 (73537)		
Total heat rejection, MJ/min (Btu/min)	97 (92368)	73 (69464)	
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)	87 (82610)	83 (78931)	68 (64496)
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, 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, after-cooler 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, after-cooler 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, after-cooler 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, after-cooler circuit, kPa (psi)	
Raw water delta P at 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 at 25 °C (77 °F) ambient, °C (°F)	
Maximum fuel return line restriction, kPa (in Hg)	

Optional Remote Radiator Cooling¹

	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)	1614 (427)		
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)	462 (122)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	44 (42089)	43 (40340)	37 (35327)
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	31 (29647)	30 (28492)	22 (21072)
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)	11 (10786)	10 (10018)	8 (8028)
Maximum friction head, jacket water circuit, kPa (psi)	48 (7)		
Maximum friction head, aftercooler circuit, kPa (psi)	34 (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)	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)	66 (150)
Maximum fuel flow, L/hr (US gph)			
Maximum fuel return line restriction, kPa (in Hg)			

Weights²

Unit dry weight kgs (lbs)	16826 (37095)
Unit wet weight kgs (lbs)	17526 (38638)

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 300m (984 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> Derates by 10.5% at sea level 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 500m (1640 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	<p><u>Standard Cooling System:</u> Full rated power available up to 300m (984 ft) at 40 °C. Above these conditions, derates by 15% per 1000m (3281 ft) and 17.5% per 10 °C.)</p> <p><u>Enhanced Cooling System:</u> Derates by 12.5% at sea level at 50 °C. Above these conditions, derates by 15% per 1000 m (3281 ft).</p>

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	Connection ¹	Temp rise degrees C	Duty ²	Single phase factor ³	Max surge kVA ⁴	Winding No.	Alternator data sheet	Feature code
400-440	Wye, 3-phase	80	C		4563	312	ADS-333	BA04-2
380-440	Wye, 3-phase	125/80	P/C		5000	312	ADS-334	BA14-2
380	Wye, 3-phase	163/125/80	S/P/C		5280	312	ADS-335	BA24-2
400-440	Wye, 3-phase	150/105/80	S/P/C		5280	312	ADS-335	BA20-2
380-440	Wye, 3-phase	125/105/80	S/P/C		5971	312	ADS-515	BA11-2
380-440	Wye, 3-phase	105/80/80	S/P/C		6758	312	ADS-516	BA09-2
380-440	Wye, 3-phase	80/80/80	S/P/C		7354	312	ADS-517	BA27-2
380-440	Wye, 3-phase	125	C		3960	312	ADS-332	BA06-2
3300	Wye, 3-phase	105/80/80	S/P/C		5477	51	ADS-518	BA32-2
3300	Wye, 3-phase	80/80/80	S/P/C		6316	51	ADS-519	BA35-2
6300	Wye, 3-phase	125/105/80	S/P/C		5250	61	ADS-521	BA43-2
6600	Wye, 3-phase	105/105/80	S/P/C		5250	61	ADS-521	BA38-2
6300-6600	Wye, 3-phase	105/80/80	S/P/C		6076	61	ADS-522	BA41-2
11000	Wye, 3-phase	105/80/80	S/P/C		5196	83	ADS-521	BA40-2
11000	Wye, 3-phase	105/80/80	S/P/C		5896	83	ADS-522	BA42-2
11000	Wye, 3-phase	80/80/80	S/P/C		6784	83	ADS-523	BA46-2

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.