

Generator set data sheet

Model: DQKAF
Frequency: 60 Hz
Fuel type: Diesel
KW rating: 2250 standby
 1825 prime
 1650 continuous

Emissions level: EPA NSPS Stationary Emergency Tier 2

Exhaust emission data sheet:	EDS-1120
Exhaust emission compliance sheet:	EPA-1166
Sound performance data sheet:	
Cooling performance data sheet:	MCP-208
Prototype test summary data sheet:	
Standard set-mounted radiator cooling outline:	A034T734
Optional set-mounted radiator cooling outline:	A034H896
Optional heat exchanger cooling outline:	
Optional remote radiator cooling outline:	

Fuel consumption	Standby				Prime				Continuous			
	kW (kVA)				kW (kVA)				kW (kVA)			
Ratings	2250 (2812)				1825 (2281)				1650 (2063)			
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
US gph	49.2	92.6	120.4	157.9	41	76.6	95.1	128.1	39.0	73.0	102.0	123.1
L/hr	186	350	456	598	155	290	398	485	147.6	276.3	386.1	465.9

Engine	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QSK60-G14 NR2		
Configuration	Cast iron, V 16 cylinder		
Aspiration	Turbocharged and low temperature aftercooled		
Gross engine power output, kWm (bhp)	2446 (3280)	1980 (2655)	1885 (2528)
BMEP at set rated load, kPa (psi)	2710 (393)	2193 (318)	2089 (303)
Bore, mm (in)	159 (6.25)		
Stroke, mm (in)	190 (7.48)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	11.4 (2243)		
Compression ratio	14.5:1		
Lube oil capacity, L (qt)	261 (276)	378 (400)	378 (400)
Overspeed limit, rpm	2070		
Regenerative power, kW	277		

Fuel flow

Maximum fuel flow, L/hr (US gph)	946 (250)
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)	195 (6900)	167 (5910)	163 (5756)
Maximum air cleaner restriction, kPa (in H ₂ O)	6.2 (25)		
Alternator cooling air, m ³ /min (cfm)	222 (7840)		

Exhaust

Exhaust flow at rated load, m ³ /min (cfm)	473 (16700)	402 (14205)	391 (13812)
Exhaust temperature, °C (°F)	474 (885)	457 (855)	453 (847)
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)	46 (61)		
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)	121.3 (114968)	98.5 (93385)	87.7 (83589)
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)	66 (88)		
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)	121.3 (114968)	98.5 (93385)	87.7 (83589)
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)			
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	Continuous rating
Set coolant capacity, L (US gal)			
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)	1900 (502)		
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)	606 (160)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	56.6 (53645)	50.2 (47575)	46.8 (44564)
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	43.9 (41605)	31.5 (29820)	29.7 (28256)
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)	20.8 (19718)	16.9 (15990)	11.19 (10662)
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 (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)	16182 (35675)
Unit wet weight kgs (lbs)	16882 (37218)

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	Standard Cooling System: Full engine power available up to 250 m (820 ft) at ambient temperature up to 40°C (104 °F). Above these elevations, derate at 4% per 305 m (1000 ft) and 6.5% per 10°C (18 °F). Enhanced Cooling System: Full engine power available up to 365 m (1200 ft) at ambient temperature up to 40°C (104 °F). Above this elevation, derate 4 % per 305 m (1000 ft) for 40°C (104 °F). For temperature at 50°C (122 °F) derate 2.7% at 122 m (400 ft) and 3% per 305 m (1000 ft) up to 1220 m (4000 ft). For higher temperatures and altitude above 1220 m (4000 ft), derate an additional 2% per 305 m (1000 ft).
Prime	Standard Cooling System: Full engine power available up to 250 m (820 ft) at ambient temperature up to 40°C (104 °F). Above these elevations, derate at 4.2 % per 305 m (1000 ft) and 16.1% per 10°C (18 °F). Enhanced Cooling System: Full engine power available up to 250 m (820 ft) at ambient temperature up to 40°C (104 °F). Above these elevations, derate at 4.2 % per 305 m (1000 ft) and 16.1% per 10°C (18 °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.

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	150/125/105	S/P/C		7695	312	ADS-335	B595-2
380	Wye, 3-phase	125/105/80	S/P/C		7695	312	ADS-335	B598-2
380	Wye, 3-phase	105/80	S/P		7333	13	ADS-515	B599-2
380	Wye, 3-phase	80	S		7333	13	ADS-515	B660-2
416	Wye, 3-phase	105/80	S/P		7361	312	ADS-334	B715-2
440	Wye, 3-phase	150/125	S/P		6716	312	ADS-333	B691-2
440	Wye, 3-phase	125/105/80	S/P/C		6176	312	ADS-333	B663-2
440	Wye, 3-phase	105/80	S/P		7361	312	ADS-334	B664-2
440	Wye, 3-phase	80	S		7695	312	ADS-335	B688-2
480	Wye, 3-phase	150	S		6716	312	ADS-333	B816-2
480	Wye, 3-phase	125/105/80	S/P/C		6716	312	ADS-333	B801-2
480	Wye, 3-phase	105/80	S/P		7361	312	ADS-334	B600-2
480	Wye, 3-phase	80	S		7361	312	ADS-334	B601-2
480	Wye, 3-phase	80	S/P		7267	12	ADS-515	B903-2
600	Wye, 3-phase	150	S		6716	07	ADS-333	B817-2
600	Wye, 3-phase	125/105/80	S/P/C		6716	07	ADS-333	B602-2
600	Wye, 3-phase	105/80	S/P		7361	07	ADS-334	B603-2
600	Wye, 3-phase	80	S		7361	07	ADS-334	B604-2
600	Wye, 3-phase	80	S/P		7233	07	ADS-515	B904-2
4160	Wye, 3-phase	80	S/P		7295	51	ADS-519	B905-2
4160	Wye, 3-phase	125/105/80	S/P/C		6335	51	ADS-518	B467-2
4160	Wye, 3-phase	105/80	S/P		6335	51	ADS-518	B313-2
12470	Wye, 3-phase	125/105/80	S/P/C		5948	87	ADS-521	B448-2
12470	Wye, 3-phase	105/80	S/P		5948	87	ADS-521	B567-2
12470	Wye, 3-phase	80	S		5948	87	ADS-521	B607-2
12470	Wye, 3-phase	80	S/P		6800	87	ADS-522	B906-2
13200	Wye, 3-phase	80	S/P		6800	91	ADS-522	B907-2
13200	Wye, 3-phase	125/105/80	S/P/C		5948	91	ADS-521	B448-2
13200	Wye, 3-phase	105/80	S/P		5948	91	ADS-521	B612-2
13200	Wye, 3-phase	80	S		5948	91	ADS-521	B628-2
13800	Wye, 3-phase	125/105/80	S/P/C		5948	91	ADS-521	B448-2
13800	Wye, 3-phase	105/80	S/P		5948	91	ADS-521	B612-2
13800	Wye, 3-phase	80	S		5948	91	ADS-521	B628-2
13800	Wye, 3-phase	80	S/P		6800	91	ADS-522	B909-2

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.

⁵ Derate may be applicable. Please consult the factory for details.

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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