

## Generator set data sheet



**Model:** DQLC  
**Frequency:** 60 Hz  
**Fuel type:** Diesel  
**kW rating:** 2500 Standby  
 2335 Prime  
**Emissions level:** 1950 Continuous

Exhaust emission data sheet:	EDS-1074
Sound performance data sheet:	MSP-1050
Cooling performance data sheet:	MCP-164
Prototype test summary data sheet:	PTS-272
Remote radiator cooling outline:	A049T235
High ambient air temperature radiator cooling outline (ship loose):	A049T237
Enhanced high ambient air temperature radiator cooling outline (ship loose):	A049T239

Fuel consumption	Standby				Prime				Continuous
	kW (kVA)				kW (kVA)				kW (kVA)
Ratings	2500 (3125)				2335 (2920)				1950 (2438)
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	Full
US gph	58	95	131	168	56	90	124	158	135
L/hr	220	358	496	634	211	340	469	598	512

Engine	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QSK78-G8		
Configuration	Cast Iron, V 18 cylinder		
Aspiration	Turbocharged and low temperature after-cooled		
Gross engine power output, kWm (bhp)	2711 (3636)	2539 (3405)	2138 (2867)
BMEP at set rated load, kPa (psi)	2327 (338)	2180 (316)	1835 (266)
Bore, mm (in.)	170.0 (6.69)		
Stroke, mm (in.)	190.0 (7.48)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	11.4 (2243)		
Compression ratio	15.3:1		
Lube oil capacity, L (qt)	413 (436)		
Overspeed limit, rpm	2100		
Regenerative power, kW	357		

Fuel flow	
Maximum fuel flow, L/hr (US gph)	2234 (590)
Maximum fuel restriction at injection pump with clean filter, kPa (in Hg)	17 (5)
Maximum fuel inlet temperature, °C (°F)	70 (160)

<b>Air</b>	<b>Standby rating</b>	<b>Prime rating</b>	<b>Continuous rating</b>
Combustion air, m <sup>3</sup> /min (cfm)	212 (7500)	202 (7137)	178 (6290)
Maximum air cleaner restriction, kPa (in H <sub>2</sub> O)	3.7 (15)		
Alternator cooling air, m <sup>3</sup> /min (cfm)	178 (6278)		

### **Exhaust**

Exhaust flow at set rated load, m <sup>3</sup> /min (cfm)	523 (18481)	496 (17523)	433 (15289)
Exhaust temperature, °C (°F)	443 (829)	433 (812)	410 (771)
Maximum back pressure, kPa (in H <sub>2</sub> O)	6.7 (27)		

### **High ambient air temperature radiator cooling (ship loose)**

Ambient design, °C (°F)	43 (109)		
Fan load, kW <sub>m</sub> (HP)	90 (121)		
Coolant capacity (with radiator), L (US gal)	738 (195)		
Cooling system air flow, m <sup>3</sup> /min (scfm)	3060 (108000)		
Total heat rejection, MJ/min (Btu/min)	113 (107000)	97 (91800)	79 (74700)
Maximum cooling air flow static restriction, kPa (in H <sub>2</sub> O)	0.12 (0.5)		

### **Enhanced high ambient air temperature radiator cooling (ship loose)**

Ambient design, °C (°F)	52 (126)		
Fan load, kW <sub>m</sub> (HP)	107 (144)		
Coolant capacity (with radiator), L (US gal)	1061 (280)		
Cooling system air flow, m <sup>3</sup> /min (scfm)	4560 (161000)		
Total heat rejection, MJ/min (Btu/min)	113 (107000)	97 (91800)	79 (74700)
Maximum cooling air flow static restriction, kPa (in H <sub>2</sub> O)	0.124 (0.5)		

### **Remote radiator cooling<sup>1</sup>**

Set coolant capacity, L (US gal)	223 (59)		
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)	2536 (670)		
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)	996 (263)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	57.6 (54602)	55.2 (52354)	49.7 (47109)
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	40.1 (38051)	37.1 (35208)	30.1 (28574.1)
Heat rejected, fuel circuit, MJ/min (Btu/min)	2.6 (2500)		
Total heat radiated to room, MJ/min (Btu/min)	21 (19956)	19.7 (18738)	16.7 (15901)
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)	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)	65 (150)		
Maximum fuel flow, L/hr (US gph)	2234 (590)		
Maximum fuel return line restriction, kPa (in Hg)	33.8 (10)		

## Weights<sup>2</sup>

Unit dry weight kgs (lbs)	23210 (51166)
Unit wet weight kgs (lbs)	24238 (53433)

### Notes:

<sup>1</sup> For non-standard remote installations contact your local Cummins representative.

<sup>2</sup> Weights represent a set with standard features. See outline drawing for weights of other configurations.

## Derating factors

<b>Standby</b>	Engine power available up to 2363 m (7749 ft) at ambient temperatures up to 40 °C (104 °F) and up to 1344 m (4410 ft) at 50 °C (120 °F). Above these conditions, derate at 2.7% per 305 m (1000 ft) and 7.6% per 10 °C (18 °F).
<b>Prime</b>	Engine power available up to 1862 m (6106 ft) at ambient temperatures up to 40 °C (104 °F) and up to 1013 m (3324 ft) at 50 °C (120 °F). Above these conditions, derate at 4.5% per 305 m (1000 ft) and 13% per 10 °C (18 °F).
<b>Continuous</b>	Engine power available up to 1467 m (4812 ft) at ambient temperatures up to 40 °C (104 °F) and up to 555 m (1819 ft) at 50 °C (120 °F). Above these conditions, derate at 5.2% per 305 m (1000 ft) and 16% per 10 °C (18 °F).

## Ratings definitions

<b>Emergency Standby Power (ESP):</b>	<b>Limited-Time Running Power (LTP):</b>	<b>Prime Power (PRP):</b>	<b>Base Load (Continuous) Power (COP):</b>
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 <sup>1</sup>	Temp rise degrees C	Duty <sup>2</sup>	Single phase factor <sup>3</sup>	Max surge kVA <sup>4</sup>	Winding No.	Alternator data sheet	Feature code
380	Wye, 3-phase	105	C		10049	13	ADS-517	B408-2
380	Wye, 3-phase	125	S		7944	13	ADS-516	B407-2
380	Wye, 3-phase	150	S		7333	13	ADS-515	B814-2
380	Wye, 3-phase	125	P		7944	13	ADS-516	B815-2
380	Wye, 3-phase	80	C		7944	13	ADS-516	B800-2
380	Wye, 3-phase	105	P		7944	13	ADS-516	B840-2
380	Wye, 3-phase	105	C		7333	13	ADS-515	B597-2
440	Wye, 3-phase	150/125/105	S/P/C		8412	12	ADS-516	B813-2
440	Wye, 3-phase	125/80	S/P/C		9719	12	ADS-517	B663-2
440	Wye, 3-phase	105/80	S/P		13024	12	ADS-531	B664-2
440	Wye, 3-phase	80	S		14781	12	ADS-532	B688-2
480	Wye, 3-phase	150	S		7267	12	ADS-515	B816-2
480	Wye, 3-phase	125	P		8412	12	ADS-516	B718-2
480	Wye, 3-phase	125/105/80	S/P/C		8412	12	ADS-516	B801-2
480	Wye, 3-phase	105	S		9719	12	ADS-517	B280-2
480	Wye, 3-phase	80	S		13024	12	ADS-531	B601-2
480	Wye, 3-phase	80	P		13024	12	ADS-531	B694-2
480	Wye, 3-phase	105	C		7267	12	ADS-515	B583-2
600	Wye, 3-phase	150	S		7233	07	ADS-515	B817-2
600	Wye, 3-phase	125	P		7233	07	ADS-515	B720-2
600	Wye, 3-phase	125/105/80	S/P/C		8189	07	ADS-516	B602-2
600	Wye, 3-phase	105	S		9597	07	ADS-517	B839-2
600	Wye, 3-phase	80	S		12426	07	ADS-531	B604-2
600	Wye, 3-phase	80	P		12426	07	ADS-531	B695-2
600	Wye, 3-phase	105	C		7233	07	ADS-515	B582-2
4160	Wye, 3-phase	150/105	S/P/C		6335	51	ADS-518	B606-2
4160	Wye, 3-phase	125	S		6335	51	ADS-518	B818-2
4160	Wye, 3-phase	105/80	P/C		7295	51	ADS-519	B571-2

### Notes:

- <sup>1</sup> Single phase power can be taken from three phase generator sets at up to the value listed in the single phase factor column for the generator set nameplate kW rating at unity power factor.
- <sup>2</sup> Standby (S), Prime (P) and Continuous ratings (C).
- <sup>3</sup> Factor for the *Single phase output* from *Three phase alternator* formula listed below.
- <sup>4</sup> Maximum rated starting kVA that results in a minimum of 90% of rated sustained voltage during starting.

## Alternator data (continued)

Voltage	Connection <sup>1</sup>	Temp rise degrees C	Duty <sup>2</sup>	Single phase factor <sup>3</sup>	Max surge kVA <sup>4</sup>	Winding No.	Alternator data sheet	Feature code
4160	Wye, 3-phase	105	S		7295	51	ADS-519	B491-2
4160	Wye, 3-phase	80	S		8752	51	ADS-520	B605-2
4160	Wye, 3-phase	80	P		8752	51	ADS-520	B802-2
13.2-13.8k	Wye, 3-phase	125	P		6800	91	ADS-522	B804-2
13.2k	Wye, 3-phase	125/105	S/P		7993	91	ADS-523	B819-2
13.2k	Wye, 3-phase	105	C		5948	91	ADS-521	B805-2
13.2k	Wye, 3-phase	105	S		7993	91	ADS-523	B501-2
13.2k	Wye, 3-phase	80	P		11213	91	ADS-533	B566-2
13.2k	Wye, 3-phase	80	S		13438	91	ADS-534	B807-2
13.2k	Wye, 3-phase	80	C		6800	91	ADS-522	B808-2
13.8k	Wye, 3-phase	125	S		6800	91	ADS-522	B820-2
13.8k	Wye, 3-phase	105	P		6800	91	ADS-522	B821-2
13.8k	Wye, 3-phase	105	C		5948	91	ADS-521	B460-2
13.8k	Wye, 3-phase	80	S		11213	91	ADS-533	B610-2
13.8k	Wye, 3-phase	80	P		11213	91	ADS-533	B809-2
13.8k	Wye, 3-phase	80	C		6800	91	ADS-522	B565-2
12.47k	Wye, 3-phase	125	S		7993	91	ADS-523	B822-2
12.47k	Wye, 3-phase	105	P		7993	91	ADS-523	B823-2
12.47k	Wye, 3-phase	105	S		11213	91	ADS-533	B568-2
12.47k	Wye, 3-phase	80	S		13438	91	ADS-534	B607-2
12.47k	Wye, 3-phase	125	P		6670	87	ADS-522	B811-2
12.47k	Wye, 3-phase	80	P		11213	91	ADS-533	B812-2
12.47k	Wye, 3-phase	105	C		6007	87	ADS-521	B569-2
12.47k	Wye, 3-phase	105	C		6800	87	ADS-522	B570-2
13.8k	Wye, 3-phase	105	C		7993	91	ADS-523	B895-2

### Notes:

<sup>1</sup> Single phase power can be taken from three phase generator sets at up to the value listed in the single phase factor column for the generator set nameplate kW rating at unity power factor.

<sup>2</sup> Standby (S), Prime (P) and Continuous ratings (C).

<sup>3</sup> Factor for the *Single phase output* from *Three phase alternator* formula listed below.

<sup>4</sup> 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.

For more information contact your local Cummins distributor or visit [power.cummins.com](http://power.cummins.com)

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