

Generator set data sheet



Model:	DQDAC
Frequency:	60 Hz
Fuel type:	Diesel
kW rating:	300 Standby 270 Prime
Emissions level:	EPA NSPS Stationary Emergency Tier 3

Exhaust emission data sheet:	EDS-1073
Exhaust emission compliance sheet:	EPA-1101
Sound performance data sheet:	MSP-1030
Cooling performance data sheet:	MCP-150
Prototype test summary data sheet:	PTS-164
Standard set-mounted radiator cooling outline:	A048R355
Optional set-mounted radiator cooling outline with seismic feature codes L228-2 (IBC) or L225-2 (OSHDP):	A041F591

Fuel consumption	Standby				Prime				Continuous
	kW (kVA)				kW (kVA)				kW (kVA)
Ratings	300 (375)				270 (338)				
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	
US gph	6.8	12.2	17.7	23.1	6.3	11.1	15.9	20.8	
L/hr	25.8	46.3	66.8	87.3	23.6	42.0	60.3	78.7	

Engine	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QSL9-G7		
Configuration	Cast iron, in-line 6 cylinder		
Aspiration	Turbocharged and CAC		
Gross engine power output, kW _m (bhp)	346 (464)	312 (419)	
BMEP at set rated load, kPa (psi)	2606 (378)	2351 (341)	
Bore, mm (in.)	114.0 (4.49)		
Stroke, mm (in.)	145 (5.69)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	8.7 (1707.0)		
Compression ratio	16.1:1		
Lube oil capacity, L (qt)	30.0 (31.7)		
Overspeed limit, rpm	2070 ± 50		
Regenerative power, kW	35.00		

Fuel flow	
Maximum fuel flow, L/hr (US gph)	156.7 (41.4)
Maximum fuel inlet restriction, mm Hg (in Hg)	152.4 (6.0)
Maximum return restriction, mm Hg (in Hg)	254.0 (10.0)

Air	Standby rating	Prime rating	Continuous rating
Combustion air, m ³ /min (scfm)	25.1 (885.8)	23.2 (820.7)	
Maximum air cleaner restriction, kPa (in H ₂ O)	6.2 (25.0)		
Alternator cooling air, m ³ /min (cfm)	59.4 (2100.0)		

Exhaust

Exhaust flow at set rated load, m ³ /min (cfm)	65.0 (2296)	60.5 (2137)	
Exhaust temperature, °C (°F)	551.8 (1025)	515.9 (961)	
Maximum back pressure, kPa (in H ₂ O)	10.2 (41.0)		

Standard set-mounted radiator cooling (non-seismic)

Ambient design, °C (°F)	50 (122)		
Fan load, kW _m (HP)	26.09 (35)		
Coolant capacity (with radiator), L (US gal)	34.29 (9.06)		
Cooling system air flow, m ³ /min (scfm)	427.58 (15100)		
Total heat rejection, MJ/min (Btu/min)	10.5 (9924.0)	9.3 (8727.0)	
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)		

Optional set-mounted radiator cooling (with seismic feature codes L228-2 (IBC) and/or L225-2 (OSHPD))

Ambient design, °C (°F)	40 (104)		
Fan load, kW _m (HP)	27.8 (37.2)		
Coolant capacity (with radiator), L (US gal)	30.3 (8.0)		
Cooling system air flow, m ³ /min (scfm)	568.1 (20075.0)		
Total heat rejection, MJ/min (Btu/min)	10.5 (9924.0)	9.3 (8727.0)	
Maximum cooling air flow static restriction, kPa (in H ₂ O)	0.12 (0.5)		

Optional heat exchanger cooling	Standby rating	Prime rating	Continuous rating
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)			

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)			
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)			
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 friction head, jacket water circuit, kPa (psi)			
Maximum friction head, aftercooler circuit, kPa (psi)			
Maximum static head, jacket water circuit, m (ft)			
Maximum static head, aftercooler circuit, m (ft)			
Maximum jacket water outlet temp, °C (°F)			
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)			
Maximum aftercooler inlet temp, °C (°F)			
Maximum fuel flow, L/hr (US gph)			
Maximum fuel return line restriction, kPa (in Hg)			

Weights²

Unit dry weight kgs (lbs)	2319 (5113)
Unit wet weight kgs (lbs)	2370 (5225)

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	Engine power available up to 549 m (1800 ft) at ambient temperature up to 40 °C (104 °F). Above these elevations, derate at 7% per 400 m (1312 ft). Above 40 °C (104 °F) derate 7% per 10 deg C (18 deg F). Derates must be combined when both altitude of 549 m (1800 ft) and temperature of 40 °C (104 °F) are exceeded.
Prime	Engine power available up to 500 m (1640 ft) at ambient temperature up to 40 °C (104 °F). Above these elevations, derate at 7% per 400 m (1312 ft). Above 40 °C (104 °F), derate 5.5% per 10 °C (18 °F). Derates must be combined when both altitude of 500 m (1640 ft) and temperature of 40 °C (104 °F) are exceeded.
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

Three phase table ¹	80 °C	80 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C	125 °C		
Feature code	B251	B302	B259	B256	B301	B258	B252	B246	B247	B300		
Alternator data sheet number	342	342	342	342	341	342	341	341	341	341		
Voltage ranges	277/480	347/600	110/190 thru 139/240 220/380 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 139/240 220/380 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	277/480	277/480	347/600		
Surge kW	322	322	322	322	322	322	322	322	322	322		
Motor starting kVA (at 90% sustained voltage)	Shunt											
	PMG	1372	1372	1372	1372	1210	1372	1210	1210	1210	1210	
Full load current - amps at Standby rating	<u>120/208</u> 1042	<u>127/220</u> 985	<u>139/240</u> 903	<u>220/380</u> 570	<u>240/416</u> 521	<u>254/440</u> 483	<u>277/480</u> 452	<u>347/600</u> 361				

Note:

¹ Single phase power can be taken from a three phase generator set at up to 40% of the generator set nameplate kW rating at unity power factor.

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

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