

## Generator set data sheet



<b>Model:</b>	<b>DQCA</b>
<b>Frequency:</b>	<b>60 Hz</b>
<b>Fuel type:</b>	<b>Diesel</b>
<b>kW rating:</b>	<b>545 Data Center Continuous</b>
<b>Emissions level:</b>	<b>EPA NSPS Stationary Emergency Tier 2</b>

Exhaust emission data sheet:	EDS-1086
Exhaust emission compliance sheet:	EPA-1120
Sound performance data sheet:	MSP-1158
Sound data sheet - with seismic feature codes L228-2 (IBC) and/or L225-2 (OSHPD):	MSP-1011
Cooling system data in various ambient conditions:	MCP-247
Cooling system data in various ambient conditions - with seismic feature codes L228-2 (IBC) and/or L225-2 (OSHPD):	MCP-173
Prototype test summary data sheet:	PTS-160

Fuel consumption	kW (kVA)			
	1/4	1/2	3/4	Full
Ratings	545 (681)			
US gph	12.0	21.0	30.0	38.5
L/hr	45.4	79.5	113.6	145.7

### Engine

Engine manufacturer	Cummins Inc.
Engine model	QSK23-G7 NR2
Configuration	Cast Iron, in line 6 cylinder
Aspiration	Turbocharged and low temperature after-cooled
Gross engine power output, kWm (bhp)	809 (1085)
BMEP at set rated load, kPa (psi)	1752 (254)
Bore, mm (in.)	170 (6.69)
Stroke, mm (in.)	170 (6.69)
Rated speed, rpm	1800
Piston speed, m/s (ft/min)	10.21 (2010)
Compression ratio	16:1
Lube oil capacity, L (qt)	102 (108)
Overspeed limit, rpm	2100
Regenerative power, kW	93

### Fuel flow

Maximum fuel flow, L/hr (US gph)	685 (181)
Maximum fuel inlet restriction, kPa (in Hg)	13.44 (4)
Maximum fuel inlet temperature, °C (°F)	71 (160)

## Air

Combustion air, m <sup>3</sup> /min (scfm)	56 (1961)
Maximum air cleaner restriction, kPa (in H <sub>2</sub> O)	6.2 (25)
Alternator cooling air, m <sup>3</sup> /min (cfm)	117 (4156)

## Exhaust

Exhaust flow at set rated load, m <sup>3</sup> /min (cfm)	128 (4515)
Exhaust temperature, °C (°F)	429 (804)
Maximum back pressure, kPa (in H <sub>2</sub> O)	10.1 (40.8)

## Standard set-mounted radiator cooling (non-seismic)

Ambient design, °C (°F)	50 (122)
Fan load, kW <sub>m</sub> (HP)	24 (32)
Coolant capacity (with radiator), L (US gal)	109.5 (29)
Cooling system air flow, m <sup>3</sup> /min (scfm)	998 (35233)
Total heat rejection, MJ/min (Btu/min)	23.9 (22706)
Maximum cooling air flow static restriction, kPa (in H <sub>2</sub> O)	0.12 (0.5)
Maximum fuel return line restriction kPa (in Hg)	30.47 (9)

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

Ambient design, °C (°F)	50 (122)
Fan load, kW <sub>m</sub> (HP)	27 (36)
Coolant capacity (with radiator), L (US gal)	89 (23.5)
Cooling system air flow, m <sup>3</sup> /min (scfm)	1252 (44183)
Total heat rejection, MJ/min (Btu/min)	23.9 (22706)
Maximum cooling air flow static restriction, kPa (in H <sub>2</sub> O)	0.12 (0.5)
Maximum fuel return line restriction kPa (in Hg)	30.47 (9)

## Weights<sup>1</sup>

Unit dry weight kgs (lbs)	6075 (13395)
Unit wet weight kgs (lbs)	6337 (13973)

### Notes:

<sup>1</sup> Weights represent a set with standard features. See outline drawing for weights of other configurations.

## Derating factors

Engine power available up to 2705 m (8875 ft) at ambient temperatures up to 40 °C (104 °F). Above these elevations, derate at 4.4% per 305 m (1000 ft). Above 40 °C (104 °F) derate 10% per 10 °C (18 °F).

## Ratings definitions

**Data Center Continuous (DCC):** Applicable for supplying power continuously to a constant electrical load for unlimited hours in a data center application where a reliable utility is present. The Data Center Continuous (DCC) power rating is in accordance with ISO8528.

## Alternator data

Voltage	Connection	Temp rise degrees C	Duty <sup>1</sup>	Max surge kVA <sup>2</sup>	Winding No.	Alternator data sheet	Feature code
380-480	Wye	125/105	S/P	2944	312	ADS-309	B282-2
600	Wye	125/105	S/P	2944	7	ADS-309	B300-2
600	Wye	105/80	S/P	2944	7	ADS-309	B301-2
220/380	Wye	105/80	S/P	3313	311	ADS-310	B599-2
480	Wye	105/80	S/P	2944	312	ADS-309	B600-2
480	Wye	80	S	2944	312	ADS-309	B601-2
600	Wye	80	S	2944	7	ADS-309	B604-2
380	Wye	80	S	3866	312	ADS-311	B660-2
190-480	Wye	125/105	S/P	2944	311	ADS-309	B731-2
208/416	Wye	105/80	S/P	2944	311	ADS-309	B733-2
208/416	Wye	80	S	3313	311	ADS-310	B734-2
440	Wye	125/105	S/P	2944	312	ADS-309	B741-2

### Notes:

<sup>1</sup> Standby (S), Prime (P) and Continuous ratings (C).

<sup>2</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

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

**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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