Generator set data sheet

Model: DQLF
Frequency: 60
Fuel type: Diesel
KW rating: 2500 Data Center Continuous®
Emissions level: EPA NSPS Stationary Emergency Tier 2

Exhaust emission data sheet: EDS-1125
Exhaust emission compliance sheet: EPA-1174
Sound performance data sheet: MSP-1103
Cooling performance data sheet: MCP-211
Prototype test summary data sheet: PTS-299
Remote radiator cooling outline: A049A843
High ambient cooling system outline (ship loose): A049A845
Enhanced high ambient cooling system outline (ship loose): A049A847

Fuel consumption

<table>
<thead>
<tr>
<th>Ratings</th>
<th>kW (kVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2500 (3125)</td>
<td></td>
</tr>
</tbody>
</table>

Load            | 1/4 | 1/2 | 1/4 | Full |
US gph           | 59.7 | 96.1 | 132.5 | 168.9 |
L/hr             | 226  | 364  | 501  | 639  |

Engine

Engine manufacturer: Cummins Inc.
Engine model: QSK78-G12
Configuration: Cast Iron, V 18 cylinder
Aspiration: Turbocharged and low temperature aftercooled
Gross engine power output, kWm (bhp): 2737 (3670)
BMEP at set rated load, kPa (psi): 2351 (341)
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: 15.5:1
Lube oil capacity, L (qt): 413 (436)
Overspeed limit, rpm: 2100
Regenerative power, kW: 266

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): 71 (160)
### Air

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustion air, m³/min (scfm)</td>
<td>227 (8003)</td>
</tr>
<tr>
<td>Maximum air cleaner restriction, kPa (in H₂O)</td>
<td>3.7 (15)</td>
</tr>
<tr>
<td>Alternator cooling air, m³/min (cfm)</td>
<td>270 (9535)</td>
</tr>
</tbody>
</table>

### Exhaust

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust flow at set rated load, m³/min (cfm)</td>
<td>532 (18784)</td>
</tr>
<tr>
<td>Exhaust temperature, °C (°F)</td>
<td>454 (850)</td>
</tr>
<tr>
<td>Maximum back pressure, kPa (in H₂O)</td>
<td>7 (28)</td>
</tr>
</tbody>
</table>

### High ambient cooling system (ship loose)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient design °C (°F)</td>
<td>40 (104)</td>
</tr>
<tr>
<td>Fan load kWm (hp)</td>
<td>90 (121)</td>
</tr>
<tr>
<td>Cooling capacity (with radiator), L (US gal)</td>
<td>738 (195)</td>
</tr>
<tr>
<td>Cooling system air flow, m³/min (scfm)</td>
<td>3060 (108000)</td>
</tr>
<tr>
<td>Total heat rejection, MJ/min (Btu/min)</td>
<td>94.6 (89618)</td>
</tr>
<tr>
<td>Maximum cooling air flow static restriction, kPa (in H₂O)</td>
<td>0.12 (0.5)</td>
</tr>
</tbody>
</table>

### Enhanced high ambient cooling system (ship loose)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient design, °C (°F)</td>
<td>49 (120)</td>
</tr>
<tr>
<td>Fan load, kWm (hp)</td>
<td>107 (144)</td>
</tr>
<tr>
<td>Coolant capacity (with radiator), L (US gal)</td>
<td>1061 (280)</td>
</tr>
<tr>
<td>Cooling system air flow, m³/min (scfm)</td>
<td>4560 (161000)</td>
</tr>
<tr>
<td>Total heat rejection, MJ/min (Btu/min)</td>
<td>94.6 (89618)</td>
</tr>
<tr>
<td>Maximum cooling air flow static restriction, kPa (in H₂O)</td>
<td>0.12 (0.5)</td>
</tr>
</tbody>
</table>

### Remote radiator cooling at 25C, 110M¹

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set coolant capacity, L (US gal)</td>
<td>223 (59)</td>
</tr>
<tr>
<td>Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)</td>
<td>2222 (587)</td>
</tr>
<tr>
<td>Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)</td>
<td>988 (261)</td>
</tr>
<tr>
<td>Heat rejected, jacket water circuit, MJ/min (Btu/min)</td>
<td>51.1 (48459)</td>
</tr>
<tr>
<td>Heat rejected, aftercooler circuit, MJ/min (Btu/min)</td>
<td>40.8 (38659)</td>
</tr>
<tr>
<td>Heat rejected, fuel circuit, MJ/min (Btu/min)</td>
<td>2.6 (2500)</td>
</tr>
<tr>
<td>Total heat radiated to room, MJ/min (Btu/min)</td>
<td>21.4 (20341)</td>
</tr>
<tr>
<td>Maximum friction head, jacket water circuit, kPa (psi)</td>
<td>69 (10)</td>
</tr>
<tr>
<td>Maximum friction head, aftercooler circuit, kPa (psi)</td>
<td>48 (7)</td>
</tr>
<tr>
<td>Maximum static head, jacket water circuit, m (ft)</td>
<td>18.3 (60)</td>
</tr>
<tr>
<td>Maximum static head, aftercooler circuit, m (ft)</td>
<td>18.3 (60)</td>
</tr>
<tr>
<td>Maximum jacket water outlet temp, °C (°F)</td>
<td>100 (212)</td>
</tr>
<tr>
<td>Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)</td>
<td>49 (120)</td>
</tr>
<tr>
<td>Maximum aftercooler inlet temp, °C (°F)</td>
<td>66 (150)</td>
</tr>
<tr>
<td>Maximum fuel flow, L/hr (US gph)</td>
<td>2234 (590)</td>
</tr>
<tr>
<td>Maximum fuel return line restriction, kPa (in Hg)</td>
<td>34 (10)</td>
</tr>
</tbody>
</table>

¹ For non-standard remote installations contact your local Cummins Power Generation representative.
Weights

<table>
<thead>
<tr>
<th></th>
<th>kgs (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit dry weight</td>
<td>23210 (51166)</td>
</tr>
<tr>
<td>Unit wet weight</td>
<td>24238 (53433)</td>
</tr>
</tbody>
</table>

Weights represent a set with standard features. See outline drawing for weights of other configurations.

Derating factors

**Standard Cooling System**: Full rated power available up to 1077 m (3536 ft) elevation at ambient temperatures up to 40 °C (104 °F). At 40 °C (104 °F) derate by 4.6% per 305m (1000 ft) from 1077 m (3536 ft) to 2000 m (6560 ft). Above these conditions derate by 7.5% per 305m (1000 ft) and by an additional 17.8% per 10 °C (18 °F).

**Enhanced Cooling System**: Full rated power available up to 1240 m (4067 ft) elevation at ambient temperatures up to 40°C (104°F). At 40°C (104°F) derate by 4.6% per 305m (1000 ft) from 1240 m (4067 ft) to 2399 m (7872 ft), and above 2399 m (7872 ft) derate by 7.5% per 305m (1000 ft). Full rated power available up to 387 m (1269 ft) elevation at ambient temperatures up to 50°C (122°F). At 50°C (122°F) derate by 4.6% per 305m (1000 ft) from 387 m (1269 ft) to 1600 m (5248 ft), and above 1600 m (5248 ft) derate by 7.5% per 305m (1000 ft). At higher ambient temperatures, derate by an additional 21.3% per 10 °C (18°F).

**Remote Radiator Cooling Option**: Full rated power available up to 728 m (2387 ft) at ambient temperature up to 40 °C (104 °F). Above these elevations, at 40 °C (104 °F), derate by an additional 7.75% per 305 m (1000 ft). Derate by 2.25% at sea level at ambient temperatures up to 50 °C (122 °F). Above these elevations, at 50 °C (122 °F), derate by an additional 7.4% per 305 m (1000 ft). At higher ambient temperatures, derate by an additional 19% per 10 °C (18 °F).

Ratings definitions

**Data Center Continuous® (DCC)**: Applicable for supplying power continuously to a constant or varying electrical load for unlimited hours in a data center application.
Alternator data

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Connection</th>
<th>Temp rise degrees C</th>
<th>Duty(^1)</th>
<th>Max surge kVA(^2)</th>
<th>Winding No.</th>
<th>Alternator data sheet</th>
<th>Feature Code</th>
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</thead>
<tbody>
<tr>
<td>440</td>
<td>Wye</td>
<td>150</td>
<td>S/P/C</td>
<td>9719</td>
<td>12</td>
<td>ADS-517</td>
<td>B813-2</td>
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<tr>
<td>380</td>
<td>Wye</td>
<td>125</td>
<td>P</td>
<td>7944</td>
<td>13</td>
<td>ADS-516</td>
<td>B815-2</td>
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<td>380</td>
<td>Wye</td>
<td>105</td>
<td>P</td>
<td>10049</td>
<td>13</td>
<td>ADS-517</td>
<td>B840-2</td>
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<tr>
<td>440</td>
<td>Wye</td>
<td>125</td>
<td>S/P/C</td>
<td>13024</td>
<td>12</td>
<td>ADS-531</td>
<td>B663-2</td>
</tr>
<tr>
<td>440</td>
<td>Wye</td>
<td>105</td>
<td>S/P</td>
<td>13024</td>
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<td>B664-2</td>
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<td>277/480</td>
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<td>125</td>
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<td>P</td>
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<td>12</td>
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<td>B694-2</td>
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<td>125</td>
<td>P</td>
<td>8189</td>
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<td>600</td>
<td>Wye</td>
<td>80</td>
<td>P</td>
<td>12426</td>
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<td>ADS-531</td>
<td>B695-2</td>
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<tr>
<td>2400/4160</td>
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<td>105</td>
<td>P/C</td>
<td>7295</td>
<td>51</td>
<td>ADS-519</td>
<td>B721-2</td>
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<td>3200-13800</td>
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<td>P</td>
<td>6800</td>
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<td>B804-2</td>
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<td>13200</td>
<td>Wye</td>
<td>125</td>
<td>S/P</td>
<td>11213</td>
<td>91</td>
<td>ADS-533</td>
<td>B819-2</td>
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<td>13200</td>
<td>Wye</td>
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<td>P</td>
<td>13438</td>
<td>91</td>
<td>ADS-534</td>
<td>B566-2</td>
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<tr>
<td>13800</td>
<td>Wye</td>
<td>105</td>
<td>P</td>
<td>7993</td>
<td>91</td>
<td>ADS-523</td>
<td>B821-2</td>
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<tr>
<td>13800</td>
<td>Wye</td>
<td>80</td>
<td>P</td>
<td>11213</td>
<td>91</td>
<td>ADS-533</td>
<td>B809-2</td>
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<tr>
<td>12470</td>
<td>Wye</td>
<td>105</td>
<td>P</td>
<td>11213</td>
<td>91</td>
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<td>12470</td>
<td>Wye</td>
<td>80</td>
<td>P</td>
<td>13438</td>
<td>91</td>
<td>ADS-534</td>
<td>B812-2</td>
</tr>
<tr>
<td>2400/4160</td>
<td>Wye</td>
<td>150</td>
<td>S/P/C</td>
<td>7295</td>
<td>51</td>
<td>ADS-519</td>
<td>B938-2</td>
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<tr>
<td>2400/4160</td>
<td>Wye</td>
<td>80</td>
<td>P</td>
<td>8752</td>
<td>51</td>
<td>ADS-520</td>
<td>B939-2</td>
</tr>
</tbody>
</table>

Notes:
\(^1\) Standby (S), Prime (P) and Continuous ratings (C).
\(^2\) 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

\[
\text{kW} \times 1000 \\
\text{Voltage} \times 1.73 \times 0.8
\]

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.