# Cat® C9
## Diesel Generator Sets

**Standby & Prime: 60 Hz**

Image shown might not reflect actual configuration.

| | |
|---|---|
| Engine Model | Cat® C9 In-line 6, 4-cycle Diesel |
| Bore x Stroke | 112 mm x 149 mm (4.4 in x 5.9 in) |
| Displacement | 8.8 L (538 in³) |
| Compression Ratio | 16.1:1 |
| Aspiration | Turbocharged Air-to-Air Aftercooled |
| Fuel Injection System | HEUI |
| Governor | Electronic ADEM™ A4 – G3 Class* capable |

| Model | Standby | Prime | Emission Strategy |
|---|---|---|---|
| D250 | 250 ekW, 313 kVA | 225 ekW, 281 kVA | TIER III Non-Road |

### PACKAGE PERFORMANCE

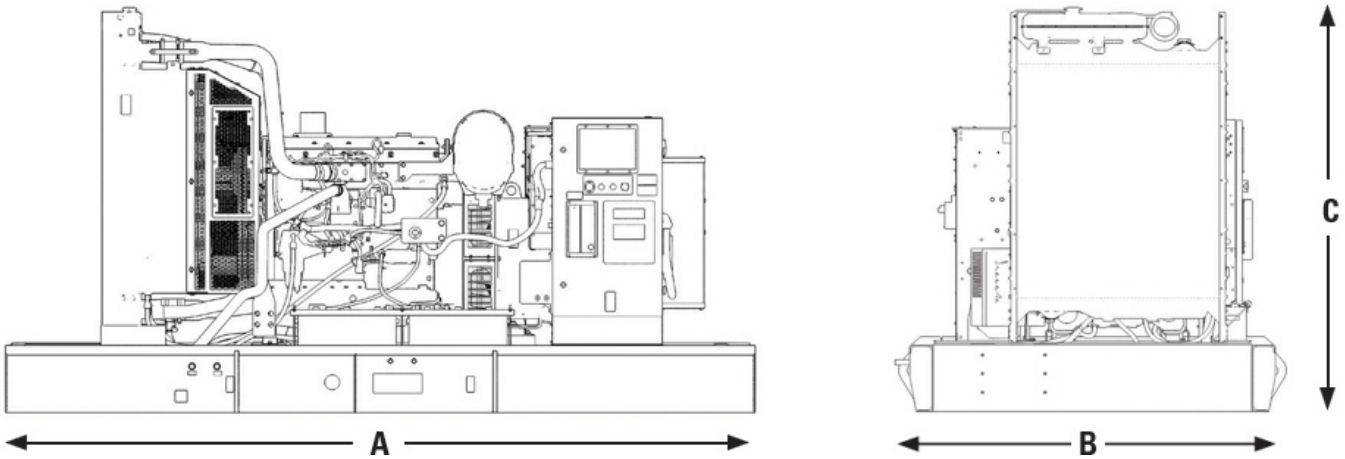
| Performance | Standby | Prime |
|---|---|---|
| Frequency | 60 Hz | |
| Genset Power Rating | 313 kVA | 281 kVA |
| Genset power rating with fan @ 0.8 power factor | 250 ekW | 225 ekW |
| Emissions | TIER III Non-Road | |
| Performance Number | DM8501 | DM8505 |
| **Fuel Consumption** | | |
| 100% load with fan, L/hr (gal/hr) | 73.3 (19.3) | 68.9 (18.2) |
| 75% load with fan, L/hr (gal/hr) | 58.8 (15.5) | 55.7 (14.7) |
| 50% load with fan, L/hr (gal/hr) | 43.8 (11.5) | 42.0 (11) |
| 25% load with fan, L/hr (gal/hr) | 27.4 (7.2) | 27.2 (7.1) |
| **Cooling System[1]** | | |
| Radiator air flow restriction (system), kPa (in. water) | 0.12 (0.48) | 0.12 (0.48) |
| Radiator air flow, m³/min (CFM) | 497 (17551) | 497 (17551) |
| Engine coolant capacity, L (gal) | 13.9 (3.7) | 13.9 (3.7) |
| Radiator coolant capacity, L (gal) | 43 (11.5) | 43 (11.5) |
| Total coolant capacity, L (gal) | 57 (15) | 57 (15) |
| **Inlet Air** | | |
| Combustion air inlet flow rate, m³/min (CFM) | 25.2 (889.8) | 24.2 (855.3) |
| Max. Allowable Combustion Air Inlet Temp, °C (°F) | 50 (122) | 50 (122) |
| **Exhaust System** | | |
| Exhaust stack gas temperature, °C (°F) | 455.5 (852) | 444 (826) |
| Exhaust gas flow rate, m³/min (CFM) | 63.6 (2245.6) | 59.8 (2112.4) |
| Exhaust system backpressure (maximum allowable), kPa (in. water) | 10.0 (40.0) | 10.0 (40.0) |
| **Heat Rejection** | | |
| Heat rejection to jacket water, kW (BTU/min) | 104 (5928) | 99 (5631) |
| Heat rejection to exhaust (total), kW (BTU/min) | 277 (15772) | 259 (14720) |
| Heat rejection to aftercooler, kW (BTU/min) | 82 (4686) | 72 (4115) |
| Heat rejection to atmosphere from engine, kW (BTU/min) | 18 (1004) | 26 (1500) |
| Heat rejection from alternator, kW (BTU/min) | 18.2 (1035) | 15.9 (904) |

| Emissions (Nominal)[2] | Standby | Prime |
|---|---|---|
| NOx, mg/Nm³ (g/hp-hr) | 1516.2 (2.9) | 1355.4 (2.7) |
| CO, mg/Nm³ (g/hp-hr) | 172.8 (0.4) | 188.9 (0.4) |
| HC, mg/Nm³ (g/hp-hr) | 37.7 (0.1) | 44.2 (0.1) |
| PM, mg/Nm³ (g/hp-hr) | 32.6 (0.1) | 37.0 (0.1) |

| Alternator[3] | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duty Cycle | | Standby | | | | | | Prime | | | | | |
| Phase | | 3-Phase | | | | | | 3-Phase | | | | | |
| Voltages*, V | | 208 | 220 | 240 | 380 | 480 | 600 | 208 | 220 | 240 | 380 | 480 | 600 |
| Current Amps | | 867 | 821 | 752 | 476 | 376 | 301 | 781 | 737 | 677 | 427 | 338 | 271 |
| Frame: LC5024J Excitation: AREP | Temperature Rise @ 40°C | 130 | | 105 | | 105 | 150 | 105 | | 80 | | 80 | 105 |
| | Motor Starting Capability @ 30% Voltage Dip, skVA | 641 | | 816 | | 816 | 754 | 641 | | 816 | | 816 | 754 |
| Frame: LC5024L Excitation: AREP | Temperature Rise @ 40°C | 130 | | | | | | 105 | | | | | |
| | Motor Starting Capability @ 30% Voltage Dip, skVA | 818 | | | | | | 818 | | | | | |
| Frame: LC5024H Excitation: AREP | Temperature Rise @ 40°C | | | 150 | | 150 | 150 | | | 105 | | 105 | 105 |
| | Motor Starting Capability @ 30% Voltage Dip, skVA | | | 652 | | 652 | 656 | | | 652 | | 652 | 656 |
| Frame: LC5014H Excitation: SE | Temperature Rise @ 40°C | | | 150 | | 150 | | | | 125 | | 125 | |
| | Motor Starting Capability @ 30% Voltage Dip, skVA | | | 543 | | 543 | | | | 543 | | 543 | |
| Frame: LC5014J Excitation: SE | Temperature Rise @ 40°C | 150 | 130 | 150 | 150 | 105 | | 125 | 105 | 125 | 125 | 125 | |
| | Motor Starting Capability @ 30% Voltage Dip, skVA | 536 | 590 | 683 | 458 | 683 | | 536 | 590 | 683 | 458 | 683 | |
| Frame: LC5014L Excitation: SE | Temperature Rise @ 40°C | 105 | | | | | | 80 | | | | | |
| | Motor Starting Capability @ 30% Voltage Dip, skVA | 681 | | | | | | 681 | | | | | |

***Note:** 220V and 380V are additional offerings for the Latin America Market.

## WEIGHTS & DIMENSIONS




| Dim "A" mm (in) | Dim "B" mm (in) | Dim "C" mm (in) | Dry Weight kg (lb) |
|---|---|---|---|
| 3091 (122) | 1622 (64) | 2066 (82) | 2248 (4956) |

**Note:** General configuration not to be used for installation. See general dimension drawings for detail.

## APPLICABLE CODES AND STANDARDS:

CSA C22.2 No 100-04, UL489, UL869, UL2200, IBC, IEC60034-1, ISO 3046, ISO 8528, NEMA MG 1-22, NEMA MG 1-33 and facilitates the compliance to NFPA 37, NFPA70, NFPA 99, NFPA110.

**Note:** Codes may not be available for all model configurations. Site level review needed for NFPA 70. Please consult your Cat Dealer for availability.

**STANDBY:** Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

**PRIME:** Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

**RATINGS:** Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO 3046 standard conditions.

**FUEL RATES:** Based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/litre (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

## DEFINITIONS AND CONDITIONS

[1] For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

[2] Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO 8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 BTU/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

[3] UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

*Governing Class capability as per ISO 8528-5. Consult your local Cat dealer for configuration and site specific transient performance classification.