

# Cat® D450 GC

## Diesel Generator Sets



### Standby and Prime : 60 Hz



Image shown may not reflect actual configuration

Engine Model	Cat® C15 In-line 6, 4-cycle Diesel
Bore x Stroke	137 mm x 171 mm (5.4 in x 6.8 in)
Displacement	15.2 L (928 in <sup>3</sup> )
Compression Ratio	16.1:1
Aspiration	Turbocharged Air-to-Air Aftercooled
Fuel Injection System	MEUI
Governor	Electronic ADEM™ A4

Model	Standby	Prime	Emission Strategy
D450 GC	450 ekW, 562.5 kVA	410 ekW, 512.5 kVA	EPA Certified for Stationary Emergency Application

### PACKAGE PERFORMANCE

Performance	Standby	Prime
Frequency	60 Hz	
Genset Power Rating	562.5 kVA	512.5 kVA
Genset power rating with fan @ 0.8 power factor	450 ekW	410 ekW
Emissions	EPA TIER 3	
Performance Number	DM8153	DM8152
<b>Fuel Consumption</b>		
100% load with fan, L/hr (gal/hr)	128.7 (34.9)	118.4 (31.2)
75% load with fan, L/hr (gal/hr)	103.8 (27.4)	96.4 (25.4)
50% load with fan, L/hr (gal/hr)	77.3 (20.4)	70.9 (18.7)
25% load with fan, L/hr (gal/hr)	44.0 (11.6)	40.7 (10.7)
<b>Cooling System<sup>1</sup></b>		
Radiator air flow restriction (system), kPa (in water)	0.12 (0.48)	
Radiator air flow, m <sup>3</sup> /min (CFM)	705 (25426)	
Engine coolant capacity, L (gal)	20.8 (5.5)	
Radiator coolant capacity, L (gal)	54 (14)	
Total coolant capacity, L (gal)	75 (20)	
<b>Inlet Air</b>		
Combustion air inlet flow rate m <sup>3</sup> /min (CFM)	41.9 (1479.3)	40.1 (1416)
Max. allowable combustion air inlet temp, °C (°F)	48 (118)	49 (120)
<b>Exhaust System</b>		
Exhaust stack gas temperature, °C (°F)	665.4 (1230)	649.8 (1201)
Exhaust gas flow rate, m <sup>3</sup> /min (CFM)	111.3 (3930)	104.9 (3704)
Exhaust system backpressure (maximum allowable), kPa (in. water)	10.0 (40.0)	
<b>Heat Rejection</b>		
Heat rejection to jacket water, kW (BTU/min)	177 (10065)	166 (9440)
Heat rejection to exhaust (total), kW (BTU/min)	505 (28718)	470 (26728)
Heat rejection to aftercooler, kW (BTU/min)	133 (7563)	119 (6767)
Heat rejection to atmosphere from engine, kW (BTU/min)	70 (3980)	70.8 (4026)
Heat rejection from alternator, kW (BTU/min)	26 (1478)	25 (1421)
<b>Emissions (Nominal)<sup>2</sup></b>		
NOx, mg/Nm <sup>3</sup> (g/hp-hr)	1704.7 (3.68)	1,519.4 (4.56)
CO, mg/Nm <sup>3</sup> (g/hp-hr)	118.2 (0.26)	199.2 (0.41)
HC, mg/Nm <sup>3</sup> (g/hp-hr)	10.6 (0.03)	14.3 (0.04)
PM, mg/Nm <sup>3</sup> (g/hp-hr)	9.9 (0.03)	10.9 (0.03)

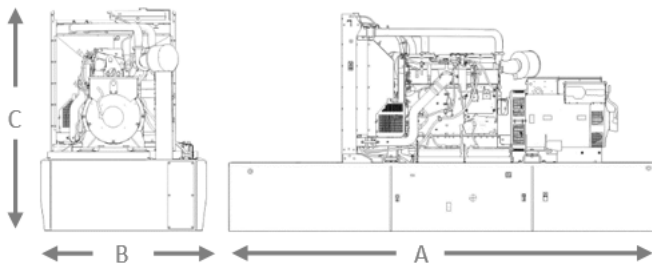
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## Electric Power



Alternator <sup>3</sup>	Standby		Prime	
	Voltages	480V	600V	480V
Motor starting capability @ 30% Voltage Dip, skVA	1045	1335	1045	1335
Current, Amps	676.6	541.3	617	493
Frame Size	M3136L41	M3136L41	M3136L41	M3136L41
Excitation	S.E	AREP	S.E	AREP
Temperature Rise, °C	105	105	105	105

### WEIGHTS & DIMENSIONS – OPEN SET



### FUEL TANK CAPACITY

Tank Design	Total Capacity L (gal)	Useable Capacity L (gal)
Integral	3671 (969.7)	3323 (877.8)

Base	Length "A" mm (in)	Width "B" mm (in)	Height "C" mm (in)	Generator Set Weight kg (lb)
Skid (Wide Base)	4815 (189.6)	1630 (64.2)	2034 (80.1)	3707 (8172.5)
Integral Tank Base	4815 (189.6)	1630 (64.2)	2584 (101.7)	4644 (10238.3)

**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, UL142, UL489, UL869, cUL/UL2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC60034-1, ISO 3046, ISO 8528, NEMA MG 1-33.

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative 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. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year. Maximum expected usage of 2000 hours per year only.

**RATINGS:** Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

#### DEFINITIONS AND CONDITIONS

<sup>1</sup> For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

<sup>2</sup> Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 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.

<sup>3</sup> 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.

**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 Bio diesel capability, please consult your Cat dealer.

## LET'S DO THE WORK.™

LEHE2010-07 (06/24)

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