

# DIESEL GENERATOR SET



## DE55E0

Image shown may not reflect actual package

Output Ratings		
Generator Set Model - 3 Phase	Prime*	Standby*
400/230 V, 50 Hz	50.0 kVA	55.0 kVA
	40.0 kW	44.0 kW
480V, 60 Hz	56.3 kVA	62.5 kVA
	45.0 kW	50.0 kW

\* Refer to ratings definitions on page 4.  
Ratings at 0,8 power factor.

Technical Data		
Engine Make & Model:	Cat® C3.3	
Generator Model:	LC1514N	
Control Panel:	EMCP 4.1	
Base Frame Type:	Heavy Duty Fabricated Steel	
Circuit Breaker Type:	3 Pole MCB / 3 Pole MCCB	
Frequency:	50 Hz	60 Hz
Engine Speed: RPM	1500	1800
Fuel Tank Capacity: litres (US gal)	219 (57.9)	
Fuel Consumption, Prime: l/hr (US gal/hr)	11.5 (3.0)	13.6 (3.6)
Fuel Consumption, Standby : l/hr (US gal/hr)	12.7 (3.4)	15.1 (4.0)

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## Engine Technical Data

Physical Data		Lubrication System	
<b>Manufacturer:</b>	Caterpillar	<b>Oil Filter Type:</b>	Spin-On, Full Flow
<b>Model:</b>	C3.3	<b>Total Oil Capacity I (US gal):</b>	8.3 (2.2)
<b>No. of Cylinders/Alignment:</b>	3 / In Line	<b>Oil Pan I (US gal):</b>	7.8 (2.1)
<b>Cycle:</b>	4 Stroke	<b>Oil Type:</b>	API CG4 / CH4 15W-40
<b>Induction:</b>	Turbocharged	<b>Cooling Method:</b>	Water
<b>Cooling Method:</b>	Water	<b>Performance</b>	
<b>Governing Type:</b>	Mechanical	<b>50 Hz</b>	<b>60 Hz</b>
<b>Governing Class:</b>	ISO 8528 G2	<b>Engine Speed: RPM</b>	1500      1800
<b>Compression Ratio:</b>	17.25:1	<b>Gross Engine Power: kW (hp)</b>	
<b>Displacement: I (cu.in)</b>	3.3 (201.4)	<b>-Standby:</b>	60.5 (81.0)      69.6 (93.0)
<b>Bore/Stroke: mm (in)</b>	105.0 (4.1)/127.0 (5.0)	<b>-Prime:</b>	55.0 (74.0)      63.3 (85.0)
<b>Moment of Inertia: kg m<sup>2</sup> (lb. in<sup>2</sup>)</b>	1.14 (3896)	<b>BMEP: kPa (psi)</b>	
<b>Engine Electrical System:</b>		<b>-Standby:</b>	1467.0 (212.8)      1407.0 (204.0)
<b>-Voltage/Ground:</b>	12/Negative	<b>-Prime:</b>	1333.0 (193.4)      1279.0 (185.5)
<b>-Battery Charger Amps:</b>	65	<b>Regenerative Power: kW</b>	7.0      9.0
<b>Weight: kg (lb) - Dry:</b>	420 (926)	<b>Fuel System</b>	
<b>- Wet:</b>	438 (966)	<b>Fuel Filter Type:</b>	Replaceable Element
		<b>Recommended Fuel:</b>	Class A2 Diesel or BSEN590
		<b>Fuel Consumption: l/hr (US gal/hr)</b>	
		<b>110% Load</b>	<b>100% Load</b> <b>75% Load</b> <b>50% Load</b>
<b>Air System</b>	<b>50 Hz</b>	<b>60 Hz</b>	
<b>Air Filter Type:</b>	Replaceable Element		
<b>Combustion Air Flow:</b>			
m <sup>3</sup> /min (cfm)	<b>-Standby:</b>	3.9 (138)      4.9 (173)	
	<b>-Prime:</b>	3.8 (134)      4.7 (166)	
<b>Max. Combustion Air Intake</b>			
<b>Restriction: kPa (in H<sub>2</sub>O)</b>	8.0 (32.1)	8.0 (32.1)	
<b>Radiator Cooling Air Flow:</b>			
m <sup>3</sup> /min (cfm)	110.4 (3899)	145.8 (5149)	
<b>External Restriction to</b>			
<b>Cooling Air Flow: Pa (in H<sub>2</sub>O)</b>	120 (0.5)	120 (0.5)	
<b>Cooling System</b>	<b>50 Hz</b>	<b>60 Hz</b>	
<b>Cooling System Capacity:</b>			
I (US gal)	10.2 (2.7)	10.2 (2.7)	
<b>Water Pump Type:</b>	Centrifugal		
<b>Heat Rejected to Water &amp; Lube Oil: kW (Btu/min)</b>			
<b>-Standby:</b>	38.0 (2161)	43.0 (2445)	
<b>-Prime:</b>	35.0 (1990)	41.0 (2332)	
<b>Heat Radiation to Room:</b> Heat radiated from engine and alternator			
kW (Btu/min)	<b>-Standby:</b>	16.4 (933)      16.9 (961)	
	<b>-Prime:</b>	14.6 (830)      16.0 (910)	
<b>Radiator Fan Load: kW (hp)</b>	1.0 (1.3)	1.7 (2.3)	
Cooling system designed to operate in ambient conditions up to 50°C (122°F). Contact your local Cat dealer for power ratings at specific site conditions.			
			<b>Exhaust System</b>
			<b>50 Hz</b> <b>60 Hz</b>
			<b>Silencer Type:</b>
			Industrial
			<b>Silencer Model &amp; Quantity:</b>
			EXSY1 (1)
			<b>Pressure Drop Across</b>
			<b>Silencer System: kPa (in Hg)</b>
			0.82 (0.242)      1.08 (0.319)
			<b>Silencer Noise Reduction</b>
			<b>Level: dB</b>
			16      18
			<b>Max. Allowable Back</b>
			<b>Pressure: kPa (in. Hg)</b>
			10.0 (3.0)      15.0 (4.4)
			<b>Exhaust Gas Flow:</b>
			m <sup>3</sup> /min (cfm)
			<b>-Standby:</b>
			8.8 (311)      10.6 (374)
			<b>-Prime:</b>
			8.4 (297)      9.8 (346)
			<b>Exhaust Gas Temperature: °C (°F)</b>
			<b>-Standby:</b>
			483 (901)      477 (891)
			<b>-Prime:</b>
			464 (867)      445 (833)

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## Generator Performance Data

Data Item	50 Hz				60 Hz				
	415/240V	400/230V 230/115V 200/115V	380/220V 220/110V	220/127V	480/277V 240/139V	380/220V 220/110V	240/120V 208/120V		440/254V 220/127V
Motor Starting Capacity* kVA	121	115	107	132	131	93	107	-	123
Short Circuit Capacity** %	300	300	300	300	300	300	300	-	300
Reactances: Per Unit									
Xd	2.480	2.670	2.958	1.898	2.505	3.657	3.336	-	2.982
X'd	0.132	0.142	0.157	0.101	0.133	0.194	0.177	-	0.158
X''d	0.066	0.071	0.079	0.050	0.067	0.097	0.089	-	0.079

Reactances shown are applicable to prime ratings.

\*Based on 30% voltage dip at 0.6 power factor and SHUNT excitation system.

\*\* With optional Permanent Magnet generator

## Generator Technical Data

Physical Data	
LC Series	
Model:	LC1514N
No. of Bearings:	1
Insulation Class:	H
Winding Pitch - Code:	2/3 - 6
Wires:	12
Ingress Protection Rating:	IP23
Excitation System:	SHUNT
AVR Model:	R220

Operating Data	
Overspeed: RPM	2250
Voltage Regulation: (steady state)	+/- 1.0%
Wave Form NEMA = TIF:	50
Wave Form IEC = THF:	2.0%
Total Harmonic Content LL/LN:	2.0%
Radio Interference:	Suppression is in line with European Standard EN61000-6
Radiant Heat: kW (Btu/min)	
-50 Hz:	5.4 (307)
-60 Hz:	5.9 (336)

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## Technical Data

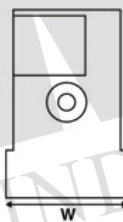
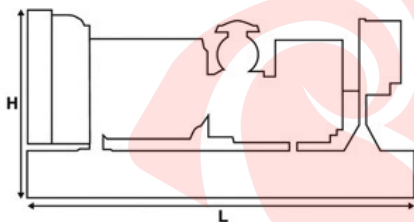
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
415/240V	50.0	40.0	55.0	44.0
400/230V	50.0	40.0	55.0	44.0
380/220V	50.0	40.0	55.0	44.0
230/115V	50.0	40.0	55.0	44.0
220/127V	43.0	34.4	47.3	37.8
220/110V	50.0	40.0	55.0	44.0
200/115V	50.0	40.0	55.0	44.0

Voltage 60 Hz	Prime		Standby	
	kVA	kW	kVA	kW
480/277V	56.3	45.0	62.5	50.0
220/127V	56.3	45.0	62.5	50.0
380/220V	51.5	41.2	56.7	45.4
240/120V	56.3	45.0	62.5	50.0
440/254V	56.3	45.0	62.5	50.0
220/110V	51.5	41.2	56.7	45.4
208/120V	56.3	45.0	62.5	50.0
240/139V	56.3	45.0	62.5	50.0

## Weights & Dimensions

Weights: kg (lb)	
Net (+ lube oil)	863 (1902)
Wet (+ lube oil & coolant)	876 (1931)
Fuel, lube oil & coolant	1061 (2340)

Dimensions: mm (in)	
Length	1925 (75.8)
Width	1120 (44.1)
Height	1361 (53.6)



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

## Definitions

### Standby Rating

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 Rating

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 kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

### Standard Reference Conditions

Note: Standard reference conditions 25°C (77°F) air inlet temp, 100m (328ft) A.S.L. 30% relative humidity. Fuel consumption data at full load with diesel fuel with specific gravity of 0.85 and conforming to BS2869: 1998, Class A2.

## General Data

### Documents

A full set of operation and maintenance manuals and circuit wiring diagrams.

### Quality Standards

The equipment meets the following standards: IEC60034-1, IEC60034-22, ISO3046, ISO8528, NEMA MG 1-32, NEMA MG 1-33, 2004/108/EC, 2006/42/EC, 2006/95/EC.