

# DIESEL GENERATOR SET



## DE88E3

EU stage IIIA emissions compliant.  
Suitable for Mobile Applications in the European Community.

Image shown may not reflect actual package

Output Ratings		
Generator Set Model - 3 Phase	Prime*	Standby*
400/230 V, 50 Hz	80.0 kVA 64.0 kW	88.0 kVA 70.4 kW
	-	-
	-	-

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

Technical Data		
Engine Make & Model:	Cat® C4.4	
Generator Model:	LC3114D	
Control Panel:	EMCP 4.1	
Base Frame Type:	Heavy Duty Fabricated Steel	
Circuit Breaker Type:	3 Pole MCCB	
Frequency:	50 Hz	60 Hz
Engine Speed: RPM	1500	-
Fuel Tank Capacity: litres (US gal)	250 (66.0)	
Fuel Consumption, Prime: l/hr (US gal/hr)	20.1 (5.3)	-
Fuel Consumption, Standby : l/hr (US gal/hr)	21.5 (5.7)	-

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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>	C4.4	<b>Total Oil Capacity I (US gal):</b>	8.0 (2.1)
<b>No. of Cylinders/Alignment:</b>	4 / In Line	<b>Oil Pan I (US gal):</b>	7.0 (1.8)
<b>Cycle:</b>	4 Stroke	<b>Oil Type:</b>	API CC/SE 15W-40
<b>Induction:</b>	Turbocharged Air To Air Charge Cooled	<b>Cooling Method:</b>	Water
<b>Cooling Method:</b>	Water	<b>Performance</b>	
<b>Governing Type:</b>	Electronic	<b>50 Hz</b>	<b>60 Hz</b>
<b>Governing Class:</b>	ISO 8528 G2	<b>Engine Speed: RPM</b>	1500 -
<b>Compression Ratio:</b>	16.2:1	<b>Gross Engine Power: kW (hp)</b>	
<b>Displacement: I (cu.in)</b>	4.4 (268.5)	-Standby:	84.2 (113.0) -
<b>Bore/Stroke: mm (in)</b>	105.0 (4.1)/127.0 (5.0)	-Prime:	76.6 (103.0) -
<b>Moment of Inertia: kg m<sup>2</sup> (lb. in<sup>2</sup>)</b>	1.31 (4476)	<b>BMEP: kPa (psi)</b>	
<b>Engine Electrical System:</b>		-Standby:	1531.0 (222.1) -
-Voltage/Ground:	12/Negative	-Prime:	1393.0 (202.1) -
-Battery Charger Amps:	65	<b>Regenerative Power: kW</b>	0.0 -
<b>Weight: kg (lb) - Dry:</b>	465 (1025)	<b>Fuel System</b>	
- Wet:	474 (1045)	<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>Prime</b>	
		50 Hz	21.5 (5.7) 20.1 (5.3) 15.9 (4.2) 11.1 (2.9)
		60 Hz	- - - -
		<b>Standby</b>	
		50 Hz	21.5 (5.7) 17.2 (4.5) 12.1 (3.2)
		60 Hz	- - - -
		(based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2)	
<b>Air System</b>	<b>50 Hz</b>	<b>60 Hz</b>	
<b>Air Filter Type:</b>	Paper Element		
<b>Combustion Air Flow:</b>			
m <sup>3</sup> /min (cfm)	-Standby: 6.0 (213)	-	
	-Prime: 5.7 (201)	-	
<b>Max. Combustion Air Intake</b>			
<b>Restriction: kPa (in H<sub>2</sub>O)</b>	8.0 (32.1)	-	
<b>Radiator Cooling Air Flow:</b>			
m <sup>3</sup> /min (cfm)	197.4 (6971)	-	
<b>External Restriction to</b>			
<b>Cooling Air Flow: Pa (in H<sub>2</sub>O)</b>	125 (0.5)	-	
<b>Cooling System</b>	<b>50 Hz</b>	<b>60 Hz</b>	
<b>Cooling System Capacity:</b>			
I (US gal)	17.5 (4.6)	-	
<b>Water Pump Type:</b>	Centrifugal		
<b>Heat Rejected to Water &amp; Lube Oil: kW (Btu/min)</b>			
-Standby:	55.4 (3151)	-	
-Prime:	50.3 (2861)	-	
<b>Heat Radiation to Room: Heat radiated from engine and alternator</b>			
kW (Btu/min)	-Standby: 22.8 (1297)	-	
	-Prime: 20.6 (1172)	-	
<b>Radiator Fan Load: kW (hp)</b>	2.8 (3.8)	-	
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>	1.60 (0.472) -
		<b>Silencer Noise Reduction</b>	
		<b>Level: dB</b>	21 -
		<b>Max. Allowable Back</b>	
		<b>Pressure: kPa (in. Hg)</b>	15.0 (4.4) -
		<b>Exhaust Gas Flow:</b>	
		m <sup>3</sup> /min (cfm)	-Standby: 14.8 (523) -
			-Prime: 13.8 (487) -
		<b>Exhaust Gas Temperature: °C (°F)</b>	
		-Standby:	492 (918) -
		-Prime:	470 (878) -

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## Generator Performance Data

Data Item	50 Hz				60 Hz				
	415/240V	400/230V	380/220V						
Motor Starting Capability* kVA	196	184	168	-	-	-	-	-	-
Short Circuit Capacity** %	300	300	300	-	-	-	-	-	-
Reactances: Per Unit									
Xd	2.535	2.728	3.023	-	-	-	-	-	-
X'd	0.110	0.118	0.131	-	-	-	-	-	-
X''d	0.066	0.071	0.078	-	-	-	-	-	-

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:	LC3114D
No. of Bearings:	1
Insulation Class:	H
Winding Pitch - Code:	2/3 - 6
Wires:	12
Ingress Protection Rating:	IP23
Excitation System:	SHUNT
AVR Model:	R250

Operating Data	
Overspeed: RPM	2250
Voltage Regulation: (steady state)	+/- 0.5%
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:	6.7 (381)
-60 Hz:	-

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## Technical Data

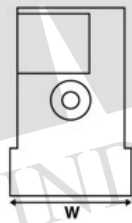
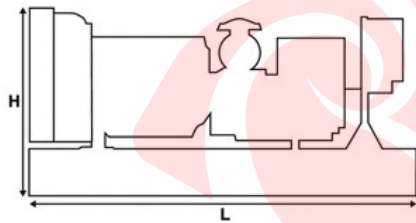
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
415/240V	80.0	64.0	88.0	70.4
400/230V	80.0	64.0	88.0	70.4
380/220V	80.0	64.0	88.0	70.4

Voltage 60 Hz	Prime		Standby	
	kVA	kW	kVA	kW

## Weights & Dimensions

Weights: kg (lb)	
Net (+ lube oil)	1111 (2450)
Wet (+ lube oil & coolant)	1129 (2489)
Fuel, lube oil & coolant	1340 (2954)

Dimensions: mm (in)	
Length	2089 (82.2)
Width	1120 (44.1)
Height	1400 (55.1)



**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.