

# DIESEL GENERATOR SET



## DE9.5E3 (EUR1) (B Series)

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	8.5 kVA 6.8 kW	9.5 kVA 7.6 kW
220/127V, 60 Hz	10.0 kVA 8.0 kW	11.0 kVA 8.8 kW

\* Refer to ratings definitions on page 4.  
Ratings at 0.8 power factor.

Technical Data		
Engine Make & Model:	Cat® C1.1	
Generator Model:	LC1114D	
Control Panel:	TCP 1000	
Base Frame Type:	Heavy Duty Fabricated Steel	
Circuit Breaker Type:	3 Pole MCB	
Frequency:	50 Hz	60 Hz
Engine Speed: RPM	1500	1800
Fuel Consumption, Prime: l/hr (US gal/hr)	2.5 (0.7)	2.9 (0.8)
Fuel Consumption, Standby : l/hr (US gal/hr)	2.8 (0.7)	3.3 (0.9)

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## Engine Technical Data

Physical Data	
<b>Manufacturer:</b>	Caterpillar
<b>Model:</b>	C1.1
<b>No. of Cylinders/Alignment:</b>	3 / In Line
<b>Cycle:</b>	4 Stroke
<b>Induction:</b>	Naturally Aspirated
<b>Cooling Method:</b>	Water
<b>Governing Type:</b>	Mechanical
<b>Governing Class:</b>	ISO 8528
<b>Compression Ratio:</b>	23:1
<b>Displacement: l (cu.in)</b>	1.1 (69.0)
<b>Bore/Stroke: mm (in)</b>	77.0 (3.0)/81.0 (3.2)
<b>Moment of Inertia: kg m<sup>2</sup> (lb. in<sup>2</sup>)</b>	1.63 (5570)
<b>Engine Electrical System:</b>	
-Voltage/Ground:	12/Negative
-Battery Charger Amps:	40
<b>Weight: kg (lb) - Dry:</b>	129 (284)
- Wet:	139 (306)

Air System	50 Hz	60 Hz
<b>Air Filter Type:</b>	Replaceable Element	
<b>Combustion Air Flow:</b>		
m <sup>3</sup> /min (cfm)		
-Standby:	0.7 (25)	0.9 (32)
-Prime:	0.7 (25)	0.9 (32)
<b>Max. Combustion Air Intake</b>		
<b>Restriction: kPa (in H<sub>2</sub>O)</b>	6.4 (25.7)	6.4 (25.7)
<b>Radiator Cooling Air Flow:</b>		
m <sup>3</sup> /min (cfm)	24.0 (848)	32.7 (1155)
<b>External Restriction to</b>		
<b>Cooling Air Flow: Pa (in H<sub>2</sub>O)</b>	125 (0.5)	125 (0.5)

Cooling System	50 Hz	60 Hz
<b>Cooling System Capacity:</b>		
l (US gal)	5.2 (1.4)	5.2 (1.4)
<b>Water Pump Type:</b>	Centrifugal	
<b>Heat Rejected to Water &amp; Lube Oil: kW (Btu/min)</b>		
-Standby:	9.5 (540)	12.0 (682)
-Prime:	8.3 (472)	10.0 (569)
<b>Heat Radiation to Room:</b> Heat radiated from engine and alternator		
kW (Btu/min)		
-Standby:	4.2 (239)	4.9 (279)
-Prime:	3.2 (182)	4.2 (239)
<b>Radiator Fan Load: kW (hp)</b>	0.2 (0.3)	0.4 (0.5)
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.		

Lubrication System	
<b>Oil Filter Type:</b>	Spin-On, Full Flow
<b>Total Oil Capacity l (US gal):</b>	4.9 (1.3)
<b>Oil Pan l (US gal):</b>	4.4 (1.2)
<b>Oil Type:</b>	API CH4 15W-40
<b>Cooling Method:</b>	N/A

Performance	50 Hz	60 Hz
<b>Engine Speed: RPM</b>	1500	1800
<b>Gross Engine Power: kW (hp)</b>		
-Standby:	9.5 (13.0)	11.8 (16.0)
-Prime:	8.6 (12.0)	10.7 (14.0)
<b>BMEP: kPa (psi)</b>		
-Standby:	672.0 (97.4)	695.0 (100.8)
-Prime:	610.0 (88.5)	630.0 (91.4)
<b>Regenerative Power: kW</b>	3.5	3.9

Fuel System				
<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	2.8 (0.7)	2.5 (0.7)	2.0 (0.5)	1.5 (0.4)
60 Hz	3.3 (0.9)	2.9 (0.8)	2.2 (0.6)	1.8 (0.5)
<b>Standby</b>				
50 Hz		2.8 (0.7)	2.1 (0.6)	1.6 (0.4)
60 Hz		3.3 (0.9)	2.4 (0.6)	1.8 (0.5)
(based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2)				

Exhaust System	50 Hz	60 Hz
<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>	0.43 (0.127)	0.80 (0.236)
<b>Silencer Noise Reduction</b>		
<b>Level: dB</b>	20.5	10
<b>Max. Allowable Back</b>		
<b>Pressure: kPa (in. Hg)</b>	10.2 (3.0)	10.2 (3.0)
<b>Exhaust Gas Flow:</b>		
m <sup>3</sup> /min (cfm)		
-Standby:	1.8 (64)	2.4 (85)
-Prime:	1.7 (59)	2.2 (78)
<b>Exhaust Gas Temperature: °C (°F)</b>		
-Standby:	420 (788)	515 (959)
-Prime:	368 (694)	437 (819)

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## Generator Performance Data

Data Item	50 Hz				60 Hz				
	415/240V	400/230V	380/220V						220/127V
Motor Starting Capability* kVA	28	27	25						27
Reactances: Per Unit									
Xd	1.318	1.418	1.572						1.655
X'd	0.136	0.147	0.162						0.171
X''d	0.068	0.073	0.081						0.086

Reactances shown are applicable to prime ratings.  
\*Based on 30% voltage dip at 0.6 power factor.

## Generator Technical Data

Physical Data	
LC Frame	
Model:	LC1114D
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:	4.0%
Radio Interference:	Suppression is in line with European Standard EN61000-6
Radiant Heat: kW (Btu/min)	
-50 Hz:	1.7 (97)
-60 Hz:	1.8 (102)

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## Technical Data

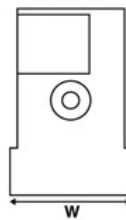
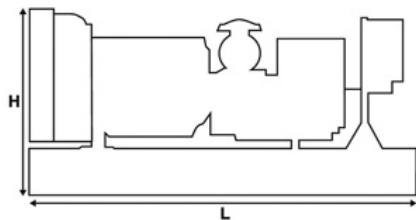
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
415/240V	8.5	6.8	9.5	7.6
400/230V	8.5	6.8	9.5	7.6
380/220V	8.5	6.8	9.5	7.6

Voltage 60 Hz	Prime		Standby	
	kVA	kW	kVA	kW
220/127V	10.0	8.0	11.0	8.8

## Weights & Dimensions

Weights: kg (lb)	
Net (+ lube oil)	237 (523)
Wet (+ lube oil & coolant)	242 (534)

Dimensions: mm (in)	
Length	1500 (59.1)
Width	860 (33.9)
Height	895 (35.2)



**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.**