

# DIESEL GENERATOR SET



## DE40E2S

EU stage II emissions compliant.

Image shown may not reflect actual package

Output Ratings		
Generator Set Model - 1 Phase	Prime*	Standby*
230V, 50Hz	36.0 kVA 36.0 kW	40.0 kVA 40.0 kW
	-	-
	-	-

\* Refer to ratings definitions on page 4.  
Ratings at 1.0 power factor.

Technical Data		
Engine Make & Model:	Cat® C3.3	
Generator Model:	LCB1514P	
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)	219 (57.9)	
Fuel Consumption, Prime: l/hr (US gal/hr)	10.2 (2.7)	-
Fuel Consumption, Standby : l/hr (US gal/hr)	11.3 (3.0)	-



# DIESEL GENERATOR SET

## 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</b> l (US gal):	8.3 (2.2)
<b>No. of Cylinders/Alignment:</b>	3 / In Line	<b>Oil Pan</b> l (US gal):	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>Governing Type:</b>	Mechanical		
<b>Governing Class:</b>	ISO 8528 G2		
<b>Compression Ratio:</b>	18.23:1		
<b>Displacement:</b> l (cu.in)	3.3 (201.4)		
<b>Bore/Stroke:</b> mm (in)	105.0 (4.1)/127.0 (5.0)		
<b>Moment of Inertia:</b> kg m <sup>2</sup> (lb. in <sup>2</sup> )	1.14 (3896)		
<b>Engine Electrical System:</b>			
-Voltage/Ground:	12/Negative		
-Battery Charger Amps:	65		
<b>Weight:</b> kg (lb) - Dry:	341 (752)		
- Wet:	348 (767)		
Air System		Performance	
		50 Hz	60 Hz
<b>Air Filter Type:</b>	Replaceable Element	<b>Engine Speed:</b> RPM	1500 -
<b>Combustion Air Flow:</b>		<b>Gross Engine Power:</b> kW (hp)	
m <sup>3</sup> /min (cfm)	-Standby: 4.4 (156) -	-Standby:	46.5 (62.0) -
	-Prime: 4.3 (153) -	-Prime:	41.9 (56.0) -
<b>Max. Combustion Air Intake</b>		<b>BMEP:</b> kPa (psi)	
<b>Restriction:</b> kPa (in H <sub>2</sub> O)	8.0 (32.1) -	-Standby:	1127.0 (163.5) -
<b>Radiator Cooling Air Flow:</b>		-Prime:	1016.0 (147.4) -
m <sup>3</sup> /min (cfm)	97.8 (3454) -	<b>Regenerative Power:</b> kW	0.0 -
<b>External Restriction to</b>			
<b>Cooling Air Flow:</b> Pa (in H <sub>2</sub> O)	125 (0.5) -		
Cooling System		Fuel System	
		50 Hz	60 Hz
<b>Cooling System Capacity:</b>		<b>Fuel Filter Type:</b>	Replaceable Element
l (US gal)	12.6 (3.3) -	<b>Recommended Fuel:</b>	Class A2 Diesel or BSEN590
<b>Water Pump Type:</b>	Centrifugal	<b>Fuel Consumption:</b> l/hr (US gal/hr)	
<b>Heat Rejected to Water &amp; Lube Oil:</b> kW (Btu/min)			
-Standby:	42.0 (2388) -	110% Load	100% Load
-Prime:	38.0 (2161) -	75% Load	50% Load
<b>Heat Radiation to Room:</b> Heat radiated from engine and alternator		<b>Prime</b>	
kW (Btu/min)	-Standby: 17.0 (967) -	50 Hz	11.3 (3.0) 10.2 (2.7) 7.7 (2.0) 5.5 (1.5)
	-Prime: 13.0 (739) -	60 Hz	- - - -
<b>Radiator Fan Load:</b> kW (hp)	1.0 (1.3) -	<b>Standby</b>	
		50 Hz	11.3 (3.0) 8.5 (2.2) 6.0 (1.6)
		60 Hz	- - - -
		(based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2)	
Exhaust System		Exhaust System	
		50 Hz	60 Hz
<b>Silencer Type:</b>	Industrial	<b>Silencer Type:</b>	Industrial
<b>Silencer Model &amp; Quantity:</b>	EXSY1 (1)	<b>Silencer Model &amp; Quantity:</b>	EXSY1 (1)
<b>Pressure Drop Across</b>		<b>Pressure Drop Across</b>	
<b>Silencer System:</b> kPa (in Hg)	1.14 (0.337) -	<b>Silencer System:</b> kPa (in Hg)	1.14 (0.337) -
<b>Silencer Noise Reduction</b>		<b>Silencer Noise Reduction</b>	
<b>Level:</b> dB	15 -	<b>Level:</b> dB	15 -
<b>Max. Allowable Back</b>		<b>Max. Allowable Back</b>	
<b>Pressure:</b> kPa (in. Hg)	12.0 (3.5) -	<b>Pressure:</b> kPa (in. Hg)	12.0 (3.5) -
<b>Exhaust Gas Flow:</b>		<b>Exhaust Gas Flow:</b>	
m <sup>3</sup> /min (cfm)	-Standby: 7.0 (247) -	m <sup>3</sup> /min (cfm)	-Standby: 7.0 (247) -
	-Prime: 6.0 (212) -		-Prime: 6.0 (212) -
<b>Exhaust Gas Temperature:</b> °C (°F)		<b>Exhaust Gas Temperature:</b> °C (°F)	
-Standby:	581 (1078) -	-Standby:	581 (1078) -
-Prime:	542 (1008) -	-Prime:	542 (1008) -

# DIESEL GENERATOR SET



## Generator Performance Data

Data Item	50 Hz				60 Hz				
	240V	230V	220V						
Motor Starting Capability* kVA	88	85	81	-	-	-	-	-	-
Short Circuit Capacity %	-	-	-	-	-	-	-	-	-
Reactances: Per Unit									
Xd	1.614	1.757	1.920	-	-	-	-	-	-
X'd	0.163	0.177	0.193	-	-	-	-	-	-
X''d	0.081	0.088	0.097	-	-	-	-	-	-

Reactances shown are applicable to prime ratings.

\*Based on 30% voltage dip at 0.9 power factor and SHUNT excitation system.

## Generator Technical Data

Physical Data	
LC Series	
Model:	LCB1514P
No. of Bearings:	1
Insulation Class:	H
Winding Pitch - Code:	2/3 - M
Wires:	4
Ingress Protection Rating:	IP23
Excitation System:	SHUNT
AVR Model:	R220/R221

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:	4.0 (227)
-60 Hz:	-

# DIESEL GENERATOR SET



## Technical Data

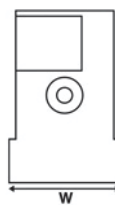
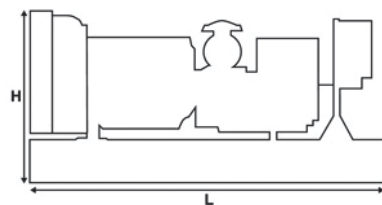
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
240V	36.0	36.0	40.0	40.0
230V	36.0	36.0	40.0	40.0
220V	36.0	36.0	40.0	40.0

Voltage 60 Hz	Prime		Standby	
	kVA	kW	kVA	kW

## Weights & Dimensions

Weights: kg (lb)	
Net (+ lube oil)	866 (1909)
Wet (+ lube oil & coolant)	879 (1938)
Fuel, lube oil & coolant	1064 (2347)

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.**

Performance No.: P3348A, P2574A

Feature Code: C03DE47, C03DE81, C03DE48, C03DE82

Gen. Arr. Number: 459-4409

Source: European or China Sourced

LEHE0692-00 (08/14)

www.Cat-ElectricPower.com

© 2014 Caterpillar  
All rights reserved.

Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, "Caterpillar Yellow," the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.