

# DIESEL GENERATOR SET



## DE220E0

Image shown may not reflect actual package

Output Ratings		
Generator Set Model - 3 Phase	Prime*	Standby*
400/230 V, 50 Hz	200.0 kVA 160.0 kW	218.0 kVA 174.4 kW
	-	-
	-	-

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

Technical Data		
Engine Make & Model:	Cat® C7.1	
Generator Model:	LC5014F	
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)	418 (110.4)	
Fuel Consumption, Prime: l/hr (US gal/hr)	45.4 (12.0)	-
Fuel Consumption, Standby : l/hr (US gal/hr)	49.5 (13.1)	-



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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>	C7.1	<b>Total Oil Capacity I (US gal):</b>	16.5 (4.4)
<b>No. of Cylinders/Alignment:</b>	6 / In Line	<b>Oil Pan I (US gal):</b>	14.9 (3.9)
<b>Cycle:</b>	4 Stroke	<b>Oil Type:</b>	API CI4 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>	16.0:1	<b>Gross Engine Power: kW (hp)</b>	
<b>Displacement: I (cu.in)</b>	7.0 (427.8)	-Standby:	196.3 (263.0) -
<b>Bore/Stroke: mm (in)</b>	105.0 (4.1)/135.0 (5.3)	-Prime:	178.9 (240.0) -
<b>Moment of Inertia: kg m<sup>2</sup> (lb. in<sup>2</sup>)</b>	1.26 (4306)	<b>BMEP: kPa (psi)</b>	
<b>Engine Electrical System:</b>		-Standby:	2239.0 (324.7) -
-Voltage/Ground:	12/Negative	-Prime:	2041.0 (296.0) -
-Battery Charger Amps:	85	<b>Regenerative Power: kW</b>	9.3 -
<b>Weight: kg (lb) - Dry:</b>	788 (1737)	<b>Fuel System</b>	
- Wet:	822 (1812)	<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	49.5 (13.1) 45.4 (12.0) 34.7 (9.2) 23.4 (6.2)
		60 Hz	- - - -
		<b>Standby</b>	
		50 Hz	49.5 (13.1) 38.0 (10.0) 25.7 (6.8)
		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:	13.2 (466)	-
	-Prime:	12.6 (445)	-
<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)	307.2 (10849)	-	-
<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)	27.0 (7.1)	-	-
<b>Water Pump Type:</b>	Centrifugal		
<b>Heat Rejected to Water &amp; Lube Oil: kW (Btu/min)</b>			
-Standby:	81.0 (4606)	-	-
-Prime:	78.2 (4447)	-	-
<b>Heat Radiation to Room:</b> Heat radiated from engine and alternator			
kW (Btu/min)	-Standby:	28.3 (1609)	-
	-Prime:	26.0 (1479)	-
<b>Radiator Fan Load: kW (hp)</b>	6.3 (8.5)	-	-
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.			
<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>	3.50 (1.034)	-	-
<b>Silencer Noise Reduction</b>			
<b>Level: dB</b>	10	-	-
<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:	36.8 (1300)	-
	-Prime:	34.9 (1232)	-
<b>Exhaust Gas Temperature: °C (°F)</b>			
-Standby:	580 (1076)	-	-
-Prime:	527 (981)	-	-

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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					
Motor Starting Capability* kVA	414	389	356	457	-	-	-	-	-
Short Circuit Capacity** %	300	300	300	300	-	-	-	-	-
Reactances: Per Unit									
Xd	2.794	3.008	3.330	2.237	-	-	-	-	-
X'd	0.137	0.148	0.163	0.110	-	-	-	-	-
X''d	0.082	0.089	0.098	0.066	-	-	-	-	-

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:	LC5014F
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:	4.0%
Radio Interference:	Suppression is in line with European Standard EN61000-6
Radiant Heat: kW (Btu/min)	
-50 Hz:	15.1 (859)
-60 Hz:	-

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## Technical Data

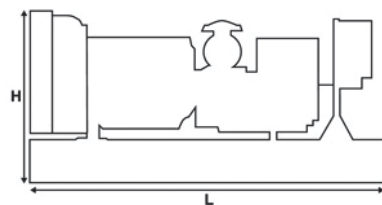
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
415/240V	200.0	160.0	220.0	176.0
400/230V	200.0	160.0	218.0	174.4
380/220V	200.0	160.0	219.8	175.8
230/115V	200.0	160.0	218.0	174.4
220/127V	180.0	144.0	200.0	160.0
220/110V	200.0	160.0	219.8	175.8
200/115V	200.0	160.0	218.0	174.4

Voltage 60 Hz	Prime		Standby	
	kVA	kW	kVA	kW

## Weights & Dimensions

Weights: kg (lb)	
Net (+ lube oil)	1731 (3816)
Wet (+ lube oil & coolant)	1758 (3876)
Fuel, lube oil & coolant	2112 (4656)

Dimensions: mm (in)	
Length	2500 (98.4)
Width	1320 (52.0)
Height	1626 (64.0)



**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.: P3692B  
 Feature Code: C07DE12, C07DE16  
 Gen. Arr. Number: 459-4435, 459-4436, 459-4437  
 Source: European or China Sourced  
 LEHE0712-00 (08/14)

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