

# 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:	® 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		50 Hz		60 Hz	
Manufacturer:	Caterpillar				
Model:	C7.1				
No. of Cylinders/Alignment:	6 / In Line				
Cycle:	4 Stroke				
Induction:	Turbocharged Air To Air Charge Cooled				
Cooling Method:	Water				
Governing Type:	Electronic				
Governing Class:	ISO 8528 G2				
Compression Ratio:	16.0:1				
Displacement: l (cu.in)	7.0 (427.8)				
Bore/Stroke: mm (in)	105.0 (4.1)/135.0 (5.3)				
Moment of Inertia: kg m <sup>2</sup> (lb. in <sup>2</sup> )	1.26 (4306)				
Engine Electrical System:					
-Voltage/Ground:	12/Negative				
-Battery Charger Amps:	85				
Weight: kg (lb) - Dry:	788 (1737)				
- Wet:	822 (1812)				

Air System		50 Hz		60 Hz	
Air Filter Type:	Paper Element				
Combustion Air Flow:					
m <sup>3</sup> /min (cfm)	-Standby:	13.2 (466)	-		
	-Prime:	12.6 (445)	-		
Max. Combustion Air Intake Restriction: kPa (in H <sub>2</sub> O)		8.0 (32.1)	-		
Radiator Cooling Air Flow:					
m <sup>3</sup> /min (cfm)		307.2 (10849)	-		
External Restriction to Cooling Air Flow: Pa (in H <sub>2</sub> O)		125 (0.5)	-		

Cooling System		50 Hz		60 Hz	
Cooling System Capacity:					
l (US gal)		27.0 (7.1)	-		
Water Pump Type:	Centrifugal				
Heat Rejected to Water & Lube Oil: kW (Btu/min)					
	-Standby:	81.0 (4606)	-		
	-Prime:	78.2 (4447)	-		
Heat Radiation to Room: Heat radiated from engine and alternator					
kW (Btu/min)	-Standby:	28.3 (1609)	-		
	-Prime:	26.0 (1479)	-		
Radiator Fan Load: kW (hp)		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.					

Lubrication System		50 Hz		60 Hz	
Oil Filter Type:	Spin-On, Full Flow				
Total Oil Capacity l (US gal):	16.5 (4.4)				
Oil Pan l (US gal):	14.9 (3.9)				
Oil Type:	API CI4 15W-40				
Cooling Method:	Water				

Performance		50 Hz		60 Hz	
Engine Speed: RPM	1500				
Gross Engine Power: kW (hp)					
	-Standby:	196.3 (263.0)	-		
	-Prime:	178.9 (240.0)	-		
BMEP: kPa (psi)					
	-Standby:	2239.0 (324.7)	-		
	-Prime:	2041.0 (296.0)	-		
Regenerative Power: kW	9.3				

Fuel System		50 Hz		60 Hz	
Fuel Filter Type:	Replaceable Element				
Recommended Fuel:	Class A2 Diesel or BSEN590				
Fuel Consumption: l/hr (US gal/hr)					
		110% Load	100% Load	75% Load	50% Load
Prime					
50 Hz	49.5 (13.1)	45.4 (12.0)	34.7 (9.2)	23.4 (6.2)	
60 Hz	-	-	-	-	
Standby					
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)					

Exhaust System		50 Hz		60 Hz	
Silencer Type:	Industrial				
Silencer Model & Quantity:	EXSY1 (1)				
Pressure Drop Across Silencer System: kPa (in Hg)		3.50 (1.034)	-		
Silencer Noise Reduction Level: dB		10	-		
Max. Allowable Back Pressure: kPa (in. Hg)		15.0 (4.4)	-		
Exhaust Gas Flow:					
m <sup>3</sup> /min (cfm)	-Standby:	36.8 (1300)	-		
	-Prime:	34.9 (1232)	-		
Exhaust Gas Temperature: °C (°F)					
	-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	
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

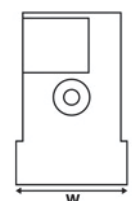
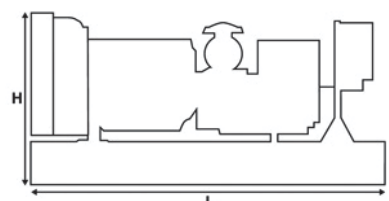
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
415/240V	200.0	160.0	220.0	176.0
400/230V	200.0	160.0	218.0	174.4
380/220V	200.0	160.0	219.8	175.8
230/115V	200.0	160.0	218.0	174.4
220/127V	180.0	144.0	200.0	160.0
220/110V	200.0	160.0	219.8	175.8
200/115V	200.0	160.0	218.0	174.4

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

! " # \$ & " " " \$ + # " " \$ ; ! < ! ! < # " = " \$

### 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.: > ?@ J  
 Feature Code: K ; K ?  
 Gen. Arr. Number: Q=@ QQ =; Q=@ QQ ?; Q=@ QQ  
 Z # [ Z #  
 (OV Q)