

DIESEL GENERATOR SET



DE50E0

Image shown may not reflect actual package

Output Ratings		
Generator Set Model - 3 Phase	Prime*	Standby*
400/230 V, 50 Hz	45.0 kVA 36.0 kW	50.0 kVA 40.0 kW
480V, 60 Hz	50.0 kVA 40.0 kW	56.3 kVA 45.0 kW

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

Technical Data		
Engine Make & Model:	Cat® C3.3	
Generator Model:	LC1514L	
Control Panel:	EMCP 4.1	
Base Frame Type:	Heavy Duty Fabricated Steel	
Circuit Breaker Type:	3 Pole MCB / 3 Pole MCCB	
Frequency:	50 Hz	60 Hz
Engine Speed: RPM	1500	1800
Fuel Tank Capacity: litres (US gal)	219 (57.9)	
Fuel Consumption, Prime: l/hr (US gal/hr)	10.5 (2.8)	11.7 (3.1)
Fuel Consumption, Standby : l/hr (US gal/hr)	11.7 (3.1)	12.9 (3.4)

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Engine Technical Data

Physical Data		Lubrication System	
Manufacturer:	Caterpillar	Oil Filter Type:	Spin-On, Full Flow
Model:	C3.3	Total Oil Capacity I (US gal):	8.3 (2.2)
No. of Cylinders/Alignment:	3 / In Line	Oil Pan I (US gal):	7.8 (2.1)
Cycle:	4 Stroke	Oil Type:	API CG4 / CH4 15W-40
Induction:	Turbocharged	Cooling Method:	Water
Cooling Method:	Water	Performance	
Governing Type:	Mechanical	50 Hz	60 Hz
Governing Class:	ISO 8528 G2	Engine Speed: RPM	1500 1800
Compression Ratio:	17.25:1	Gross Engine Power: kW (hp)	
Displacement: I (cu.in)	3.3 (201.4)	-Standby:	46.5 (62.0) 55.6 (75.0)
Bore/Stroke: mm (in)	105.0 (4.1)/127.0 (5.0)	-Prime:	42.2 (57.0) 50.5 (68.0)
Moment of Inertia: kg m² (lb. in²)	1.14 (3896)	BMEP: kPa (psi)	
Engine Electrical System:		-Standby:	1127.0 (163.5) 1124.0 (163.0)
-Voltage/Ground:	12/Negative	-Prime:	1023.0 (148.4) 1020.0 (148.0)
-Battery Charger Amps:	65	Regenerative Power: kW	7.0 9.0
Weight: kg (lb) - Dry:	420 (926)	Fuel System	
- Wet:	438 (966)	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
		Air System	50 Hz 60 Hz
		Air Filter Type:	Replaceable Element
		Combustion Air Flow:	
		m ³ /min (cfm) -Standby:	3.1 (109) 3.9 (138)
		-Prime:	2.9 (102) 3.7 (131)
		Max. Combustion Air Intake	
		Restriction: kPa (in H₂O)	8.0 (32.1) 8.0 (32.1)
		Radiator Cooling Air Flow:	
		m ³ /min (cfm)	86.4 (3051) 105.6 (3729)
		External Restriction to	
		Cooling Air Flow: Pa (in H₂O)	120 (0.5) 120 (0.5)
		Cooling System	50 Hz 60 Hz
		Cooling System Capacity:	
		I (US gal)	10.2 (2.7) 10.2 (2.7)
		Water Pump Type:	Centrifugal
		Heat Rejected to Water &	
		Lube Oil: kW (Btu/min)	
		-Standby:	30.0 (1706) 34.0 (1934)
		-Prime:	26.1 (1484) 31.0 (1763)
		Heat Radiation to Room: Heat radiated from engine and alternator	
		kW (Btu/min) -Standby:	13.2 (751) 14.4 (819)
		-Prime:	11.4 (648) 12.6 (717)
		Radiator Fan Load: kW (hp)	0.5 (0.7) 0.9 (1.2)
		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.	
		Exhaust System	50 Hz 60 Hz
		Silencer Type:	Industrial
		Silencer Model & Quantity:	EXSY1 (1)
		Pressure Drop Across	
		Silencer System: kPa (in Hg)	0.82 (0.242) 1.08 (0.319)
		Silencer Noise Reduction	
		Level: dB	20 18
		Max. Allowable Back	
		Pressure: kPa (in. Hg)	10.0 (3.0) 15.0 (4.4)
		Exhaust Gas Flow:	
		m ³ /min (cfm) -Standby:	7.7 (272) 9.5 (335)
		-Prime:	7.0 (247) 8.8 (311)
		Exhaust Gas Temperature: °C (°F)	
		-Standby:	537 (999) 551 (1024)
		-Prime:	492 (918) 510 (950)

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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	480/277V 240/139V	380/220V 220/110V	240/120V 208/120V		440/254V 220/127V
Motor Starting Capability* kVA	109	104	96	118	118	84	96	-	104
Short Circuit Capacity** %	300	300	300	300	300	300	300	-	300
Reactances: Per Unit									
Xd	2.583	2.780	3.080	1.991	2.574	3.778	3.427	-	3.063
X'd	0.140	0.150	0.166	0.108	0.139	0.204	0.185	-	0.165
X''d	0.070	0.075	0.083	0.054	0.070	0.102	0.093	-	0.083

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:	LC1514L
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:	2.0%
Radio Interference:	Suppression is in line with European Standard EN61000-6
Radiant Heat: kW (Btu/min)	
-50 Hz:	5.2 (296)
-60 Hz:	5.4 (307)

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Technical Data

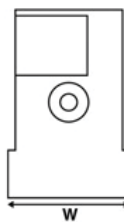
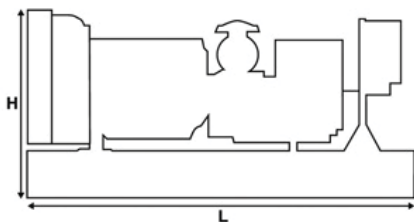
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
415/240V	45.0	36.0	50.0	40.0
400/230V	45.0	36.0	50.0	40.0
380/220V	45.0	36.0	50.0	40.0
230/115V	45.0	36.0	50.0	40.0
220/127V	39.0	31.2	42.9	34.3
220/110V	45.0	36.0	50.0	40.0
200/115V	45.0	36.0	50.0	40.0

Voltage 60 Hz	Prime		Standby	
	kVA	kW	kVA	kW
480/277V	50.0	40.0	56.3	45.0
220/127V	50.0	40.0	56.3	45.0
380/220V	46.0	36.8	50.6	40.5
240/120V	50.0	40.0	55.0	44.0
440/254V	50.0	40.0	56.3	45.0
220/110V	46.0	36.8	50.6	40.5
208/120V	50.0	40.0	56.3	45.0
240/139V	50.0	40.0	55.0	44.0

Weights & Dimensions

Weights: kg (lb)	
Net (+ lube oil)	858 (1891)
Wet (+ lube oil & coolant)	871 (1920)
Fuel, lube oil & coolant	1056 (2329)

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.