

Engine Make & Model:

DIESEL GENERATOR SET



Engine Technical Data

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

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

Cooling System	50 Hz	60 Hz
Cooling System Capacity:		
l (US gal)	5.2 (1.4)	5.2 (1.4)
Water Pump Type:	Centrifugal	
Heat Rejected to Water & Lube Oil: kW (Btu/min)		
-Standby:	9.5 (540)	12.0 (682)
-Prime:	8.3 (472)	10.0 (569)
Heat Radiation to Room: Heat radiated from engine and alternator		
kW (Btu/min)	-Standby: 4.2 (239)	4.9 (279)
	-Prime: 3.2 (182)	4.2 (239)
Radiator Fan Load: kW (hp)	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	
Oil Filter Type:	Spin-On, Full Flow
Total Oil Capacity l (US gal):	4.9 (1.3)
Oil Pan l (US gal):	4.4 (1.2)
Oil Type:	API CH4 15W-40
Cooling Method:	N/A

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

Fuel System				
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	2.9 (0.8)	2.6 (0.7)	2.0 (0.5)	1.5 (0.4)
60 Hz	3.4 (0.9)	3.0 (0.8)	2.2 (0.6)	1.8 (0.5)
Standby				
50 Hz		2.9 (0.8)	2.1 (0.6)	1.6 (0.4)
60 Hz		3.4 (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
Silencer Type:	Industrial	
Silencer Model & Quantity:	EXSY1 (1)	
Pressure Drop Across		
Silencer System: kPa (in Hg)	0.43 (0.127)	0.80 (0.236)
Silencer Noise Reduction		
Level: dB	20.5	10
Max. Allowable Back		
Pressure: kPa (in. Hg)	10.2 (3.0)	10.2 (3.0)
Exhaust Gas Flow:		
m ³ /min (cfm)	-Standby: 1.8 (64)	2.4 (85)
	-Prime: 1.7 (59)	2.2 (78)
Exhaust Gas Temperature: °C (°F)		
-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	20	19	18	-	-	-	-	-	20
Short Circuit Capacity %	-	-	-	-	-	-	-	-	-
Reactances: Per Unit									
Xd	1.650	1.777	1.968	-	-	-	-	-	2.073
X'd	0.193	0.207	0.230	-	-	-	-	-	0.242
X''d	0.096	0.104	0.115	-	-	-	-	-	0.121

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

Generator Technical Data

Physical Data	
Model:	LC1114B
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

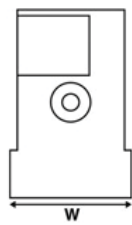
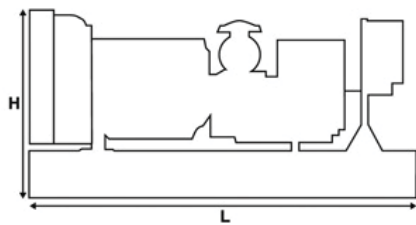
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
415/240V	8.5	6.8	9.5	7.6
400/230V	8.5	6.8	9.5	7.6
380/220V	8.5	6.8	9.5	7.6

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)	296 (653)
Wet (+ lube oil & coolant)	301 (664)
Fuel, lube oil & coolant	354 (779)

Dimensions: mm (in)	
Length	1400 (55.1)
Width	620 (24.4)
Height	996 (39.2)



Note: General configuration not to be used for installation. See general dimension drawings for detail.

Definitions

Standby Rating

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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.: &"+ ;" &"+ !

Feature Code: <=>!" <=>+" <=><!

Gen. Arr. Number: ?\$ @<J

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