

DIESEL GENERATOR SET



DE33E0

Image shown may not reflect actual package

Operating		
Generator Set Model - 3 Phase	Prime*	Standby*
400/230 V, 50 Hz	30.0 kVA 24.0 kW	33.0 kVA 26.4 kW
480V, 60 Hz	33.8 kVA 27.0 kW	37.5 kVA 30.0 kW

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

Technical Data		
Engine Model & Manufacturer	Cat® C3.3	
Generator Model	LC1514F	
Control Panel	EMCP 4.1	
Base Frame Type:	Heavy Duty Fabricated Steel	
Control Breaker Type:	3 Pole MCB / 3 Pole MCCB	
Frequency:	50 Hz	60 Hz
Engine Speed: RPM	1500	1800
Full Load Capacity: litres (US gal)	161 (42.5)	
Full Load Capacity, Prime: l/hr (US gal/hr)	7.0 (1.8)	8.1 (2.1)
Full Load Capacity, Standby: l/hr (US gal/hr)	7.7 (2.0)	9.0 (2.4)

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Engine Technical Data

Manufacturer:	Caterpillar
Model:	C3.3
Number of Cylinders / Arrangement:	3 / In Line
Cycle:	4 Stroke
Intake:	Naturally Aspirated
Cooling Medium:	Water
Generator Type:	Mechanical
Generator Class:	ISO 8528 G2
Cylinder Ratio:	19.25:1
Displacement: l (cu.in)	3.3 (201.4)
Bore/Stroke: mm (in)	105.0 (4.1)/127.0 (5.0)
Maximum Pressure: kg m² (lb. in²)	1.14 (3896)
Engine Emission Standard:	
-V.O.G./G.O.V.:	12/Negative
-Bore Clearance:	65
Weight: kg (lb) - D:	412 (908)
-W_e:	430 (948)

	50 Hz	60 Hz
Alternator Type:	Replaceable Element	
Capacity: A.F.:		
m³/min (cfm) -S₁ b:	2.2 (76)	2.6 (91)
-P₁ e:	2.2 (76)	2.6 (92)
Maximum Capacity: A.I.:		
R₁ e: kPa (in H₂O)	6.5 (26.1)	6.5 (26.1)
Rated Capacity: A.F.:		
m³/min (cfm)	62.6 (2211)	84.8 (2995)
Engine R₁ e:		
Capacity: A.F.:		
Pa (in H₂O)	125 (0.5)	125 (0.5)

	50 Hz	60 Hz
Cooling System Capacity:		
l (US gal)	10.2 (2.7)	10.2 (2.7)
Water Pump Type:	Centrifugal	
Heat Rejection: W_e & L_h O: kW (Btu/min)		
-S₁ b:	18.0 (1024)	22.0 (1251)
-P₁ e:	16.0 (910)	18.0 (1024)
Heat Radiated: R₁ e: Heat radiated from engine and alternator		
kW (Btu/min) -S₁ b:	9.3 (529)	9.7 (552)
-P₁ e:	7.9 (449)	8.2 (466)
Rated Fuel: kW (hp)	0.3 (0.4)	0.5 (0.7)

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):	8.3 (2.2)
Oil Pressure (US gal):	7.8 (2.1)
Oil Type:	API CG4 / CH4 15W-40
Cooling Medium:	Water

	50 Hz	60 Hz
Engine Speed: RPM	1500	1800
Generator Power: kW (hp)		
-S₁ b:	31.0 (42.0)	36.5 (49.0)
-P₁ e:	28.2 (38.0)	33.1 (44.0)
BMEP: kPa (psi)		
-S₁ b:	752.0 (109.0)	738.0 (107.0)
-P₁ e:	684.0 (99.2)	669.0 (97.0)
Rated Fuel Power: kW	7.0	9.0

Filter System:				
Filter Type:	Replaceable Element			
Rated Fuel Filter:	Class A2 Diesel or BSEN590			
Filter Capacity: l/hr (US gal/hr)				
	110% L	100% L	75% L	50% L
Pressure: kPa				
50 Hz	7.7 (2.0)	7.0 (1.8)	5.2 (1.4)	3.8 (1.0)
60 Hz	9.0 (2.4)	8.1 (2.1)	6.2 (1.6)	4.7 (1.2)
Speed: kPa				
50 Hz		7.7 (2.0)	5.7 (1.5)	4.1 (1.1)
60 Hz		9.0 (2.4)	6.8 (1.8)	5.0 (1.3)

(based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2)

	50 Hz	60 Hz
Engine System:		
System Type:	Industrial	
System Model & Q:	EXSY1 (1)	
Pressure: kPa (in Hg)	1.80 (0.532)	2.00 (0.591)
System Noise Rating:		
L₁ e: dB	20	19
Maximum Allowable Back Pressure: kPa (in. Hg)	8.0 (2.4)	10.0 (3.0)
Engine Generator Capacity: m³/min (cfm)		
-S₁ b:	5.8 (205)	6.6 (233)
-P₁ e:	5.7 (201)	6.4 (226)
Engine Generator Temperature: °C (°F)		
-S₁ b:	520 (968)	530 (986)
-P₁ e:	500 (932)	520 (968)

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Generator Performance Data

Description	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
Maximum Output Power (kW)	72	68	63	78	78	55	63	-	69
Service Factor (%)	-	-	-	-	-	-	-	-	-
Reactances (p.u.)									
X_s	2.298	2.474	2.741	2.045	2.323	3.706	3.092	-	2.764
X_r	0.143	0.153	0.170	0.127	0.144	0.230	0.192	-	0.171
$X_{r'}$	0.071	0.077	0.085	0.063	0.072	0.115	0.096	-	0.086

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

Generator Technical Data

Prime Power (kW)	
Control Panel	
Model	LC1514F
Number of Poles	1
Insulation Class	H
Winding Ratio (Y-Δ)	2/3 - 6
Winding	12
Insulation Protection Rating	IP23
Excitation System	SHUNT
AVR Model	R220

Output Power (kW)	
Rated Speed (RPM)	2250
Voltage Regulation (%)	+/- 1.0%
Winding Factor (NEMA = TIF)	50
Winding Factor (IEC = THF)	2.0%
Temperature Rise (LL/LN)	5.0%
Harmonic Suppression	Suppression is in line with European Standard EN61000-6
Rated Voltage (V)	
-50 Hz:	3.3 (188)
-60 Hz:	3.7 (210)

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Technical Data

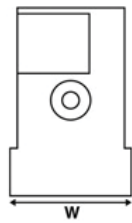
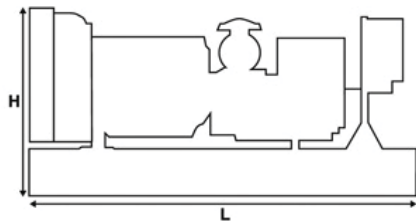
Voltage (V) @ 50 Hz	Prime Power (kW)		Standby Power (kW)	
	VA	W	VA	W
415/240V	30.0	24.0	33.0	26.4
400/230V	30.0	24.0	33.0	26.4
380/220V	30.0	24.0	33.0	26.4
230/115V	30.0	24.0	33.0	26.4
220/127V	30.0	24.0	33.0	26.4
220/110V	30.0	24.0	33.0	26.4
200/115V	30.0	24.0	33.0	26.4

Voltage (V) @ 60 Hz	Prime Power (kW)		Standby Power (kW)	
	VA	W	VA	W
480/277V	33.8	27.0	37.5	30.0
220/127V	33.8	27.0	37.5	30.0
380/220V	33.8	27.0	37.5	30.0
240/120V	33.8	27.0	37.5	30.0
440/254V	33.8	27.0	37.5	30.0
220/110V	33.8	27.0	37.5	30.0
208/120V	33.8	27.0	37.5	30.0
240/139V	33.8	27.0	37.5	30.0

Weight & Dimensions

Weight (kg)	Weight (lb)
Net (+ fuel tank)	827 (1823)
Weight (+ fuel tank & accessories)	840 (1852)
Fuel tank capacity	976 (2153)

Dimension (mm)	Dimension (in)
Height	1540 (60.6)
Width	970 (38.2)
Height (incl. fuel tank)	1361 (53.6)



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

Standby Power

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 Power

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.

Documentation

A full set of operation and maintenance manuals and circuit wiring diagrams.

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.