DIESEL GENERATOR SET

Image shown may not reflect actual package

DE22E3

EU stage IIIA emissions compliant.
Suitable for Mobile Applications in the European Community.

Output Ratings

Generator Set Model - 3 Phase	Prime*	Standby*
400/230 V, 50 Hz	20.0 kVA 16.0 kW	22.0 kVA 17.6 kW
220/127V, 60 Hz	22.5 kVA 18.0 kW	25.0 kVA 20.0 kW

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

Technical Data

Engine Make & Model:	Cat® C2.2	
Generator Model:	LC1114M	
Control Panel:	EMCP 4.1	
Base Frame Type:	Heavy Duty Fabricated Steel	
Circuit Breaker Type:	3 Pole MCB	
Frequency:	**50 Hz**	**60 Hz**
Engine Speed: RPM	1500	1800
Fuel Tank Capacity: litres (US gal)	66 (17.4)	
Fuel Consumption, Prime: l/hr (US gal/hr)	5.3 (1.4)	5.8 (1.5)
Fuel Consumption, Standby : l/hr (US gal/hr)	5.9 (1.6)	6.5 (1.7)

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Engine Technical Data

Physical Data

Manufacturer:	Caterpillar
Model:	C2.2
No. of Cylinders/Alignment:	4 / In Line
Cycle:	4 Stroke
Induction:	Naturally Aspirated
Cooling Method:	Water
Governing Type:	Mechanical
Governing Class:	ISO 8528
Compression Ratio:	23.3:1
Displacement: l (cu.in)	2.2 (135.2)
Bore/Stroke: mm (in)	84.0 (3.3)/100.0 (3.9)
Moment of Inertia: kg m² (lb. in²)	2.72 (9308)
Engine Electrical System:	
-Voltage/Ground:	12/Negative
-Battery Charger Amps:	65
Weight: kg (lb) - **Dry:**	242 (534)
- Wet:	251 (554)

Air System

	50 Hz	60 Hz
Air Filter Type:	Replaceable Element	
Combustion Air Flow:		
m³/min (cfm) **-Standby:**	1.5 (51)	1.7 (61)
-Prime:	1.5 (51)	1.7 (61)
Max. Combustion Air Intake Restriction: kPa (in H_2O)	3.0 (12.0)	3.0 (12.0)
Radiator Cooling Air Flow:		
m³/min (cfm)	33.0 (1165)	41.4 (1462)
External Restriction to Cooling Air Flow: Pa (in H_2O)	125 (0.5)	125 (0.5)

Cooling System

	50 Hz	60 Hz
Cooling System Capacity: l (US gal)	6.5 (1.7)	6.5 (1.7)
Water Pump Type:	Centrifugal	
Heat Rejected to Water & Lube Oil: kW (Btu/min)		
-Standby:	19.6 (1115)	22.2 (1262)
-Prime:	17.0 (967)	19.9 (1132)
Heat Radiation to Room: Heat radiated from engine and alternator		
kW (Btu/min) **-Standby:**	7.1 (404)	7.4 (421)
-Prime:	5.7 (324)	6.3 (358)
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):	10.6 (2.8)
Oil Pan l (US gal):	8.9 (2.4)
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:	20.6 (28.0)	24.3 (33.0)
-Prime:	18.7 (25.0)	22.0 (30.0)
BMEP: kPa (psi)		
-Standby:	743.0 (107.8)	731.0 (106.0)
-Prime:	675.0 (97.9)	662.0 (96.0)
Regenerative Power: kW	5.6	7.2

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	5.9 (1.6)	5.3 (1.4)	3.9 (1.0)	2.9 (0.8)
60 Hz	6.5 (1.7)	5.8 (1.5)	4.5 (1.2)	3.3 (0.9)
Standby				
50 Hz		5.9 (1.6)	4.3 (1.1)	3.1 (0.8)
60 Hz		6.5 (1.7)	4.9 (1.3)	3.6 (1.0)

(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)	0.57 (0.168)	1.58 (0.467)
Silencer Noise Reduction Level: dB	18.8	21.5
Max. Allowable Back Pressure: kPa (in. Hg)	10.2 (3.0)	10.2 (3.0)
Exhaust Gas Flow:		
m³/min (cfm) **-Standby:**	3.9 (139)	4.8 (168)
-Prime:	3.6 (129)	4.3 (153)
Exhaust Gas Temperature: °C (°F)		
-Standby:	505 (941)	510 (950)
-Prime:	445 (833)	440 (824)

Generator Performance Data

Data Item	50 Hz				60 Hz				
	415/240V	400/230V	380/220V						220/127V
Motor Starting Capability* kVA	55	52	48						52
Reactances: Per Unit									
Xd	1.793	1.930	2.139						2.153
X'd	0.143	0.154	0.171						0.172
X''d	0.072	0.077	0.085						0.086

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

Generator Technical Data

Physical Data	
LC Frame	
Model:	LC1114M
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:	2.7 (154)
-60 Hz:	2.8 (159)

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Technical Data

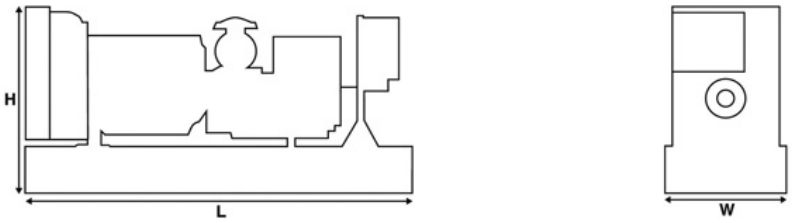
Voltage 50 Hz	Prime		Standby	
	kVA	kW	kVA	kW
415/240V	20.0	16.0	22.0	17.6
400/230V	20.0	16.0	22.0	17.6
380/220V	20.0	16.0	22.0	17.6

Voltage 60 Hz	Prime		Standby	
	kVA	kW	kVA	kW
220/127V	22.5	18.0	25.0	20.0

Weights & Dimensions

Weights: kg (lb)	
Net (+ lube oil)	447 (985)
Wet (+ lube oil & coolant)	454 (1001)
Fuel, lube oil & coolant	510 (1124)

Dimensions: mm (in)	
Length	1500 (59.1)
Width	620 (24.4)
Height	1115 (43.9)



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 ekW 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.**

www.Cat-ElectricPower.com

Price List: C1C2PGAI,C1C2PGAT

Gen. Arr. Number: 457-1399

Source: Europe, China

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