

DIESEL GENERATOR SET



DE88E0

Image shown may not reflect actual package

| Output Ratings | | |
|--------------------------------------|---------------------|----------------------|
| Generator Set Model - 3 Phase | Prime* | Standby* |
| 400/230 V, 50 Hz | 80.0 kVA 64.0 kW | 88.0 kVA 70.4 kW |
| 480V, 60 Hz | 90.0 kVA 72.0 kW | 100.0 kVA 80.0 kW |

* Refer to ratings definitions on page 4.
Ratings at 0,8 power factor.

| Technical Data | | |
|---|-----------------------------|--------------|
| Engine Make & Model: | Cat® C4.4 | |
| Generator Model: | LC3114D | |
| 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 | 1800 |
| Fuel Tank Capacity: litres (US gal) | 219 (57.9) | |
| Fuel Consumption, Prime: l/hr (US gal/hr) | 18.0 (4.8) | 21.0 (5.5) |
| Fuel Consumption, Standby : l/hr (US gal/hr) | 19.8 (5.2) | 23.3 (6.2) |

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Engine Technical Data

| Physical Data | | Lubrication System | |
|---|-------------------------|---|---|
| Manufacturer: | Caterpillar | Oil Filter Type: | Spin-On, Full Flow |
| Model: | C4.4 | Total Oil Capacity I (US gal): | 8.0 (2.1) |
| No. of Cylinders/Alignment: | 4 / In Line | Oil Pan I (US gal): | 7.0 (1.8) |
| 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) | 4.4 (268.5) | -Standby: | 80.7 (108.0) 93.0 (125.0) |
| Bore/Stroke: mm (in) | 105.0 (4.1)/127.0 (5.0) | -Prime: | 73.4 (98.0) 84.5 (113.0) |
| Moment of Inertia: kg m² (lb. in²) | 1.14 (3896) | BMEP: kPa (psi) | |
| Engine Electrical System: | | -Standby: | 1468.0 (212.9) 1409.0 (204.4) |
| -Voltage/Ground: | 12/Negative | -Prime: | 1335.0 (193.6) 1280.0 (185.7) |
| -Battery Charger Amps: | 65 | Regenerative Power: kW | 7.0 9.0 |
| Weight: kg (lb) - Dry: | 463 (1021) | Fuel System | |
| - Wet: | 485 (1069) | 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 | 19.8 (5.2) 18.0 (4.8) 13.6 (3.6) 9.5 (2.5) |
| | | 60 Hz | 23.3 (6.2) 21.0 (5.5) 16.1 (4.3) 11.6 (3.1) |
| | | Standby | |
| | | 50 Hz | 19.8 (5.2) 14.9 (3.9) 10.3 (2.7) |
| | | 60 Hz | 23.3 (6.2) 17.7 (4.7) 12.5 (3.3) |
| | | (based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2) | |
| Air System | 50 Hz | 60 Hz | Exhaust System |
| Air Filter Type: | Replaceable Element | | 50 Hz |
| Combustion Air Flow: | | | 60 Hz |
| m ³ /min (cfm) | -Standby: | 5.1 (180) 6.5 (230) | Silencer Type: |
| | -Prime: | 4.8 (170) 6.2 (219) | Industrial |
| Max. Combustion Air Intake | | | Silencer Model & Quantity: |
| Restriction: kPa (in H₂O) | | 8.0 (32.1) 8.0 (32.1) | EXSY1 (1) |
| Radiator Cooling Air Flow: | | | Pressure Drop Across |
| m ³ /min (cfm) | | 121.2 (4280) 140.4 (4958) | Silencer System: kPa (in Hg) |
| External Restriction to | | | 1.17 (0.345) 1.97 (0.581) |
| Cooling Air Flow: Pa (in H₂O) | | 120 (0.5) 120 (0.5) | Silencer Noise Reduction |
| | | | Level: dB |
| | | | 16 16 |
| | | | Max. Allowable Back |
| | | | Pressure: kPa (in. Hg) |
| | | | 10.0 (3.0) 15.0 (4.4) |
| | | | Exhaust Gas Flow: |
| | | | m ³ /min (cfm) |
| | | | -Standby: |
| | | | 13.3 (470) 15.9 (560) |
| | | | -Prime: |
| | | | 12.5 (441) 15.0 (530) |
| | | | Exhaust Gas Temperature: °C (°F) |
| | | | -Standby: |
| | | | 580 (1076) 560 (1040) |
| | | | -Prime: |
| | | | 555 (1031) 535 (995) |
| Cooling System | 50 Hz | 60 Hz | |
| Cooling System Capacity: | | | |
| I (US gal) | 13.0 (3.4) | 13.0 (3.4) | |
| Water Pump Type: | Centrifugal | | |
| Heat Rejected to Water & Lube Oil: kW (Btu/min) | | | |
| -Standby: | 51.0 (2900) | 57.0 (3242) | |
| -Prime: | 46.0 (2616) | 53.0 (3014) | |
| Heat Radiation to Room: Heat radiated from engine and alternator | | | |
| kW (Btu/min) | -Standby: | 20.7 (1177) 22.1 (1257) | |
| | -Prime: | 18.9 (1075) 20.1 (1143) | |
| Radiator Fan Load: kW (hp) | | 1.0 (1.3) 1.7 (2.3) | |
| 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. | | | |

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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 Capacity* kVA | 196 | 184 | 168 | 217 | 215 | 143 | 168 | - | 185 |
| Short Circuit Capacity** % | 300 | 300 | 300 | 300 | 300 | 300 | 300 | - | 300 |
| Reactances: Per Unit | | | | | | | | | |
| Xd | 2.535 | 2.728 | 3.023 | 2.255 | 2.558 | 4.081 | 3.405 | - | 3.044 |
| X'd | 0.110 | 0.118 | 0.131 | 0.097 | 0.111 | 0.176 | 0.147 | - | 0.132 |
| X''d | 0.066 | 0.071 | 0.078 | 0.058 | 0.066 | 0.106 | 0.088 | - | 0.079 |

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: | LC3114D |
| 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: | 2.0% |
| Radio Interference: | Suppression is in line with European Standard EN61000-6 |
| Radiant Heat: kW (Btu/min) | |
| -50 Hz: | 6.7 (381) |
| -60 Hz: | 7.1 (404) |

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Technical Data

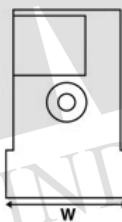
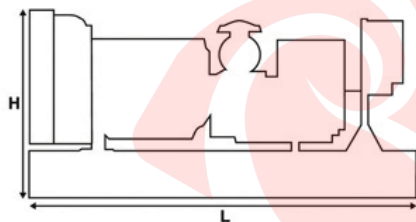
| Voltage 50 Hz | Prime | | Standby | |
|------------------|-------|------|---------|------|
| | kVA | kW | kVA | kW |
| 415/240V | 80.0 | 64.0 | 88.0 | 70.4 |
| 400/230V | 80.0 | 64.0 | 88.0 | 70.4 |
| 380/220V | 80.0 | 64.0 | 88.0 | 70.4 |
| 230/115V | 80.0 | 64.0 | 88.0 | 70.4 |
| 220/127V | 80.0 | 64.0 | 88.0 | 70.4 |
| 220/110V | 80.0 | 64.0 | 88.0 | 70.4 |
| 200/115V | 80.0 | 64.0 | 88.0 | 70.4 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| Voltage 60 Hz | Prime | | Standby | |
|------------------|-------|------|---------|------|
| | kVA | kW | kVA | kW |
| 480/277V | 90.0 | 72.0 | 100.0 | 80.0 |
| 220/127V | 90.0 | 72.0 | 100.0 | 80.0 |
| 380/220V | 90.0 | 72.0 | 100.0 | 80.0 |
| 240/120V | 90.0 | 72.0 | 100.0 | 80.0 |
| | | | | |
| 440/254V | 90.0 | 72.0 | 100.0 | 80.0 |
| 220/110V | 90.0 | 72.0 | 100.0 | 80.0 |
| 208/120V | 90.0 | 72.0 | 100.0 | 80.0 |
| 240/139V | 90.0 | 72.0 | 100.0 | 80.0 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Weights & Dimensions

| Weights: kg (lb) | |
|----------------------------|-------------|
| Net (+ lube oil) | 1058 (2332) |
| Wet (+ lube oil & coolant) | 1071 (2361) |
| Fuel, lube oil & coolant | 1256 (2770) |

| 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.