

# DIESEL GENERATOR SET



## DE14E3S

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

Image shown may not reflect actual package

| Output Ratings                |                     |                     |
|-------------------------------|---------------------|---------------------|
| Generator Set Model - 1 Phase | Prime*              | Standby*            |
| 230V, 50Hz                    | 13.0 kVA<br>13.0 kW | 14.0 kVA<br>14.0 kW |
| 240/120V, 60 Hz               | 15.5 kVA<br>15.5 kW | 17.0 kVA<br>17.0 kW |

\* Refer to ratings definitions on page 4.  
Ratings at 1.0 power factor.

| Technical Data                               |                             |           |
|--|-----------------------------|-----------|
| Engine Make & Model:                         | Cat® C2.2                   |           |
| Generator Model:                             | LCB1114L                    |           |
| 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)    | 4.3 (1.1)                   | 5.2 (1.4) |
| Fuel Consumption, Standby : l/hr (US gal/hr) | 4.6 (1.2)                   | 5.6 (1.5) |

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## Engine Technical Data

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

| Air System  | 50 Hz               | 60 Hz       |
|---|---------------------|-------------|
| <b>Air Filter Type:</b>                           | Replaceable Element |             |
| <b>Combustion Air Flow:</b>                       |                     |             |
| m <sup>3</sup> /min (cfm)                         |                     |             |
| -Standby:   | 1.5 (51)            | 1.7 (61)    |
| -Prime:   | 1.5 (51)            | 1.7 (61)    |
| <b>Max. Combustion Air Intake</b>                 |                     |             |
| <b>Restriction:</b> kPa (in H <sub>2</sub> O)     | 3.0 (12.0)          | 3.0 (12.0)  |
| <b>Radiator Cooling Air Flow:</b>                 |                     |             |
| m <sup>3</sup> /min (cfm)                         | 33.0 (1165)         | 41.4 (1462) |
| <b>External Restriction to</b>                    |                     |             |
| <b>Cooling Air Flow:</b> Pa (in H <sub>2</sub> O) | 125 (0.5)           | 125 (0.5)   |

| Cooling System  | 50 Hz       | 60 Hz      |
|---|-------------|------------|
| <b>Cooling System Capacity:</b>   |             |            |
| l (US gal)  | 6.5 (1.7)   | 6.5 (1.7)  |
| <b>Water Pump Type:</b>   | Centrifugal |            |
| <b>Heat Rejected to Water &amp; Lube Oil:</b> kW (Btu/min)  |             |            |
| -Standby:   | 15.2 (864)  | 17.2 (978) |
| -Prime:   | 13.7 (779)  | 15.5 (881) |
| <b>Heat Radiation to Room:</b> Heat radiated from engine and alternator   |             |            |
| kW (Btu/min)  |             |            |
| -Standby:   | 5.3 (301)   | 6.1 (347)  |
| -Prime:   | 4.5 (256)   | 5.2 (296)  |
| <b>Radiator Fan Load:</b> 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                    |                    |
|---------------------------------------|--------------------|
| <b>Oil Filter Type:</b>               | Spin-On, Full Flow |
| <b>Total Oil Capacity I (US gal):</b> | 10.6 (2.8)         |
| <b>Oil Pan I (US gal):</b>            | 8.9 (2.4)          |
| <b>Oil Type:</b>                      | API CH4 15W-40     |
| <b>Cooling Method:</b>                | N/A                |

| Performance                        | 50 Hz        | 60 Hz        |
|------------------------------------|--------------|--------------|
| <b>Engine Speed:</b> RPM           | 1500         | 1800         |
| <b>Gross Engine Power:</b> kW (hp) |              |              |
| -Standby:                          | 18.0 (24.0)  | 21.5 (29.0)  |
| -Prime:                            | 16.2 (22.0)  | 19.4 (26.0)  |
| <b>BMEP:</b> kPa (psi)             |              |              |
| -Standby:                          | 649.0 (94.2) | 647.0 (93.8) |
| -Prime:                            | 585.0 (84.8) | 583.0 (84.6) |
| <b>Regenerative Power:</b> kW      | 5.6          | 7.2          |

| Fuel System   |                            |                  |                 |                 |
|---|----------------------------|------------------|-----------------|-----------------|
| <b>Fuel Filter Type:</b>  | Replaceable Element        |                  |                 |                 |
| <b>Recommended Fuel:</b>  | Class A2 Diesel or BSEN590 |                  |                 |                 |
| <b>Fuel Consumption:</b> l/hr (US gal/hr)   |                            |                  |                 |                 |
|   | <b>110% Load</b>           | <b>100% Load</b> | <b>75% Load</b> | <b>50% Load</b> |
| <b>Prime</b>  |                            |                  |                 |                 |
| 50 Hz   | 4.6 (1.2)                  | 4.3 (1.1)        | 3.3 (0.9)       | 2.6 (0.7)       |
| 60 Hz   | 5.6 (1.5)                  | 5.2 (1.4)        | 4.1 (1.1)       | 3.1 (0.8)       |
| <b>Standby</b>  |                            |                  |                 |                 |
| 50 Hz   | 4.6 (1.2)                  | 3.5 (0.9)        | 2.7 (0.7)       |                 |
| 60 Hz   | 5.6 (1.5)                  | 4.4 (1.2)        | 3.3 (0.9)       |                 |
| (based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2) |                            |                  |                 |                 |

| Exhaust System                          | 50 Hz        | 60 Hz        |
|---|--------------|--------------|
| <b>Silencer Type:</b>                   | Industrial   |              |
| <b>Silencer Model &amp; Quantity:</b>   | EXSY1 (1)    |              |
| <b>Pressure Drop Across</b>             |              |              |
| <b>Silencer System:</b> kPa (in Hg)     | 0.58 (0.171) | 1.47 (0.434) |
| <b>Silencer Noise Reduction</b>         |              |              |
| <b>Level:</b> dB                        | 18.7         | 11.5         |
| <b>Max. Allowable Back</b>              |              |              |
| <b>Pressure:</b> kPa (in. Hg)           | 10.2 (3.0)   | 10.2 (3.0)   |
| <b>Exhaust Gas Flow:</b>                |              |              |
| m <sup>3</sup> /min (cfm)               |              |              |
| -Standby:                               | 3.2 (114)    | 4.3 (151)    |
| -Prime:                                 | 3.0 (105)    | 3.9 (138)    |
| <b>Exhaust Gas Temperature:</b> °C (°F) |              |              |
| -Standby:                               | 413 (776)    | 459 (858)    |
| -Prime:                                 | 364 (687)    | 396 (745)    |

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## Generator Performance Data

| Data Item                      | 50 Hz |       |       |  | 60 Hz |           |           |  |
|--------------------------------|-------|-------|-------|--|-------|-----------|-----------|--|
|                                | 240V  | 230V  | 220V  |  |       | 220V/110V | 240V/120V |  |
| Motor Starting Capability* kVA | 34    | 32    | 31    |  |       | 27        | 30        |  |
| Short Circuit Capacity %       | -     | -     | -     |  |       | -         | -         |  |
| Reactances:<br>Per Unit        |       |       |       |  |       |           |           |  |
| Xd                             | 1.470 | 1.600 | 1.750 |  |       | 2.500     | 2.100     |  |
| X'd                            | 0.230 | 0.250 | 0.270 |  |       | 0.380     | 0.320     |  |
| X''d                           | 0.113 | 0.123 | 0.134 |  |       | 0.192     | 0.161     |  |

Reactances shown are applicable to prime ratings.  
\*Based on 30% voltage dip at 0.9 power factor

## Generator Technical Data

| Physical Data              |           |
|----------------------------|-----------|
| LC Series                  |           |
| Model:                     | LCB1114L  |
| No. of Bearings:           | 1         |
| Insulation Class:          | H         |
| Winding Pitch - Code:      | 2/3 - M   |
| Wires:                     | 4         |
| Ingress Protection Rating: | IP23      |
| Excitation System:         | SHUNT     |
| AVR Model:                 | R220/R221 |

| Operating Data                     |   |
|------------------------------------|---|
| Overspeed: RPM                     | 2250  |
| Voltage Regulation: (steady state) | +/- 1.0%  |
| Wave Form NEMA = TIF:              | 100   |
| Wave Form IEC = THF:               | 3.0%  |
| Total Harmonic Content LL/LN:      | 5.0%  |
| Radio Interference:                | Suppression is in line with European Standard EN61000-6 |
| Radiant Heat: kW (Btu/min)         |   |
| -50 Hz:                            | 2.2 (125)   |
| -60 Hz:                            | 2.9 (165)   |

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## Technical Data

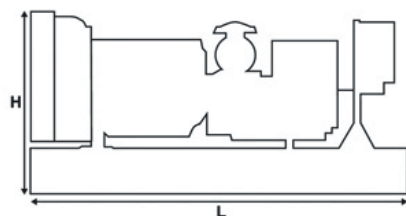
| Voltage<br>50 Hz | Prime |      | Standby |      |
|------------------|-------|------|---------|------|
|                  | kVA   | kW   | kVA     | kW   |
| 240V             | 13.0  | 13.0 | 14.0    | 14.0 |
| 230V             | 13.0  | 13.0 | 14.0    | 14.0 |
| 220V             | 13.0  | 13.0 | 14.0    | 14.0 |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |

| Voltage<br>60 Hz | Prime |      | Standby |      |
|------------------|-------|------|---------|------|
|                  | kVA   | kW   | kVA     | kW   |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |
|                  |       |      |         |      |
| 220V/110V        | 14.5  | 14.5 | 16.0    | 16.0 |
| 240V/120V        | 15.5  | 15.5 | 17.0    | 17.0 |
|                  |       |      |         |      |

## Weights & Dimensions

| Weights: kg (lb)           |            |
|----------------------------|------------|
| Net (+ lube oil)           | 439 (968)  |
| Wet (+ lube oil & coolant) | 446 (983)  |
| Fuel, lube oil & coolant   | 502 (1107) |

| 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 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.**

Price List: C1C2PGAI, C1C2PGAT

Gen. Arr. Number: 457-1404

Source: Europe, China

LEHE0684-01 (04/16)

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