

# Cat® C7.1

## Diesel Generator Sets



### Standby & Prime: 50 Hz



Image shown might not reflect actual configuration

|                       |                                       |
|-----------------------|---------------------------------------|
| Engine Model          | Cat® C7.1 Inline 4-stroke Diesel      |
| Bore x Stroke         | 105.0 mm x 135.0 mm (4.1 in x 5.3 in) |
| Displacement          | 7.0 L (427.8 in³)                     |
| Compression Ratio     | 16.0:1                                |
| Aspiration            | Turbocharged Air To Air Charge Cooled |
| Fuel Injection System | Inline                                |
| Governor              | Electronic                            |

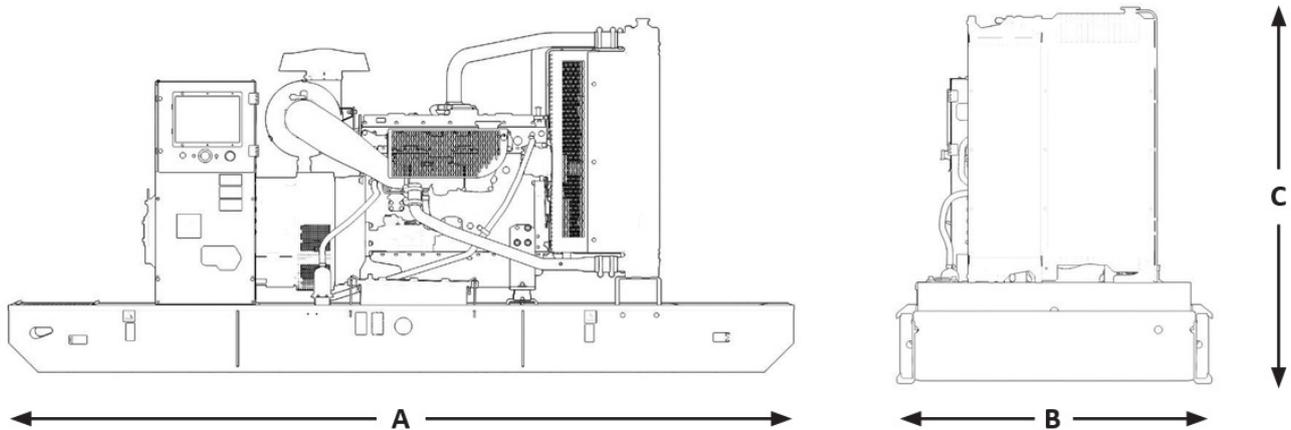
| Model   | Standby              | Prime                | Emission Strategy |
|---------|----------------------|----------------------|-------------------|
| DE220E0 | 50 Hz                | 50 Hz                | Low BSFC          |
|         | 220.0 kVA (176.0 kW) | 200.0 kVA (160.0 kW) |                   |

### PACKAGE PERFORMANCE

| Performance  | Standby       | Prime       |
|--|---------------|-------------|
| Frequency  | 50 Hz         | 50 Hz       |
| Genset Power Rating  | 220.0 kVA     | 200.0 kVA   |
| Genset power rating with fan @ 0.8 power factor                            | 176.0 kW      | 160.0 kW    |
| Emissions  | Low BSFC      |             |
| Performance Number   | P3692A        |             |
| <b>Fuel Consumption</b>  |               |             |
| Fuel Tank Capacity, litres (US gal)  | 418 (110.4)   |             |
| 100% load with fan, L/hr (gal/hr)  | 49.5 (13.1)   | 45.4 (12.0) |
| 75% load with fan, L/hr (gal/hr)   | 38.0 (10.0)   | 34.7 (9.2)  |
| 50% load with fan, L/hr (gal/hr)   | 25.7 (6.8)    | 23.4 (6.2)  |
| <b>Cooling System<sup>1</sup></b>  |               |             |
| Radiator air flow, m³/min (cfm)  | 307.2 (10849) |             |
| Total coolant capacity, L (gal)  | 27.0 (7.1)    |             |
| <b>Inlet Air</b>   |               |             |
| Max. Combustion Air Intake Restriction, kPa (in H <sub>2</sub> O)          | 8.0 (32.1)    |             |
| Combustion air inlet flow rate, m³/min (cfm)                               | 13.2 (466)    | 12.6 (445)  |
| Max. Allowable Combustion Air Inlet Temp, °C (°F)                          | 50 (122)      |             |
| <b>Exhaust System</b>  |               |             |
| Exhaust stack gas temperature, °C (°F)                                     | 580 (1076)    | 527 (981)   |
| Exhaust gas flow rate, m³/min (cfm)  | 36.8 (1300)   | 34.9 (1232) |
| Exhaust system backpressure (maximum allowable), kPa (in H <sub>2</sub> O) | 15.0 (4.4)    |             |
| <b>Heat Rejection</b>  |               |             |
| Heat rejection to jacket water, kW (Btu/min)                               | 81.0 (4606)   | 78.2 (4447) |
| Heat rejection to alternator, kW (Btu/min)                                 | 15.2 (864)    |             |
| Heat rejection to atmosphere from engine, kW (Btu/min)                     | 28.4 (1615)   | 26.0 (1479) |

| Alternator <sup>3</sup>                           | 50 Hz    |      |      |      |
|---|----------|------|------|------|
|   | Voltages | 415V | 400V | 380V |
| Motor starting capability @ 30% Voltage Dip, skVA | 414      | 389  | 356  | 457  |
| Current, amps                                     | 306      | 318  | 334  | 499  |
| Temperature Rise, °C                              | 163/27   |      |      |      |
| Frame Size  | LC5014F  |      |      |      |
| Excitation  | S.E      |      |      |      |

## WEIGHTS & DIMENSIONS



| Dim "A"<br>mm (in) | Dim "B"<br>mm (in) | Dim "C"<br>mm (in) | Dry Weight<br>kg (lb) |
|--------------------|--------------------|--------------------|-----------------------|
| 2500 (98.4)        | 1320 (52.0)        | 1626 (64.0)        | 1731 (3816)           |

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

### APPLICABLE CODES AND STANDARDS:

AS1359, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC.

**Note:** Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

**STANDBY:** 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:** Output available with varying load for an unlimited time. Average power output is 70% of the prime rated kW. 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.

**RATINGS:** Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

### DEFINITIONS AND CONDITIONS

<sup>1</sup> For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

<sup>2</sup> Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 BTU/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

<sup>3</sup> Generator temperature rise is based on a 40°C ambient per NEMA MG1-32.

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