

# Cat® C18

## Diesel Generator Sets



### Standby & Prime: 60 Hz



Image shown might not reflect actual configuration.

|                       |   |
|-----------------------|---|
| Engine Model          | Cat® C18 In-line 6, 4-cycle Diesel      |
| Bore x Stroke         | 145 mm x 183 mm (5.7 in x 7.2 in)       |
| Displacement          | 18.13 L (1106.3 in <sup>3</sup> )       |
| Compression Ratio     | 14:1                                    |
| Aspiration            | Turbocharged Air-to-Air Aftercooled     |
| Fuel Injection System | Electronic Unit Injection               |
| Governor              | Electronic ADEM™ A4 – G3 Class* capable |

| Model | Standby          | Prime            | Emission Strategy |
|-------|------------------|------------------|-------------------|
| C18   | 700 ekW, 875 kVA | 635 ekW, 794 kVA | EPA TIER II       |

### PACKAGE PERFORMANCE

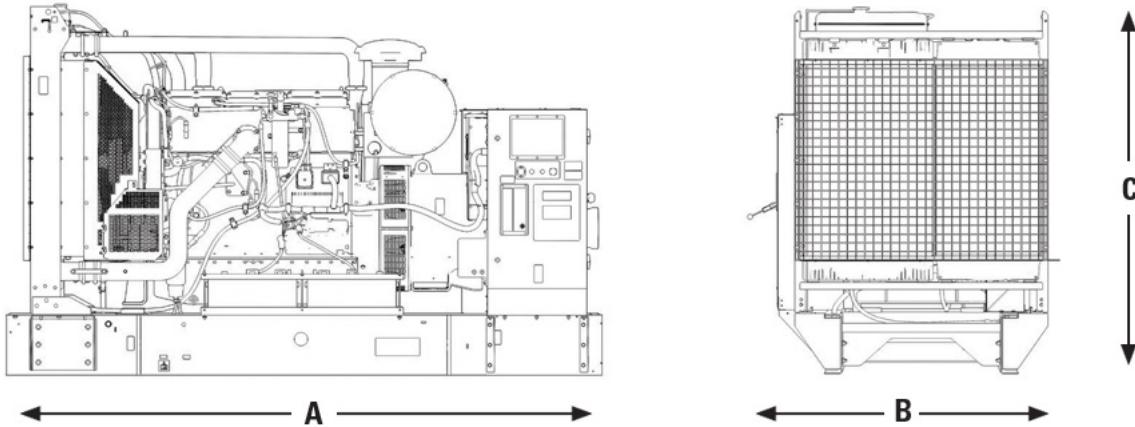
| Performance  | Standby      | Prime        |
|--|--------------|--------------|
| Frequency  | 60 Hz        |              |
| Genset Power Rating  | 875 kVA      | 794 kVA      |
| Genset power rating with fan @ 0.8 power factor                  | 700 ekW      | 635 ekW      |
| Emissions  | EPA TIER II  |              |
| Performance Number   | EM3840       | EM3841       |
| Fuel Consumption   |              |              |
| 100% load with fan, L/hr (gal/hr)                                | 193.7 (51.1) | 176.5 (46.6) |
| 75% load with fan, L/hr (gal/hr)                                 | 148.9 (39.3) | 134.0 (35.3) |
| 50% load with fan, L/hr (gal/hr)                                 | 101.5 (26.8) | 93.7 (24.7)  |
| 25% load with fan, L/hr (gal/hr)                                 | 60.1 (15.8)  | 56.2 (14.8)  |
| Cooling System <sup>1</sup>                                      |              |              |
| Radiator air flow restriction (system), kPa (in. water)          | 0.12 (0.48)  | 0.12 (0.48)  |
| Radiator air flow, m <sup>3</sup> /min (CFM)                     | 900 (31783)  | 900 (31783)  |
| Engine coolant capacity, L (gal)                                 | 20.8 (5.5)   | 20.8 (5.5)   |
| Radiator coolant capacity, L (gal)                               | 77 (20.3)    | 77 (20.3)    |
| Total coolant capacity, L (gal)                                  | 97.8 (25.8)  | 97.8 (25.8)  |
| Inlet Air  |              |              |
| Combustion air inlet flow rate, m <sup>3</sup> /min (CFM)        | 66.5 (2348)  | 64.7 (2285)  |
| Max. Allowable Combustion Air Inlet Temp, °C (°F)                | 49 (120)     | 49 (120)     |
| Exhaust System   |              |              |
| Exhaust stack gas temperature, °C (°F)                           | 441.1 (826)  | 417.9 (784)  |
| Exhaust gas flow rate, m <sup>3</sup> /min (CFM)                 | 166 (5863)   | 155.5 (5489) |
| Exhaust system backpressure (maximum allowable), kPa (in. water) | 10.0 (40.0)  | 10.0 (40.0)  |
| Heat Rejection   |              |              |
| Heat rejection to jacket water, kW (BTU/min)                     | 441.1 (826)  | 417.9 (784)  |
| Heat rejection to exhaust (total), kW (BTU/min)                  | 166 (5863)   | 155.5 (5489) |
| Heat rejection to aftercooler, kW (BTU/min)                      | 10.0 (40.0)  | 10.0 (40.0)  |
| Heat rejection to atmosphere from engine, kW (BTU/min)           | 122 (6938)   | 113 (6426)   |
| Heat rejection from alternator, kW (BTU/min)                     | 40.0 (2275)  | 35.5 (2019)  |

| Emissions (Nominal) <sup>2</sup>  |  |  |  |  | Standby     |  | Prime       |  |
|-----------------------------------|--|--|--|--|-------------|--|-------------|--|
| NOx, mg/Nm <sup>3</sup> (g/hp-hr) |  |  |  |  | 2190 (4.89) |  | 2027 (4.53) |  |
| CO, mg/Nm <sup>3</sup> (g/hp-hr)  |  |  |  |  | 116 (0.26)  |  | 83.6 (0.19) |  |
| HC, mg/Nm <sup>3</sup> (g/hp-hr)  |  |  |  |  | 38.5 (0.10) |  | 33.8 (0.09) |  |
| PM, mg/Nm <sup>3</sup> (g/hp-hr)  |  |  |  |  | 14.1 (0.04) |  | 12.1 (0.03) |  |

| Alternator <sup>3</sup> |   |         |      |      |      |      |         |      |      |
|-------------------------|---|---------|------|------|------|------|---------|------|------|
| Duty Cycle              |   | Standby |      |      |      |      | Prime   |      |      |
| Phase                   |   | 3-Phase |      |      |      |      | 3-Phase |      |      |
| Voltages*, V            |   | 208     | 220  | 240  | 480  | 600  | 208     | 220  | 240  |
| Current, Amps           |   | 2429    | 2296 | 2105 | 1053 | 842  | 2203    | 2083 | 1910 |
| Frame: LC7224H          | Temperature Rise @ 40°C                           |         |      | 150  | 150  |      |         | 125  | 125  |
| Excitation: AREP        | Motor Starting Capability @ 30% Voltage Dip, skVA |         |      | 2147 | 2147 |      |         | 2147 | 2147 |
| Frame: LC7224J          | Temperature Rise @ 40°C                           |         | 150  | 130  | 130  | 130  |         | 125  | 105  |
| Excitation: AREP        | Motor Starting Capability @ 30% Voltage Dip, skVA |         | 2142 | 2512 | 2512 | 2512 |         | 2142 | 2512 |
| Frame: LC7224L          | Temperature Rise @ 40°C                           | 130     | 130  | 105  | 105  | 105  | 105     | 80   | 80   |
| Excitation: AREP        | Motor Starting Capability @ 30% Voltage Dip, skVA | 1917    | 2129 | 2501 | 2501 | 2503 | 1917    | 2129 | 2501 |
| Frame: LC7224N          | Temperature Rise @ 40°C                           | 105     | 105  | 80   | 80   |      | 105     | 80   | 80   |
| Excitation: AREP        | Motor Starting Capability @ 30% Voltage Dip, skVA | 2403    | 2666 | 3127 | 3127 |      | 2403    | 2666 | 3127 |
| Frame: LC7224P          | Temperature Rise @ 40°C                           |         | 80   |      |      | 80   |         | 80   |      |
| Excitation: AREP        | Motor Starting Capability @ 30% Voltage Dip, skVA |         | 2656 |      |      | 3363 |         | 2656 | 3363 |

**\*Note:** 220V and 380V are additional offerings for the Latin America Market.

## WEIGHTS & DIMENSIONS



| Dim "A"<br>mm (in) | Dim "B"<br>mm (in) | Dim "C"<br>mm (in) | Dry Weight<br>kg (lb) |
|--------------------|--------------------|--------------------|-----------------------|
| 3512 (138)         | 1746 (69)          | 2322 (92)          | 4863 (10721)          |

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

## APPLICABLE CODES AND STANDARDS:

CSA C22.2 No 100-04, UL489, UL869, UL2200, IBC, IEC60034-1, ISO 3046, ISO 8528, NEMA MG 1-22, NEMA MG 1-33 and facilitates the compliance to NFPA 37, NFPA70, NFPA 99, NFPA110.

**Note:** Codes may not be available for all model configurations. Site level review needed for NFPA 70. Please consult your Cat Dealer 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 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.

**RATINGS:** Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO 3046 standard conditions.

**FUEL RATES:** Based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/litre (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

## 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> UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

\*Governing Class capability as per ISO 8528-5. Consult your local Cat dealer for configuration and site specific transient performance classification.