Cat® C175-16
Diesel Generator Sets

Image shown may not reflect actual configuration

| Bore – mm (in) | 175 (6.89) |
| Stroke – mm (in) | 220 (8.66) |
| Displacement – L (in³) | 84.7 (5166.88) |
| Compression Ratio | 16.7:1 |
| Aspiration | TA |
| Fuel System | Common Rail |
| Governor Type | ADEM™ A4 |

### Standard Features

**Cat® Diesel Engine**
- Designed and optimized for low emissions or low fuel consumption
- Reliable performance proven in thousands of applications worldwide

**Generator Set Package**
- Accepts 100% block load in one step and meets NFPA 110 loading requirements
- Conforms to ISO 8528-5 G3 load acceptance requirements
- Reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

**Alternators**
- Superior motor starting capability minimizes need for oversizing generator
- Designed to match performance and output characteristics of Cat diesel engines

**Cooling System**
- Cooling systems available to operate in ambient temperatures up to 50°C (122°F)
- Tested to ensure proper generator set cooling

**EMCP 4 Control Panels**
- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements

**Warranty**
- 24 months/1000-hour warranty for standby and mission critical ratings
- 12 months/unlimited hour warranty for prime and continuous ratings
- Extended service protection is available to provide extended coverage options

**Worldwide Product Support**
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

**Financing**
- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

<table>
<thead>
<tr>
<th>Standby 50 Hz kVA (gkW)</th>
<th>Mission Critical 50 Hz kVA (gkW)</th>
<th>Prime 50 Hz kVA (gkW)</th>
<th>Continuous 50 Hz kVA (gkW)</th>
<th>Emissions Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000 (2400)</td>
<td>3000 (2400)</td>
<td>2725 (2180)</td>
<td>2500 (2000)</td>
<td>Optimized for Low Fuel Consumption</td>
</tr>
<tr>
<td>3000 (2400)</td>
<td>3000 (2400)</td>
<td>—</td>
<td>—</td>
<td>Optimized for Low Emissions</td>
</tr>
</tbody>
</table>

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### Optional Equipment

#### Engine
- **Air Cleaner**
  - Single element
  - Dual element

- **Muffler**
  - Industrial grade (15 dB)
  - Residential grade (25 dB)
  - Critical grade (34 dB)

- **Starting**
  - Standard batteries
  - Oversized batteries
  - Standard electric starter(s)
  - Dual electric starter(s)
  - Air starter(s)
  - Jacket water heater

- **Alternator**
  - Output voltage
    - 380V
    - 400V
    - 415V
    - 3300V
    - 415V
  - Temperature Rise (over 40°C ambient)
    - 150°C
    - 125°C/130°C
    - 105°C
    - 80°C

- **Winding type**
  - Form wound

- **Excitation**
  - Permanent magnet (PM)

- **Attachments**
  - Anti-condensation heater
  - Stator and bearing temperature monitoring and protection

#### Power Termination
- **Type**
  - Bus bar
  - Circuit breaker
  - 4000A
  - 5000A
  - UL
  - IEC
  - 3-pole
  - Electrically operated

- **Trip Unit**
  - LSI
  - LSI-G
  - LSIG-P

#### Control System
- **Controller**
  - EMCP 4.2B
  - EMCP 4.3
  - EMCP 4.4

- **Attachments**
  - Local annunciator module
  - Remote annunciator module
  - Expansion I/O module
  - Remote monitoring software

#### Charging
- Battery charger – 20A
- Battery charger – 35A
- Battery charger – 50A

#### Vibration Isolators
- Rubber
- Spring
- Seismic rated

#### Cat Connect
- **Connectivity**
  - Ethernet
  - Cellular
  - Satellite

#### Extended Service Options
- **Terms**
  - 2 year (prime)
  - 3 year
  - 5 year
  - 10 year

- **Coverage**
  - Silver
  - Gold
  - Platinum
  - Platinum Plus

#### Ancillary Equipment
- Automatic transfer switch (ATS)
- Uninterruptible power supply (UPS)
- Paralleling switchgear
- Paralleling controls

#### Certifications
- EU Declaration of Conformity
- EU Declaration of Incorporation
- Eurasian Conformity (EAC)
- IBC seismic certification

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**Note:** Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.
Package Performance

Low Fuel Consumption

<table>
<thead>
<tr>
<th>Performance</th>
<th>Standby</th>
<th>Mission Critical</th>
<th>Prime</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>50 Hz</td>
<td>50 Hz</td>
<td>50 Hz</td>
<td>50 Hz</td>
</tr>
<tr>
<td>Gen set power rating with fan</td>
<td>2400 ekW</td>
<td>2400 ekW</td>
<td>2180 ekW</td>
<td>2000 ekW</td>
</tr>
<tr>
<td>Gen set power rating with fan @ 0.8 power factor</td>
<td>3000 kVA</td>
<td>3000 kVA</td>
<td>2725 kVA</td>
<td>2500 kVA</td>
</tr>
<tr>
<td>Emissions</td>
<td>Low Fuel</td>
<td>Low Fuel</td>
<td>Low Fuel</td>
<td>Low Fuel</td>
</tr>
<tr>
<td>Performance number</td>
<td>DM8719-03</td>
<td>EM0371-02</td>
<td>DM8720-05</td>
<td>DM8721-04</td>
</tr>
</tbody>
</table>

Fuel Consumption

100% load with fan – L/hr (gal/hr) 615.5 (162.6) 615.5 (162.6) 559.6 (147.8) 516.6 (136.5)
75% load with fan – L/hr (gal/hr) 467.7 (123.6) 467.7 (123.6) 429.5 (113.5) 400.0 (105.7)
50% load with fan – L/hr (gal/hr) 331.8 (87.7) 331.8 (87.7) 307.5 (81.2) 287.4 (75.9)
25% load with fan – L/hr (gal/hr) 198.9 (52.5) 198.9 (52.5) 187.1 (49.4) 177.6 (46.9)

Cooling System

Radiator air flow restriction (system) – kPa (in. water) 0.12 (0.48) 0.12 (0.48) 0.12 (0.48) 0.12 (0.48)
Radiator air flow – m³/min (cfm) 2074 (73242) 2074 (73242) 2074 (73242) 2074 (73242)
Engine coolant capacity – L (gal) 303.5 (80.2) 303.5 (80.2) 303.5 (80.2) 303.5 (80.2)
Radiator coolant capacity – L (gal) 579.0 (152.0) 579.0 (152.0) 579.0 (152.0) 579.0 (152.0)
Total coolant capacity – L (gal) 882.5 (232.2) 882.5 (232.2) 882.5 (232.2) 882.5 (232.2)

Inlet Air

Combustion air inlet flow rate – m³/min (cfm) 188.8 (6665.5) 188.8 (6665.5) 175.7 (6205.3) 162.2 (5728.8)

Exhaust System

Exhaust stack gas temperature – °C (°F) 485.3 (905.6) 485.3 (905.6) 476.2 (889.2) 476.0 (888.8)
Exhaust gas flow rate – m³/min (cfm) 498.0 (17584.3) 498.0 (17584.3) 456.9 (16132.1) 422.0 (14902.7)
Exhaust system backpressure (maximum allowable) – kPa (in. water) 6.7 (27.0) 6.7 (27.0) 6.7 (27.0) 6.7 (27.0)

Heat Rejection

Heat rejection to jacket water – kW (Btu/min) 1160 (45983) 1160 (45983) 1047 (45969) 961 (45650)
Heat rejection to exhaust (total) – kW (Btu/min) 2264 (82724) 2264 (82724) 2063 (77309) 1919 (70160)
Heat rejection to aftercooler – kW (Btu/min) 221 (82570) 221 (82570) 188 (6714) 168 (5931)
Heat rejection to atmosphere from engine – kW (Btu/min) 171 (61742) 171 (61742) 165 (6356) 162 (9209)
Heat rejection from alternator – kW (Btu/min) 92 (3543) 92 (3543) 81 (3429) 75 (2428)

Emissions* (Nominal)

NOx mg/Nm³ (g/hp-h) 4103.7 (7.72) 4103.7 (7.72) 4524.1 (8.21) 4411.8 (8.17)
CO mg/Nm³ (g/hp-h) 153.1 (0.32) 153.1 (0.32) 133.5 (0.27) 125.9 (0.26)
HC mg/Nm³ (g/hp-h) 52.3 (0.13) 52.3 (0.13) 81.8 (0.19) 92.1 (0.22)
PM mg/Nm³ (g/hp-h) 10.4 (0.03) 10.4 (0.03) 18.5 (0.04) 21.4 (0.05)

Emissions* (Potential Site Variation)

NOx mg/Nm³ (g/hp-h) 4924.5 (9.26) 4924.5 (9.26) 5429.0 (9.86) 5294.1 (9.81)
CO mg/Nm³ (g/hp-h) 275.5 (0.57) 275.5 (0.57) 240.3 (0.48) 226.6 (0.47)
HC mg/Nm³ (g/hp-h) 69.5 (0.17) 69.5 (0.17) 108.8 (0.25) 122.5 (0.29)
PM mg/Nm³ (g/hp-h) 14.5 (0.04) 14.5 (0.04) 25.9 (0.06) 30.0 (0.07)

*mg/Nm³ levels are corrected to 5% O₂. Contact your local Cat dealer for further information.
## Package Performance

### Low Emissions

<table>
<thead>
<tr>
<th>Performance</th>
<th>Standby</th>
<th>Mission Critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>50 Hz</td>
<td>50 Hz</td>
</tr>
<tr>
<td>Gen set power rating with fan</td>
<td>2400 e kW</td>
<td>2400 e kW</td>
</tr>
<tr>
<td>Gen set power rating with fan @ 0.8 power factor</td>
<td>3000 kVA</td>
<td>3000 kVA</td>
</tr>
<tr>
<td>Emissions</td>
<td>Low Emissions</td>
<td>Low Emissions</td>
</tr>
<tr>
<td>Performance number</td>
<td>DM8716-03</td>
<td>EM0670-02</td>
</tr>
</tbody>
</table>

### Fuel Consumption

<table>
<thead>
<tr>
<th>Load Conditions</th>
<th>Standby – L/hr (gal/hr)</th>
<th>Mission Critical – L/hr (gal/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% load with fan</td>
<td>667.5 (176.3)</td>
<td>667.5 (176.3)</td>
</tr>
<tr>
<td>75% load with fan</td>
<td>535.5 (141.5)</td>
<td>535.5 (141.5)</td>
</tr>
<tr>
<td>50% load with fan</td>
<td>357.2 (94.4)</td>
<td>357.2 (94.4)</td>
</tr>
<tr>
<td>25% load with fan</td>
<td>200.2 (52.9)</td>
<td>200.2 (52.9)</td>
</tr>
</tbody>
</table>

### Cooling System

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Standby – kPa (in. water)</th>
<th>Mission Critical – kPa (in. water)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiator air flow restriction</td>
<td>0.12 (0.48)</td>
<td>0.12 (0.48)</td>
</tr>
<tr>
<td>Radiator air flow – m³/min (cfm)</td>
<td>2074 (73242)</td>
<td>2074 (73242)</td>
</tr>
<tr>
<td>Engine coolant capacity – L (gal)</td>
<td>303.5 (80.2)</td>
<td>303.5 (80.2)</td>
</tr>
<tr>
<td>Radiator coolant capacity – L (gal)</td>
<td>579.0 (152.0)</td>
<td>579.0 (152.0)</td>
</tr>
<tr>
<td>Total coolant capacity – L (gal)</td>
<td>882.5 (232.2)</td>
<td>882.5 (232.2)</td>
</tr>
</tbody>
</table>

### Inlet Air

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Standby – m³/min (cfm)</th>
<th>Mission Critical – m³/min (cfm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustion air inlet flow rate</td>
<td>215.3 (7601.2)</td>
<td>215.3 (7601.2)</td>
</tr>
</tbody>
</table>

### Exhaust System

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Standby – °C (°F)</th>
<th>Mission Critical – °C (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust stack gas temperature</td>
<td>499.7 (931.4)</td>
<td>499.7 (931.4)</td>
</tr>
<tr>
<td>Exhaust gas flow rate – m³/min (cfm)</td>
<td>578.2 (20418.0)</td>
<td>578.2 (20418.0)</td>
</tr>
<tr>
<td>Exhaust system backpressure</td>
<td>6.7 (27.0)</td>
<td>6.7 (27.0)</td>
</tr>
</tbody>
</table>

### Heat Rejection

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Standby – kW (Btu/min)</th>
<th>Mission Critical – kW (Btu/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat rejection to jacket water</td>
<td>1269 (72155)</td>
<td>1269 (72155)</td>
</tr>
<tr>
<td>Heat rejection to exhaust (total)</td>
<td>2595 (147577)</td>
<td>2595 (147577)</td>
</tr>
<tr>
<td>Heat rejection to aftercooler</td>
<td>287 (16311)</td>
<td>287 (16311)</td>
</tr>
<tr>
<td>Heat rejection to atmosphere from engine</td>
<td>185 (10507)</td>
<td>185 (10507)</td>
</tr>
<tr>
<td>Heat rejection from alternator</td>
<td>92 (5243)</td>
<td>92 (5243)</td>
</tr>
</tbody>
</table>

### Emissions* (Nominal)

<table>
<thead>
<tr>
<th>Emissions</th>
<th>Standby – mg/Nm³ (g/hp-h)</th>
<th>Mission Critical – mg/Nm³ (g/hp-h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>2068.2 (4.20)</td>
<td>2068.2 (4.20)</td>
</tr>
<tr>
<td>CO</td>
<td>285.3 (0.63)</td>
<td>285.3 (0.63)</td>
</tr>
<tr>
<td>HC</td>
<td>37.1 (0.09)</td>
<td>37.1 (0.09)</td>
</tr>
<tr>
<td>PM</td>
<td>15.4 (0.04)</td>
<td>15.4 (0.04)</td>
</tr>
</tbody>
</table>

### Emissions* (Potential Site Variation)

<table>
<thead>
<tr>
<th>Emissions</th>
<th>Standby – mg/Nm³ (g/hp-h)</th>
<th>Mission Critical – mg/Nm³ (g/hp-h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>2481.8 (5.04)</td>
<td>2481.8 (5.04)</td>
</tr>
<tr>
<td>CO</td>
<td>513.5 (1.13)</td>
<td>513.5 (1.13)</td>
</tr>
<tr>
<td>HC</td>
<td>49.3 (0.13)</td>
<td>49.3 (0.13)</td>
</tr>
<tr>
<td>PM</td>
<td>21.6 (0.06)</td>
<td>21.6 (0.06)</td>
</tr>
</tbody>
</table>

*mg/Nm³ levels are corrected to 5% O₂. Contact your local Cat dealer for further information.
Weights and Dimensions

<table>
<thead>
<tr>
<th>Dim “A” (mm (in))</th>
<th>Dim “B” (mm (in))</th>
<th>Dim “C” (mm (in))</th>
<th>Dry Weight (kg (lb))</th>
</tr>
</thead>
<tbody>
<tr>
<td>7908 (311.4)</td>
<td>2753 (108.4)</td>
<td>3306 (130.1)</td>
<td>23,020 (50,750)</td>
</tr>
</tbody>
</table>

Note: For reference only. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.

Ratings Definitions

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.

Mission Critical
Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the mission critical power rating. Typical peak demand up to 100% of rated power for up to 5% of the operating time. 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.

Continuous
Output available with non-varying load for an unlimited time. Average power output is 70-100% of the continuous power rating. Typical peak demand is 100% of continuous rated kW for 100% of the operating hours.

Applicable Codes and Standards

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

Data Center Applications
- ISO 8528-1 Data Center Power (DCP) compliant per DCP application of Cat diesel generator set prime power rating.
- All ratings Tier III/Tier IV compliant per Uptime Institute requirements.
- All ratings ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

Fuel Rates
Fuel rates are based on fuel oil of 35º API [16ºC (60°F)] gravity having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 29ºC (85ºF) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.)