Cat® C175-16
Diesel Generator Sets

Standard Features

Cat® Diesel Engine
• Designed and optimized for low fuel consumption
• Reliable performance proven in thousands of applications worldwide

Generator Set Package
• Accepts 100% block load in one step and meets other 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

Bore – mm (in) | 175 (6.89)
Stroke – mm (in) | 220 (8.66)
Displacement – L (in³) | 84.7 (6456.31)
Compression Ratio | 16.7:1
Aspiration | TA
Fuel System | Common Rail
Governor Type | ADEM™ A4

<table>
<thead>
<tr>
<th>Standby 60 Hz e kW (kVA)</th>
<th>Mission Critical 60 Hz e kW (kVA)</th>
<th>Prime 60 Hz e kW (kVA)</th>
<th>Continuous 60 Hz e kW (kVA)</th>
<th>Emissions Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000 (3750)</td>
<td>3000 (3750)</td>
<td>2725 (3406)</td>
<td>2500 (3125)</td>
<td>Optimized for Low Fuel Consumption</td>
</tr>
</tbody>
</table>

Image shown may not reflect actual configuration
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**
  - 480V
  - 6900V
  - 600V
  - 12470V
  - 4160V
  - 13200V
  - 6300V
  - 13800V
  - 6600V
- **Temperature Rise (over 40°C ambient)**
  - 150°C
  - 125°C/130°C
  - 105°C
  - 80°C
- **Winding Type**
  - Form wound
- **Excitation**
  - Permanent magnet (PM)

### 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 4.2
  - 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

### 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
- UL2200
- CSA
- IBC seismic certification
- OSHPD pre-approval

**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

<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>60 Hz</td>
<td>60 Hz</td>
<td>60 Hz</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Gen set power rating with fan</td>
<td>3000 eKW</td>
<td>3000 eKW</td>
<td>2725 eKW</td>
<td>2500 eKW</td>
</tr>
<tr>
<td>Gen set power rating with fan @ 0.8 power factor</td>
<td>3750 kVA</td>
<td>3750 kVA</td>
<td>3406 kVA</td>
<td>3125 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>DM8451-06</td>
<td>EM0369-01</td>
<td>DM8452-05</td>
<td>DM8453-03</td>
</tr>
</tbody>
</table>

### Fuel Consumption

<table>
<thead>
<tr>
<th>Load</th>
<th>100% load with fan – L/hr (gal/hr)</th>
<th>75% load with fan – L/hr (gal/hr)</th>
<th>50% load with fan – L/hr (gal/hr)</th>
<th>25% load with fan – L/hr (gal/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>806.0 (212.9)</td>
<td>585.1 (154.6)</td>
<td>415.3 (109.7)</td>
<td>250.9 (66.3)</td>
</tr>
<tr>
<td></td>
<td>(212.9)</td>
<td>(154.6)</td>
<td>(109.7)</td>
<td>(66.3)</td>
</tr>
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<td>806.0 (212.9)</td>
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</tr>
<tr>
<td></td>
<td>(212.9)</td>
<td>(154.6)</td>
<td>(109.7)</td>
<td>(66.3)</td>
</tr>
<tr>
<td></td>
<td>721.7 (190.6)</td>
<td>529.0 (139.7)</td>
<td>384.2 (101.5)</td>
<td>235.6 (62.2)</td>
</tr>
<tr>
<td></td>
<td>(190.6)</td>
<td>(139.7)</td>
<td>(101.5)</td>
<td>(62.2)</td>
</tr>
<tr>
<td></td>
<td>661.8 (174.8)</td>
<td>498.7 (131.7)</td>
<td>361.1 (95.4)</td>
<td>221.7 (58.6)</td>
</tr>
<tr>
<td></td>
<td>(174.8)</td>
<td>(131.7)</td>
<td>(95.4)</td>
<td>(58.6)</td>
</tr>
</tbody>
</table>

### Cooling System

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Standby</th>
<th>Mission Critical</th>
<th>Prime</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiator air flow restriction (system) – kPa (in. water)</td>
<td>0.12 (0.48)</td>
<td>0.12 (0.48)</td>
<td>0.12 (0.48)</td>
<td>0.12 (0.48)</td>
</tr>
<tr>
<td>Radiator air flow – m³/min (cfm)</td>
<td>2933 (103578)</td>
<td>2933 (103578)</td>
<td>2933 (103578)</td>
<td>2933 (103578)</td>
</tr>
<tr>
<td>Engine coolant capacity – L (gal)</td>
<td>303.5 (80.2)</td>
<td>303.5 (80.2)</td>
<td>303.5 (80.2)</td>
<td>303.5 (80.2)</td>
</tr>
<tr>
<td>Radiator coolant capacity – L (gal)</td>
<td>632 (166)</td>
<td>632 (166)</td>
<td>632 (166)</td>
<td>632 (166)</td>
</tr>
<tr>
<td>Total coolant capacity – L (gal)</td>
<td>935.5 (246.2)</td>
<td>935.5 (246.2)</td>
<td>935.5 (246.2)</td>
<td>935.5 (246.2)</td>
</tr>
</tbody>
</table>

### Inlet Air

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Standby</th>
<th>Mission Critical</th>
<th>Prime</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustion air inlet flow rate – m³/min (cfm)</td>
<td>264.2 (9330.3)</td>
<td>264.2 (9330.3)</td>
<td>248.2 (8763.4)</td>
<td>232.7 (8217.9)</td>
</tr>
</tbody>
</table>

### Exhaust System

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Standby</th>
<th>Mission Critical</th>
<th>Prime</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust stack gas temperature – °C (°F)</td>
<td>479.4 (894.9)</td>
<td>479.4 (894.9)</td>
<td>461.6 (826.9)</td>
<td>444.5 (832.1)</td>
</tr>
<tr>
<td>Exhaust gas flow rate – m³/min (cfm)</td>
<td>693.7 (24495.8)</td>
<td>693.7 (24495.8)</td>
<td>631.8 (22308.8)</td>
<td>578 (20410.7)</td>
</tr>
<tr>
<td>Exhaust system backpressure (maximum allowable) – kPa (in. water)</td>
<td>6.7 (27.0)</td>
<td>6.7 (27.0)</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</th>
<th>Mission Critical</th>
<th>Prime</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat rejection to jacket water – kW (Btu/min)</td>
<td>1370 (77914)</td>
<td>1370 (77914)</td>
<td>1243 (70706)</td>
<td>1161 (66021)</td>
</tr>
<tr>
<td>Heat rejection to exhaust (total) – kW (Btu/min)</td>
<td>3114 (177105)</td>
<td>3114 (177105)</td>
<td>2705 (153816)</td>
<td>2508 (142641)</td>
</tr>
<tr>
<td>Heat rejection to aftercooler – kW (Btu/min)</td>
<td>491 (27913)</td>
<td>491 (27913)</td>
<td>387 (22024)</td>
<td>346 (19675)</td>
</tr>
<tr>
<td>Heat rejection to atmosphere from engine – kW (Btu/min)</td>
<td>182 (10331)</td>
<td>182 (10331)</td>
<td>169 (9632)</td>
<td>165 (9358)</td>
</tr>
<tr>
<td>Heat rejection from alternator – kW (Btu/min)</td>
<td>112 (6369)</td>
<td>112 (6369)</td>
<td>99 (5619)</td>
<td>112 (6386)</td>
</tr>
</tbody>
</table>

### Emissions (Nominal)

<table>
<thead>
<tr>
<th>Emissions</th>
<th>Standby</th>
<th>Mission Critical</th>
<th>Prime</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx mg/Nm³ (g/hp-h)</td>
<td>3639.4 (6.18)</td>
<td>3639.4 (6.18)</td>
<td>3899.6 (6.39)</td>
<td>3669.9 (6.29)</td>
</tr>
<tr>
<td>CO mg/Nm³ (g/hp-h)</td>
<td>279.9 (0.60)</td>
<td>279.9 (0.60)</td>
<td>334.7 (0.70)</td>
<td>372.4 (0.76)</td>
</tr>
<tr>
<td>HC mg/Nm³ (g/hp-h)</td>
<td>43.4 (0.11)</td>
<td>43.4 (0.11)</td>
<td>57.7 (0.14)</td>
<td>59.5 (0.14)</td>
</tr>
<tr>
<td>PM mg/Nm³ (g/hp-h)</td>
<td>13.4 (0.03)</td>
<td>13.4 (0.03)</td>
<td>23.9 (0.06)</td>
<td>20.9 (0.05)</td>
</tr>
</tbody>
</table>

### Emissions (Potential Site Variation)

<table>
<thead>
<tr>
<th>Emissions</th>
<th>Standby</th>
<th>Mission Critical</th>
<th>Prime</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx mg/Nm³ (g/hp-h)</td>
<td>4367.3 (7.41)</td>
<td>4367.3 (7.41)</td>
<td>4679.5 (7.67)</td>
<td>4403.9 (7.54)</td>
</tr>
<tr>
<td>CO mg/Nm³ (g/hp-h)</td>
<td>503.8 (1.07)</td>
<td>503.8 (1.07)</td>
<td>602.5 (1.25)</td>
<td>670.3 (1.38)</td>
</tr>
<tr>
<td>HC mg/Nm³ (g/hp-h)</td>
<td>57.7 (0.14)</td>
<td>57.7 (0.14)</td>
<td>76.7 (0.18)</td>
<td>79.1 (0.19)</td>
</tr>
<tr>
<td>PM mg/Nm³ (g/hp-h)</td>
<td>18.8 (0.05)</td>
<td>18.8 (0.05)</td>
<td>33.5 (0.08)</td>
<td>29.3 (0.07)</td>
</tr>
</tbody>
</table>
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>7947 (312.9)</td>
<td>2889 (113.7)</td>
<td>3410 (134.3)</td>
<td>22,906 (50,500)</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
Tier III/Tier IV compliant per Uptime Institute requirements. ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

Fuel Rates
Fuel rates are based on fuel oil of 35º API [16°C (60ºF)] 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.)