

Cat® C175-20

Diesel Generator Sets



Image shown may not reflect actual configuration

| | |
|-------------------------------------|-----------------|
| Bore – mm (in) | 175 (6.89) |
| Stroke – mm (in) | 220 (8.66) |
| Displacement – L (in ³) | 105.8 (6456.31) |
| Compression Ratio | 15.3:1 |
| Aspiration | TA |
| Fuel System | Common Rail |
| Governor Type | ADEM™ A4 |

| Prime-DCP 60 Hz ekW (kVA) | Emissions Performance |
|------------------------------|---|
| 3500 (4375) | U.S. EPA Certified for Emergency Stationary Applications (Tier 2) |

Features

Cat® Diesel Engine

- Designed and tested to meet the U.S. EPA Emergency Stationary (Tier 2) emission standards
- 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

- 12 months/unlimited hour warranty for prime-DCP 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

Standard and Optional Equipment

Engine

Air Cleaner

- Single element

Muffler

- Industrial grade (15 dB)
- Residential grade (25 dB)
- Critical grade (35 dB)

Starting

- Standard batteries
- Oversized batteries
- Standard electric starter(s)
- Heavy duty electric starter(s)
- Dual electric starter(s)
- Air starter(s)
- Jacket water heater

Alternator

Output voltage

- 4160V 12470V
- 6300V 13200V
- 6600V 13800V
- 6900V

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

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

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)
- Paralleling switchgear
- Paralleling controls

Certifications

- IBC seismic certification
- OSHPD pre-approval

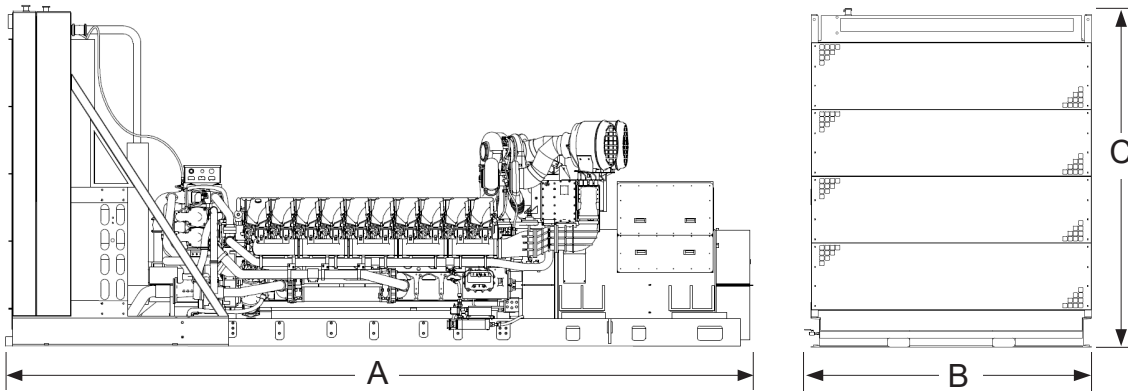
Note: Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

Package Performance

| Performance | Unit | |
|---|------------------|-----------|
| Frequency | 60 Hz | |
| Gen set power rating with fan | 3500 ekW | |
| Gen set power rating with fan @ 0.8 power factor | 4375 kVA | |
| Emissions | EPA ESE (Tier 2) | |
| Performance number | EM5921-00 | |
| Fuel Consumption | | |
| 100% load with fan – L/hr (gal/hr) | 896.0 | (236.7) |
| 75% load with fan – L/hr (gal/hr) | 690.3 | (182.4) |
| 50% load with fan – L/hr (gal/hr) | 564.8 | (149.2) |
| 25% load with fan – L/hr (gal/hr) | 347.6 | (91.8) |
| Cooling System | | |
| Radiator air flow restriction (system) – kPa (in. water) | 0.12 | (0.48) |
| Radiator air flow – m ³ /min (cfm) | 3426 | (120988) |
| Engine coolant capacity – L (gal) | 440.0 | (116.2) |
| Radiator coolant capacity – L (gal) | 845.0 | (223.2) |
| Total coolant capacity – L (gal) | 1285 | (339.2) |
| Inlet Air | | |
| Combustion air inlet flow rate – m ³ /min (cfm) | 315.2 | (11130.1) |
| Exhaust System | | |
| Exhaust stack gas temperature – °C (°F) | 462.7 | (864.9) |
| Exhaust gas flow rate – m ³ /min (cfm) | 787.8 | (27817.3) |
| Exhaust system backpressure (maximum allowable) – kPa (in. water) | 6.7 | (27.0) |
| Heat Rejection | | |
| Heat rejection to jacket water – kW (Btu/min) | 1866 | (106103) |
| Heat rejection to exhaust (total) – kW (Btu/min) | 3490 | (198468) |
| Heat rejection to aftercooler – kW (Btu/min) | 342 | (19425) |
| Heat rejection to atmosphere from engine – kW (Btu/min) | 194 | (11028) |
| Heat rejection from alternator – kW (Btu/min) | 153 | (8724) |
| Emissions* (Nominal) | | |
| NOx mg/Nm ³ (g/hp-h) | 2755.6 | (5.73) |
| CO mg/Nm ³ (g/hp-h) | 148.5 | (0.37) |
| HC mg/Nm ³ (g/hp-h) | 15.0 | (0.04) |
| PM mg/Nm ³ (g/hp-h) | 16.8 | (0.05) |
| Emissions* (Potential Site Variation) | | |
| NOx mg/Nm ³ (g/hp-h) | 3306.7 | (6.87) |
| CO mg/Nm ³ (g/hp-h) | 267.3 | (0.67) |
| HC mg/Nm ³ (g/hp-h) | 19.9 | (0.06) |
| PM mg/Nm ³ (g/hp-h) | 23.5 | (0.06) |

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

Weights and Dimensions



| Dim "A" mm (in) | Dim "B" mm (in) | Dim "C" mm (in) | Dry Weight kg (lb) |
|--------------------|--------------------|--------------------|-----------------------|
| 8402 (330.8) | 3249 (127.9) | 3828 (150.7) | 30 000 (66,200) |

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

Ratings Definitions

Prime-DCP

For data center applications only. Prime-DCP power output available with varying load for unlimited time. Average power output is not to exceed 100% of prime-DCP rated kW. Typical peak demand is 100% of the prime-DCP 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.

Applicable Codes and Standards

AS 1359, CSA C22.2 No. 100-04, UL 142, UL 489, UL 869, UL 2200, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU and facilitates compliance to NFPA 37, NFPA 70, NFPA 99, NFPA 110.

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 Cat diesel generator set prime-DCP 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 consumption reported in accordance with ISO 3046-1, 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 15°C (59°F) and weighing 850 g/liter (7.0936 lbs/U.S. gal.) All fuel consumption values refer to rated engine power.

www.cat.com/electricpower

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