

Cat® C175-16

Diesel Generator Sets

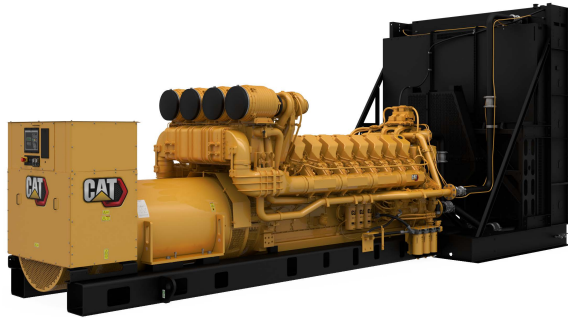


Image shown may not reflect actual configuration

Bore – mm (in)	175 (6.89)
Stroke – mm (in)	220 (8.66)
Displacement – L (in ³)	84.7 (5166.88)
Compression Ratio	16.7:1
Aspiration	TA
Fuel System	Common Rail
Governor Type	ADEM™ A4

Prime-DCP 50 Hz kVA (ekW)	Emissions Performance
2725 (2180)	Optimized for Low Fuel Consumption

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

- 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
- ☐ 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 ☐ 6600V
- ☐ 400V ☐ 6900V
- ☐ 415V ☐ 10000V
- ☐ 3300V ☐ 10500V
- ☐ 6300V ☐ 11000V

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

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

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

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

Performance	Prime-DCP
Frequency	50 Hz
Gen set power rating with fan	2180 ekW
Gen set power rating with fan @ 0.8 power factor	2725 kVA
Emissions	Low Fuel
Performance number	EM5878-00

Fuel Consumption

100% load with fan – L/hr (gal/hr)	541.8	(143.1)
75% load with fan – L/hr (gal/hr)	415.8	(109.9)
50% load with fan – L/hr (gal/hr)	297.7	(78.7)
25% load with fan – L/hr (gal/hr)	181.1	(47.9)

Cooling System

Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)
Radiator air flow – m ³ /min (cfm)	2074	(73242)
Engine coolant capacity – L (gal)	303.5	(80.2)
Radiator coolant capacity – L (gal)	579.0	(152.0)
Total coolant capacity – L (gal)	882.5	(232.2)

Inlet Air

Combustion air inlet flow rate – m ³ /min (cfm)	175.7	(6205.3)
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Exhaust System

Exhaust stack gas temperature – °C (°F)	476.2	(889.2)
Exhaust gas flow rate – m ³ /min (cfm)	456.9	(16132.1)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)

Heat Rejection

Heat rejection to jacket water – kW (Btu/min)	1047	(59569)
Heat rejection to exhaust (total) – kW (Btu/min)	2063	(117309)
Heat rejection to aftercooler – kW (Btu/min)	188	(10714)
Heat rejection to atmosphere from engine – kW (Btu/min)	165	(9356)
Heat rejection from alternator – kW (Btu/min)	81	(4629)

Emissions* (Nominal)

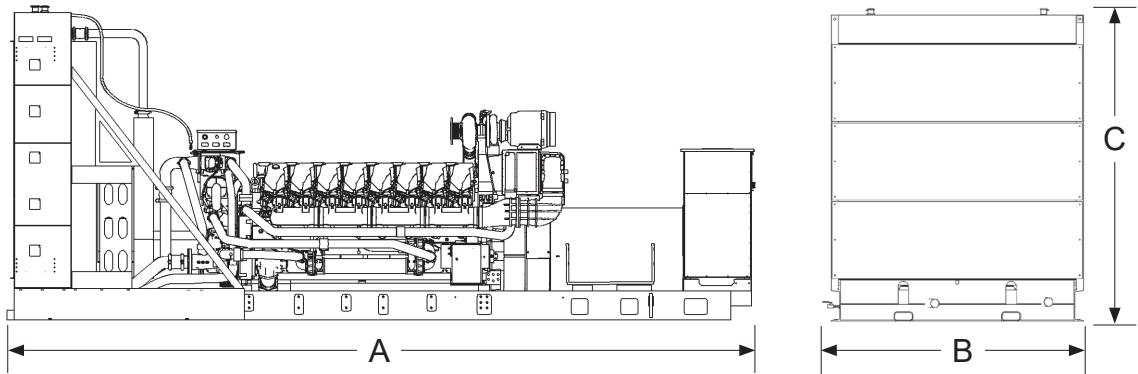
NOx mg/Nm ³ (g/hp-h)	4524.1	(8.21)
CO mg/Nm ³ (g/hp-h)	133.5	(0.27)
HC mg/Nm ³ (g/hp-h)	81.8	(0.19)
PM mg/Nm ³ (g/hp-h)	18.5	(0.04)

Emissions* (Potential Site Variation)

NOx mg/Nm ³ (g/hp-h)	5429.0	(9.86)
CO mg/Nm ³ (g/hp-h)	240.3	(0.48)
HC mg/Nm ³ (g/hp-h)	108.8	(0.25)
PM mg/Nm ³ (g/hp-h)	25.9	(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)
7908 (311.4)	2753 (108.4)	3306 (130.1)	23 020 (50,750)

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 ekW. Typical peak demand is 100% of the prime-DCP rated ekW 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, 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.

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The International System of Units (SI) is used in this publication.