

Cat[®] C175-16 Diesel Generator Sets



Bore – mm (in)	175 (6.89)				
Stroke – mm (in)	220 (8.66)				
Displacement – L (in ³)	84.7 (6456.31)				
Compression Ratio	16.7:1				
Aspiration	TA				
Fuel System	Common Rail				
Governor Type	ADEM™ A4				

Image shown may not reflect actual configuration

Standby 50 Hz kVA (ekW)	Mission Critical 50 Hz kVA (ekW)	Prime 50 Hz kVA (ekW)	Continuous 50 Hz kVA (ekW)	Emissions Performance
3000 (2400)	3000 (2400)	2725 (2180)	2500 (2000)	Optimized for Low Fuel Consumption
3000 (2400)	3000 (2400)	_	—	Optimized for Low Emissions

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 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

Optional Equipment

Engine

Air Cleaner

Single elementDual 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

Туре

Bus bar
Circuit breaker
4000A 5000A
UL IEC
3-pole
Electrically operated

Trip Unit

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

RubberSpringSeismic 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

- IBC seismic certification
- EU Certification of
- Conformance (CE)
- EEC Declaration of Conformity

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	Sta	andby	Missio	n Critical	Р	rime	Cont	inuous
Frequency	5	0 Hz	50 Hz		50 Hz		50 Hz	
Gen set power rating with fan	2400 ekW		2400 ekW		2180 ekW		2000 ekW	
Gen set power rating with fan @ 0.8 power factor	3000 kVA		3000 kVA		2725 kVA		2500 kVA	
Emissions	Lov	v Fuel	Low Fuel		Low Fuel		Low Fuel	
Performance number	DM8	719-03	EM0371-02		DM8720-05		DM8	721-04
Fuel Consumption								
100% load with fan – L/hr (gal/hr)	595.9	(157.4)	595.9	(157.4)	541.7	(143.1)	500.1	(132.1)
75% load with fan – L/hr (gal/hr)	452.8	(119.7)	452.8	(119.7)	415.8	(109.9)	387.2	(102.3)
50% load with fan – L/hr (gal/hr)	321.2	(84.9)	321.2	(84.9)	297.7	(78.6)	278.2	(73.5)
25% load with fan – L/hr (gal/hr)	192.6	(50.8)	192.6	(50.8)	181.1	(47.8)	171.9	(45.4)
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	(152)	579	(152)	579	(152)	579	(152)
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 – m ³ /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	(65983)	1160	(65983)	1047	(59569)	961	(54650)
Heat rejection to exhaust (total) – kW (Btu/min)	2264	(128724)	2264	(128724)	2063	(117309)	1919	(109160)
Heat rejection to aftercooler – kW (Btu/min)	221	(12570)	221	(12570)	188	(10714)	168	(9531)
Heat rejection to atmosphere from engine – kW (Btu/min)	171	(9742)	171	(9742)	165	(9356)	162	(9209)
Heat rejection from alternator – kW (Btu/min)	92	(5243)	92	(5243)	81	(4629)	75	(4248)
Emissions (Nominal)								
NOx mg/Nm ³ (g/hp-h)	4103.7	(7.72)	4103.7	(7.72)	4524.1	(8.21)	4411.8	(8.17)
CO mg/Nm ³ (g/hp-h)	153.1	(0.32)	153.1	(0.32)	133.5	(0.27)	125.9	(0.26)
HC mg/Nm ³ (g/hp-h)	52.3	(0.13)	52.3	(0.13)	81.8	(0.19)	92.1	(0.22)
PM mg/Nm ³ (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/Nm ³ (g/hp-h)	4924.5	(9.26)	4924.5	(9.26)	5429.0	(9.86)	5294.1	(9.81)
CO mg/Nm ³ (g/hp-h)	275.5	(0.57)	275.5	(0.57)	240.3	(0.48)	226.6	(0.47)
HC mg/Nm ³ (g/hp-h)	69.5	(0.17)	69.5	(0.17)	108.8	(0.25)	122.5	(0.29)
PM mg/Nm ³ (g/hp-h)	14.5	(0.04)	14.5	(0.04)	25.9	(0.06)	30.0	(0.07)



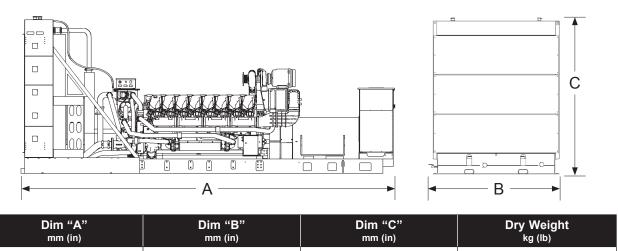
Package Performance

Low Emissions

Performance	Sta	ndby	Missio	n Critical	
Frequency	50) Hz	50 Hz		
Gen set power rating with fan	240	0 ekW	240	0 ekW	
Gen set power rating with fan @ 0.8 power factor	300	0 kVA	3000 kVA		
Emissions	Low E	missions	Low Emissions		
Performance number	DM8	716-03	EM0670-02		
Fuel Consumption					
100% load with fan – L/hr (gal/hr)	646.2	(170.7)	646.2	(170.7)	
75% load with fan – L/hr (gal/hr)	518.4	(137)	518.4	(137)	
50% load with fan – L/hr (gal/hr)	345.8	(91.4)	345.8	(91.4)	
25% load with fan – L/hr (gal/hr)	193.8	(51.2)	193.8	(51.2)	
Cooling System			-		
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	
Radiator air flow – m³/min (cfm)	2074	(73242)	2074	(73242)	
Engine coolant capacity – L (gal)	303.5	(80.2)	303.5	(80.2)	
Radiator coolant capacity – L (gal)	579	(152)	579	(152)	
Total coolant capacity – L (gal)	882.5	(232.2)	882.5	(232.2)	
Inlet Air	•				
Combustion air inlet flow rate – m³/min (cfm)	215.3	(7601.2)	215.3	(7601.2)	
Exhaust System					
Exhaust stack gas temperature – °C (°F)	499.7	(931.4)	499.7	(931.4)	
Exhaust gas flow rate – m³/min (cfm)	578.2	(20418.0)	578.2	(20418.0)	
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)	6.7	(27.0)	
Heat Rejection					
Heat rejection to jacket water – kW (Btu/min)	1269	(72155)	1269	(72155)	
Heat rejection to exhaust (total) – kW (Btu/min)	2595	(147577)	2595	(147577)	
Heat rejection to aftercooler – kW (Btu/min)	287	(16311)	287	(16311)	
Heat rejection to atmosphere from engine – kW (Btu/min)	185	(10507)	185	(10507)	
Heat rejection from alternator – kW (Btu/min)	92	(5243)	92	(5243)	
Emissions (Nominal)					
NOx mg/Nm ³ (g/hp-h)	2068.2	(4.20)	2068.2	(4.20)	
CO mg/Nm ³ (g/hp-h)	285.3	(0.63)	285.3	(0.63)	
HC mg/Nm ³ (g/hp-h)	37.1	(0.09)	37.1	(0.09)	
PM mg/Nm ³ (g/hp-h)	15.4	(0.04)	15.4	(0.04)	
Emissions (Potential Site Variation)					
NOx mg/Nm ³ (g/hp-h)	2481.8	(5.04)	2481.8	(5.04)	
CO mg/Nm ³ (g/hp-h)	513.5	(1.13)	513.5	(1.13)	
HC mg/Nm ³ (g/hp-h)	49.3	(0.13)	49.3	(0.13)	
PM mg/Nm ³ (g/hp-h)	21.6	(0.06)	21.6	(0.06)	
		()		(,	



Weights and Dimensions



							-	
Note: For reference only.	Do not us	se for installation desig	n Contact	vour local Ca	at dealer for	nrecise we	ights and dimension	ons
Note. I of reference only.	Donotus	30 101 mistanation acoigi	1. 00111001	your 10001 00	at actaict tot		igino ana annonoio	<i>л</i> го.

2756 (108.5)

Ratings Definitions

7900 (311.0)

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 ekW 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

3307 (130.2)

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU.

23 020 (50,750)

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 Consumption reported in accordance with ISO 3046-1.

www.cat.com/electricpower ©2017 Caterpillar All rights reserved.

Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

CAT, CATERPILLAR, their respective logos, ADEM, "Caterpillar Yellow", the "Power Edge" trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.