DIESEL GENERATOR SET





Image shown may not reflect actual package.

FEATURES

FUEL/EMISSIONS STRATEGY

• EPA Certified for Stationary Emergency Application (EPA Tier 2 emissions levels)

DESIGN CRITERIA

• The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response

UL 2200 / CSA – Optional

- UL 2200 Listed packages
- CSA Certified

Certain restrictions may apply. Consult with your Cat[®] Dealer.

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested
- Flexible packaging options for easy and cost effective installation

SINGLE-SOURCE SUPPLIER

• Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Cat dealers provide extensive post sale support including maintenance and repair agreements
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- The Cat S•O•S[™] program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

PRIME 545 ekW 681 kVA 60 Hz 1800 rpm 480 Volts

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

CAT C18 ATAAC DIESEL ENGINE

- Utilizes ACERT™ Technology
- Reliable, rugged, durable design
- · Field-proven in thousands of applications worldwide
- Four-stroke-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic controlled governor

CAT GENERATOR

- Matched to the performance and output characteristics of Cat engines
- UL 1446 Recognized Class H insulation
- CSA Certified

CAT EMCP 4 CONTROL PANELS

- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway
- Integrated Voltage Regulation

SEISMIC CERTIFICATION

- Seismic Certification available
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength.

IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer

• Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010 60 Hz 1800 rpm 480 Volts



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Disposable air filter	[] Canister type, dual element [] Heavy duty air cleaner
Cooling	Package mounted radiator	
Exhaust	Exhaust flange outlet	[] Industrial [] Residential / Critcal
Fuel	 Primary fuel filter with integral water separator Secondary fuel filters Fuel priming pump 	
Generator	 Matched to the performance and output characteristics of Cat engines IP23 Protection Internal excitation (IE) 	[] Permanent magnet excitation (PMG)[] Anti-condensation space heater[] Coastal insulation protection
Power Termination	Power terminal strips	[] Circuit breakers – 100% rated assembly, UL Listed [] SUSE (Suitable for use as service equipment)
Control Panels	• EMCP 4.2	[] EMCP 4.3 [] EMCP 4.4 [] Local and remote annuniciator modules [] Remote monitoring software
Mounting	Rubber vibration isolators	
Starting/Charging	 24 volt starting motor & charging alternator Batteries 	[] Battery chargers [] Oversize batteries [] Jacket water heater
General	 Paint - Caterpillar Yellow except rails and radiators gloss black Narrow skid base 	The following options are based on regional and product configuration:[] Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010[] UL 2200 Listed package[] CSA Certified[] Wide skid base[] Sound attenuated enclosure[] Weather protective enclosure[] Integral dual wall UL Listed 8 hr fuel tank[] Sub-base dual wall UL Listed 48 hr fuel tank

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SPECIFICATIONS

STANDARD CAT GENERATOR				
Frame size	LC7024F			
Excitation	Internal Excitation			
Pitch	0.6667			
Number of poles	4			
Number of bearings	Single bearing			
Number of leads	12			
Insulation	UL 1446 Recognized Class H with tropicalization and antiabrasion			
IP Rating	IP23			
Alignment	Pilot shaft			
Overspeed capability (%)	125			
Wave form deviation (%)	2			
Voltage regulator	Three phase sensing			
Voltage regulation	+/- 0.25% (steady state)			
- Consult your Cat dealer for other available voltages				
CAT DIESEL ENGINE				
C18 ATAAC, I-6, 4-Stroke Water-cooled Diesel				
Bore	145.00 mm (5.71 in)			
Stroke	183.00 mm (7.2 in)			
Displacement	18.13 L (1106.36 in ³)			

Displacement	18.13 L (1106.36 in ³)	
Compression ratio	14.5:1	
Aspiration	Air-to-air aftercooled	
Fuel system	MEUI	
Governor type	Caterpillar ADEM control system	

CAT EMCP 4 SERIES CONTROLS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed and Voltage Adjust
- Engine Cycle Crank
- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions

Digital indication for:

- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- ekW, kVA, kVAR, kW-hr, %kW, PF (4.2 only)

Warning/shutdown with common LED indication of:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level

Programmable protective relaying functions:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32) (4.2 only)
- Reverse reactive power (kVAr) (32RV)
- Overcurrent (50/51)

Communications:

- Four digital inputs (4.1)
- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU) (4.2 only)
- Accessory module data link (4.2 only)
- Serial annunciator module data link (4.2 only)
- Emergency stop pushbutton

Compatible with the following:

- Digital I/O module
- Local Annunciator
- Remote CAN annunciator
- Remote serial annunciator

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TECHNICAL DATA

Open Generator Set 1800 rpm/60 Hz/480 Volts		DM8522	
EPA Certified for Stationary Emergency Application (EPA Tier 2 emissions levels)			
Generator Set Package Performance Genset power rating @ 0.8 pf Genset power rating with fan		681.25 kVA 545 ekW	
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	151.1 L/hr 123.5 L/hr 89.2 L/hr	39.9 gal/hr 32.6 gal/hr 23.6 gal/hr	
Cooling System1 Air flow restriction (system) Air flow (max @ rated speed for radiator arrangement) Engine Coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity	0.12 kPa 568 m³/min 54.9L 20.8 L 34.1 L	0.48 in. water 20059 cfm 14.5 gal 5.5 gal 9.0 gal	
Inlet Air Combustion air inlet flow rate	46.7 m³/min	1649.2 cfm	
Exhaust System Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	518.2°C 129.6 m³/min 203 mm 10.0 kPa	964.8°F 4576.8 cfm 8 in 40.2 in. water	
Heat Rejection Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to aftercooler Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	175 kW 56 kW 142 kW 83.0 kW 36.0 kW	9952 Btu/min 33894 Btu/min 8076 Btu/min 4720 Btu/min 2047.3 Btu/min	
Alternator ² Motor starting capability @ 30% voltage dip Frame Temperature rise	1633 skV LC7024F 125°C	225°F	
Lubrication System Sump refill with filter	64.0 L	16.9 gal	
Emissions (Nominal)3 NOx g/hp-hr CO g/hp-hr HC g/hp-hr PM g/hp-hr	5.16 g/hp-hr 0.41 g/hp-hr 0.01 g/hp-hr 0.33 g/hp-hr		

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² Generator temperature rise is based on a 40^o C (104^o F) ambient per NEMA MG1-32. Some packages may have oversized generators with a different temperature rise and motor starting characteristics.

³ Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

60 Hz 1800 rpm 480 Volts



RATING DEFINITIONS AND CONDITIONS

Applicable Codes and Standards:

AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33.

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 opeation cannot exceed 25 hours per year.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions. 60 Hz 1800 rpm 480 Volts



DIMENSIONS

Package Dimensions					
Length	3361 mm	132.3 in			
Width	1580 mm	62.2 in			
Height	2078 mm	81.8 in			

NOTE: For reference only – do not use for installation design. Please contact your local dealer for exact weight and dimensions.

Performance No.: DM8522

Feature Code: C18DE6E

Gen. Arr. Number: 4183897

Source: U.S. Sourced

EPD0219 (06/13)

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