DIESEL GENERATOR SET

Image shown may not reflect actual package.

STANDBY
1000 ekW 1250 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.

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

CAT® C32 ATAAC DIESEL ENGINE
- Utilizes ACERT™ Technology
- Reliable, rugged, durable design
- Four-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic engine control

CAT GENERATOR
- Designed to match the performance and output characteristics of Cat diesel engines
- Single point access to accessory connections
- UL 1446 recognized Class H insulation

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

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, CBC 2007
- Pre-approved by OSHPD and carries an OSP-0084-10 for use in healthcare projects in California

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FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Single element canister type air cleaner • Service indicator	[ ] Dual element air cleaners [ ] Air inlet adapters
Cooling	• Radiator with guard • Coolant drain line with valve • Fan and belt guards • Cat Extended Life Coolant • Coolant level sensors • Radiator duct flange	[ ] Jacket water heater
Exhaust	• Dry exhaust manifold • Flanged faced outlets	[ ] Stainless steel exhaust flex fittings [ ] Elbows, flanges, expanders & Y adapters
Fuel	• Primary fuel filter with water separator • Secondary fuel filter • Fuel priming pump • Flexible fuel lines • Fuel cooler	
Cat Generator	• Class H insulation • Cat Digital Voltage Regulator (CDVR) with kVAR/PF control, 3-phase sensing • Reactive droop	[ ] Oversize & premium generators [ ] Winding temperature detectors [ ] Anti-condensation heaters [ ] Bearing temperature detectors
Power Termination	• Bus bar (NEMA or IEC mechanical lug holes) • Top cable entry	[ ] Circuit breakers, UL listed, 3 pole with shunt trip, 100% rated, manual or electrically operated [ ] Circuit breakers, IEC compliant, 3 or 4 pole with shunt trip, manual or electrically operated [ ] Bottom cable entry [ ] Power terminations can be located on the right, left and/or rear as an option. Multiple circuit breaker options
Governor	• ADEM™ A4	[ ] Load Share Module
Control Panels	• EMCP 4.2 • User Interface panel (UIP) - rear mount • AC & DC customer wiring area (right side) • Emergency stop pushbutton	[ ] EMCP 4.3 ... [ ] EMCP 4.4 [ ] Option for right or left mount UIP [ ] Local & remote annunciator modules [ ] Digital I/O Module [ ] Generator temperature monitoring & protection [ ] Remote monitoring software
Lube	• Lubricating oil and filter • Oil drain line with valves • Fumes disposal • Gear type lube oil pump	
Mounting	• Rails - engine / generator / radiator mounting • Rubber anti-vibration mounts (shipped loose)	[ ] Spring-type vibration isolator [ ] IBC Isolators
Starting/Charging	• 24 volt starting motor(s) • Batteries with rack and cables • Battery disconnect	[ ] Battery chargers (10 amp) [ ] 45 amp charging alternator [ ] Oversize batteries [ ] Ether starting aid
General	• Right-hand service • Paint - Caterpillar Yellow (except rails and radiators that are gloss black) • SAE standard rotation • Flywheel and Flywheel housing - SAE No. 0	[ ] CSA certification [ ] EU Declaration of Incorporation [ ] EEC Declaration of Conformity [ ] Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007

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SPECIFICATIONS

CAT GENERATOR

Frame size..... 1402
Excitation.....Internal Excitation
Pitch.....0.6667
Number of poles.....4
Number of bearings..... 2
Number of Leads.....006
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion
- Consult your Caterpillar dealer for available voltages
IP Rating.....IP23
Alignment.....Closed Coupled
Overspeed capability.....125
Wave form Deviation (Line to Line)..... 002.00
Voltage regulator.....3 Phase sensing with selectible volts/Hz
Voltage regulation.....Less than +/- 1/2% (steady state)
Less than +/- 1% (no load to full load)

CAT DIESEL ENGINE

C32 TA, V-12, 4-Stroke Water-cooled Diesel
Bore..... 145.00 mm (5.71 in)
Stroke..... 162.00 mm (6.38 in)
Displacement.....32.10 L (1958.86 in^3)
Compression Ratio..... 15.0:1
Aspiration.....TA
Fuel System..... MEUI
Governor Type.....ADEM™ A4

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

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)
- Reverse reactive power (kVAr) (32RV)
- Overcurrent (50/51)

Communications:
- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link
- 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	DM9933	
EPA Certified for Stationary Emergency Application (EPA Tier 2 emissions levels)		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1250 kVA	
Genset Power rating with fan	1000 ekW	
Fuel Consumption		
100% load with fan	272.1 L/hr	71.9 Gal/hr
75% load with fan	213.4 L/hr	56.4 Gal/hr
50% load with fan	144.7 L/hr	38.2 Gal/hr
Cooling System[1]		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Engine coolant capacity	55.0 L	14.5 gal
Inlet Air		
Combustion air inlet flow rate	87.6 m³/min	3093.6 cfm
Exhaust System		
Exhaust stack gas temperature	476.4 ° C	889.5 ° F
Exhaust gas flow rate	228.4 m³/min	8065.9 cfm
Exhaust flange size (internal diameter)	203 mm	8 in
Exhaust system backpressure (maximum allowable)	10.0 kPa	40.2 in. water
Heat Rejection		
Heat rejection to coolant (total)	352 kW	20018 Btu/min
Heat rejection to exhaust (total)	1024 kW	58235 Btu/min
Heat rejection to aftercooler	288 kW	16379 Btu/min
Heat rejection to atmosphere from engine	127 kW	7222 Btu/min
Heat rejection to atmosphere from generator	62.7 kW	3565.7 Btu/min
Alternator[2]		
Motor starting capability @ 30% voltage dip	2734 skVA	
Frame	1402	
Temperature Rise	125 ° C	225 ° F
Lube System		
Sump refill with filter	99.0 L	26.2 gal
Emissions (Nominal)[3]		
NOx g/hp-hr	4.93 g/hp-hr	
CO g/hp-hr	.13 g/hp-hr	
HC g/hp-hr	.01 g/hp-hr	
PM g/hp-hr	.018 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] UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40ºC ambient per NEMA MG1-32.

[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 77ºF, 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.

RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, UL508A, 72/23/EEC, 98/37/EC, 2004/108/EC

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. Standby power in accordance with ISO8528. Fuel stop power in accordance with ISO3046. Standby ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the shutdown temperature.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

Fuel rates are 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 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Cat representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

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DIMENSIONS

Package Dimensions		
Length	4474.2 mm	176.15 in
Width	2010.4 mm	79.15 in
Height	2173.7 mm	85.58 in

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #).

Performance No.: DM9933

Feature Code: C32DR41

Gen. Arr. Number: 3002236

Source: U.S. Sourced

July 10 2012

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