Diesel Generator Set

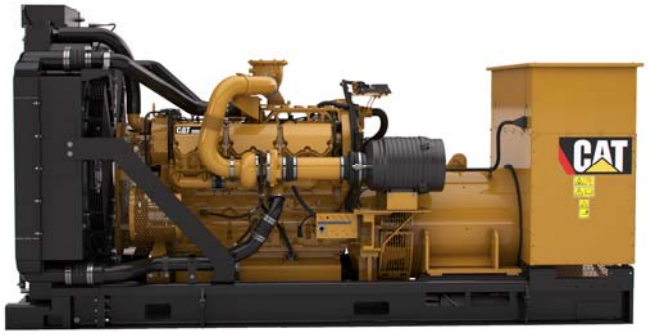


Image shown may not reflect actual package

MISSION CRITICAL
880 ekW 1100 kVA
50 Hz 1500 rpm 400 Volts

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

FUEL/EMISSIONS STRATEGY
- Low fuel consumption

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

UL 2200
- UL 2200 packages available. 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® SOS℠ program 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-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight

CAT GENERATOR
- Matched to the performance and output characteristics of Caterpillar 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

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Factory Installed Standard & Optional Equipment

System	Standard	Optional
Air Inlet	• Single element canister type air cleaner with service indicator	[ ] Dual element air cleaners
Cooling	• Package mounted radiator	
Exhaust	• Exhaust flange outlet	[ ] Mufflers
Fuel	• Secondary fuel filters • Fuel cooler • Fuel priming pump	
Generator	• Matched to the performance and output characteristics of Cat engines	[ ] Oversize & premium generators [ ] Permanent magnet excitation (PMG) [ ] Internal excitation (IE) [ ] Winding temperature detectors [ ] Anti-condensation space heaters
Power Termination	• Bus bar	[ ] Circuit breakers, UL listed [ ] Circuit breakers, IEC listed [ ] Bottom cable entry [ ] Right, left, and/or rear power termination
Governor	• ADEM™ A4	[ ] Load share module
Control Panel	• EMCP 4	[ ] EMCP 4.2 [ ] EMCP 4.3 [ ] EMCP 4.4 [ ] Local & remote annunciator modules [ ] Digital I/O Module [ ] Generator temperature monitoring & protection
Mounting		[ ] Rubber vibration isolators [ ] Spring type vibration isolator [ ] IBC seismic certification
Starting / Charging	• 24 volt starting motor(s) • Battery disconnect switch	[ ] Battery charger [ ] Charging alternator [ ] Batteries with rack [ ] Oversize batteries [ ] Ether starting aids [ ] Heavy duty starting motors [ ] Barring device (manual) [ ] Jacket water heater
General	• Paint – Caterpillar Yellow except rails and radiators gloss black	[ ] UL 2200 listed [ ] CSA Certification

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SPECIFICATIONS

CAT GENERATOR

Frame	1402
Excitation	PM
Pitch	0.6667
Number of poles	4
Number of leads	6
Number of bearings	Single Bearing
Insulation	Class H
IP rating	Drip proof IP23
Over speed capability - % of rated	125%
Wave form deviation	2 %
Voltage regulator	3 phase sensing
Voltage regulation	Less than ±1/2% (steady state) Less than ±1/2% (3% speed change)

CAT DIESEL ENGINE

C32 ATAAC, V-12, 4 stroke, water-cooled diesel

Bore	145.00 mm (5.71 in)
Stroke	162.00 mm (6.38 in)
Displacement	32.10 (1958.86 in^3)
Compression ratio	15.0:1
Aspiration	ATAAC
Fuel system	MEUI
Governor Type	ADEM™ A4

CAT EMCP 4 CONTROL PANELS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed & Voltage Adjust
- Engine Cycle Crank
- Emergency stop pushbutton

EMCP 4.2 controller features:

- 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)
- Power Factor (per phase & average)
- kW (per phase, average & percent)
- kVA (per phase, average & percent)
- kVAr (per phase, average & percent)
- kW-hr & kVAr-hr (total)

Warning/shutdown with common LED indication of shutdowns for:

- 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

- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link

- 6 programmable digital inputs
- 4 programmable relay outputs (Form A)
- 2 programmable relay outputs (Form C)
- 2 programmable digital outputs

Compatible with the following optional modules:

- Digital I/O module
- Local Annunciator
- Remote annunciator
- RTD module
- Thermocouple module

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Technical Data

Open Generator Set - 1500 rpm/50 Hz/400 Volts		
Low Fuel Consumption		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1100 kVA	
Genset Power Rating with fan	880 ekW	
Fuel Consumption		
100% Load with fan	226.3 L/hr	59.8 Gal/hr
75% Load with fan	170.3 L/hr	45.0 Gal/hr
50% Load with fan	117.3 L/hr	31.0 Gal/hr
Cooling System[1]		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	883.0 m3/min	31182 cfm
Engine coolant capacity with radiator	403.5 L	106.6 gal
Engine coolant capacity	233.2 L	61.6 gal
Radiator coolant capacity	170.3 L	45.0 gal
Inlet Air		
Combustion air inlet flow rate	66.0 m^3/min	2332 cfm
Exhaust System		
Exhaust stack gas temperature (engine out)	508.7 °C	947.7 °F
Exhaust gas flow rate	180.1 m^3/min	6359.7 cfm
Exhaust flange size	203.2 mm	8 in
Exhaust system backpressure (maximum allowable)	10 kPa	40.2 in water
Heat Rejection		
Heat rejection to cooolant	319.5 kW	18167 Btu/min
Heat rejection to exhaust (total)	818.1 kW	46518 Btu/min
Heat rejection to aftercooler	180.9 kW	10283 Btu/min
Heat rejection to atmosphere from engine	119.5 kW	6797 Btu/min
Heat rejection to atmosphere from generator	49.3 kW	2806 Btu/min
Alternator[2]		
Motor starting capabiliy @30% voltage dip	2297 skVA	
Frame	1402	
Temperature Rise	150 °C	270 °F
Lube System		
Sump refil with filter	99 L	26.2 gal
Emissions (Nominal)[3]		
NOx g/hp-hr	7.07 g/hp-hr	
CO g/hp-hr	1.14 g/hp-hr	
HC g/hp-hr	0.02 g/hp-hr	
PM g/hp-hr	0.07 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 basd on a 40 degree C ambient per NEMA MG1-32. UL 2200 Listed ppackages 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 ISO8178-1for 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.

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RATING DEFINITIONS AND CONDITIONS

Applicable Codes and Standards:
AS1359,CSAC22.2 No100-04, UL142,UL489, UL601, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110,IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 72/23/EEC, 98/37/EC, 2004/108/EC

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 standby power rating. Typical peak demand up to 100% of standby rated ekW for 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

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

Fuel Rates are based on fuel oil of 35º API [16º C (60º F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29º C (85º 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 Dealer for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat Dealer.

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DIMENSIONS

Package Dimensions		
Length	4234 mm	166.7 in
Width	2010 mm	79.1 in
Height	2174 mm	85.6 in

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

www.Cat-EectricPower.com

Feature Code: C32DR40

Gen. Arr. Number: 432-6118

Sourced: U.S. Sourced

EPD0165-B (10/13)

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