DIESEL GENERATOR SET

CATERPILLAR®

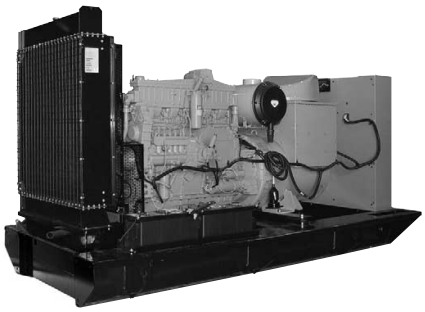

Image shown may not reflect actual package.

PRIME
256 ekW 320 kVA
50 Hz 1500 rpm 400 Volts

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

FEATURES

Fuel Strategy
- Low fuel consumption

FULL RANGE OF ATTACHMENTS
- Wide range of bolt-on system expansion attachments, factory designed and tested

COMPLETE, READY-TO-RUN SYSTEM
- Fully configured generator set
- Full range of attachments and options available

ENCLOSURES (optional)
- Weather protective and sound attenuated

SINGLE-SOURCE SUPPLIER
- Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities
- Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT
- Caterpillar® dealers provide extensive post sale support including maintenance and repair agreements
- Caterpillar dealers fill 99.7% of parts orders within 24 hours
- Caterpillar dealers have over 1,798 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® 3406C TA DIESEL ENGINE
- High efficiency, four-stroke-cycle engine designed for thousands of trouble-free hours of operation
- Field-proven in thousands of applications

CAT SR4B GENERATOR
- Matched to the performance and output characteristics of Caterpillar engines
- Optimum winding pitch for minimum total harmonic distortion and maximum efficiency
- Segregated low voltage, AC/DC accessory box provides single point access to accessory connections
- UL 1446 Recognized Class H insulation

CAT CONTROL PANELS
- Two levels of controls to meet individual customer needs:
  - EMCP II offers digital monitoring, metering, and protection
  - EMCP II+ offers EMCP II features plus full-featured power metering and protective relaying
- UL 508A Listed

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Single element canister type air cleaner • Service indicator	• Dual element air cleaner • Heavy-duty air cleaner • Air inlet shutoff
Cooling	• Radiator with guard • Coolant drain line with valve • Fan and belt guards • Caterpillar Extended Life Coolant	• Radiator duct flange • Jacket water heater with shutoff valves • Low coolant level alarm or shutdown • Heat exchanger and expansion tank
Exhaust	• Stainless steel exhaust flex and ANSI outlet flange • 10 dBA muffler	• 25 dBA muffler • 35 dBA muffler • Elbow kit and through-wall installation kit • Manifold and turbocharger guards
Fuel	• Primary and secondary fuel filters • Fuel priming pump • Flexible fuel lines • Fuel pressure gauge	• Water separator • Manual transfer pump • (3) Automatic transfer systems to choose from • Low fuel level alarm
Generator	• Self excited • Class H insulation • Class F temperature rise (105°C prime/130°C standby) • VR3 Voltage Regulator, 3-phase sensing • Circuit breaker, IEC compliant, 3-pole with shunt trip	• Permanet magnet excited • 2:1 Volts/Hz AVR • Digital Voltage Regulator • Digital Voltage Regulator with KVAR/PF control • Anti-condensation space heater • Reactive droop • Oversize and premium generators (except 292 ekW Prime/320 ekW Standby) • Circuit breaker, IEC Compliant, 4-pole with shunt trip
Governor	• Hydra-mechanical	• Woodward 1724 • Electronic isochronous • Electronic load sharing • Governor control motor
Control Panels	• EMCP II	• Electromechanical auto start/stop panel • EMCP II+ • Switchgear conversion • Customer Communication Module • Local alarm and remote annunciator modules
Lube	• Lubricating oil and filter • Oil drain line with valves • Fumes disposal	• Manual sump pump
Mounting	• Formed steel base with integral fuel tank, 8 hour capacity minimum • Linear vibration isolators between base and engine-generator	• Wide base with integral fuel tank • Extended capacity fuel tank base • Skid base
Starting/Charging	• 45 amp charging alternator • Energized to Run (ETR) fuel shutoff solenoid • 24 volt starting motor • Batteries with rack and cables	• 5 amp battery charger • Oversize batteries • Ether starting aid • Battery disconnect switch
General		• Enclosures - sound attenuated, weather protective • Automatic transfer switches (ATS) • EU Certificate of Conformance (CE)

PRIME 256 ekW 320 kVA

50 Hz 1500 rpm 400 Volts

CATERPILLAR®

SPECIFICATIONS

CAT GENERATOR

Frame Size.....LC6114B
Excitation.....Self Excited
Pitch.....0.6667
Number of poles.....4
Number of bearings..... Single Bearing
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion
IP Rating.....Drip Proof IP22
Alignment..... Pilot Shaft
Overspeed capability - % of rated..... 150
Wave form.....002.00
Paralleling kit/Droop transformer..... Optional
Voltage regulator.....3 Phase sensing with volts/Hz
Voltage regulation.. Less than +/- 1/2% (steady state) Less than +/- 1% (no load to full load)
Telephone Influence Factor..... Less than 50
Harmonic distortion..... Less than 5%

CAT DIESEL ENGINE

3406C TA, I-6, 4-Stroke-Cycle Watercooled Diesel
Bore - mm..... 137.20 mm (5.4 in)
Stroke - mm..... 165.10 mm (6.5 in)
Displacement - L..... 14.64 L (893.39 in^3)
Compression ratio..... 14.5:1
Aspiration..... TA
Governor type..... Hydra-mechanical

CAT CONTROL PANELS

- EMCP II
- 24 Volt DC Control
- NEMA 1, IP22 enclosure
- Electronically dead front
- Lockable hinged door
- Generator instruments meet ANSI C-39-1
- Terminal box mounted
- Single location customer connection point
- EU compliant - segregated AC/DC connections
- Panel illuminating lights
- Auto start/stop control
- Voltage adjust potentiometer
- True RMS AC metering
- Digital indications for:
  - RPM
  - Operating hours
  - Oil pressure
  - Coolant temperature
  - System DC volts
  - AC volts, phase amps, Hz
- Shutdowns with indicating lights for:
  - Low oil pressure
  - High coolant temperature
  - Overspeed
  - Emergency stop
  - Failure to start (overcrank)

PRIME 256 ekW 320 kVA

50 Hz 1500 rpm 400 Volts

CATERPILLAR®

TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM2268	
Low Fuel Consumption		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	320 kVA	
Genset Power rating with fan	256 ekW	
Fuel Consumption		
100% load with fan	73.0 L/hr	19.3 Gal/hr
75% load with fan	56.0 L/hr	14.8 Gal/hr
50% load with fan	39.6 L/hr	10.5 Gal/hr
Cooling System[1]		
Ambient air temperature	55 ° C	131 ° F
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	522 m³/min	18434 cfm
Engine Coolant capacity with radiator/exp. tank	57.8 L	15.3 gal
Engine coolant capacity	20.8 L	5.5 gal
Radiator coolant capacity	37.0 L	9.8 gal
Inlet Air		
Combustion air inlet flow rate	18.4 m³/min	649.8 cfm
Exhaust System		
Exhaust stack gas temperature	588.1 ° C	1090.6 ° F
Exhaust gas flow rate	55.7 m³/min	1967.0 cfm
Heat rejection to aftercooler	14 kW	796 Btu/min
Exhaust flange size (internal diameter)	152.4 mm	6.0 in
Exhaust system backpressure (maximum allowable)	6.7 kPa	26.9 in. water
Heat rejection		
Heat rejection to coolant (total)	169 kW	9611 Btu/min
Heat rejection to exhaust (total)	274 kW	15582 Btu/min
Heat rejection to atmosphere from engine	57 kW	3242 Btu/min
Heat rejection to atmosphere from generator	17.5 kW	995.2 Btu/min
Alternator[2]		
Motor starting capability @ 30% voltage dip	745 skVA	
Frame	LC6114B	
Temperature Rise	105 ° C	221 ° F
Lube System		
Sump refill with filter	38.0 L	10.0 gal
Emissions[3]		
NOx mg/nm3	4659.7 mg/nm³	
CO mg/nm3	1194.8 mg/nm³	
HC mg/nm3	27.7 mg/nm³	
NOx mg/nm3	4659.7 mg/nm³	

[1] Ambient capability at 200 m (660 ft) above sea level. For ambient capability at other altitudes consult your Caterpillar dealer.

[2] Generator temperature rise is based on a 40° C (104° F) 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 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.

RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, AS2789, CSA, EGSA101P, IEC60034,ISO3046,ISO8528, NEMA MG 1-32,UL508, 72/23/EEC, 89/336/EEC, 98/37/EEC
Prime - Output available with varying load for an unlimited time. Prime power in accordance with ISO8528. 10% overload power in accordance with ISO3046, AS2789, and BS5514 available on request. Prime power ambients shown indicate ambient at 100 percent load which results in a coolant top tank temperature just below the alarm temperature.

Ratings are based on SAE J1995 standard conditions. These ratings also apply at ISO3046 standard conditions.
Fuel Rates are based on fuel oil of 35° API (16° C or 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. Consult your Caterpillar representative for details.

PRIME 256 ekW 320 kVA

50 Hz 1500 rpm 400 Volts

CATERPILLAR®

DIMENSIONS

Package Dimensions		
Length	**4182.0 mm**	**164.65 in**
Width	**1107.4 mm**	**43.6 in**
Height	**2150.3 mm**	**84.66 in**
Weight	**3321 kg**	**7,322 lb**

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #2433754).

Performance No.: DM2268

Feature Code:: 406DEF2

Source:: European Sourced

31 July 2006

7092698