DIESEL GENERATOR SET

CATERPILLAR®

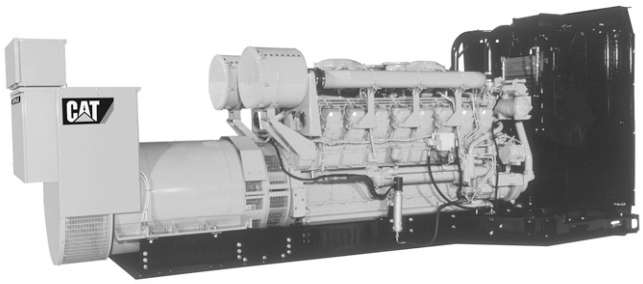

Image shown may not reflect actual package.

STANDBY
2000 ekW 2500 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/EMISSIONS STRATEGY
- Low fuel consumption

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
- Caterpillar® dealers provide extensive post sale support including maintenance and repair agreements
- Caterpillar dealers have over 1,600 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 3516B-HD TA DIESEL ENGINE
- 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

CAT CONTROL PANELS
- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway•

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Single element canister type air cleaner • Service indicator	• Dual element & heavy duty air cleaners (with pre-cleaners) • Air inlet adapters & shutoff
Cooling	• Radiator with guard (43ºC) • Coolant drain line with valve • Fan and belt guards • Caterpillar Extended Life Coolant • Low coolant level & high temperature alarm or shutdown	• Radiator with 50ºC ambient capability • Radiator removal • Heat exchanger and expansion tank • Radiator duct flange • Coolant level switch gauge • Jacket water heater
Exhaust	• Dry exhaust manifold • Flanged faced outlets	• Mufflers and Silencers • Stainless steel exhaust flex fittings • Elbows, flanges, expanders & Y adapters
Fuel	• Primary & secondary fuel filters • Fuel priming pump • Flexible fuel lines	• Fuel cooler • Water separator
Generator	• Class H insulation • Class F temperature (105ºC prime/130ºC standby) • Reactive droop • Digital Voltage Regulator, 3-phase sensing • Bus bar connections • Winding temperature detectors • Anti-condensation space heaters	• Digital Voltage Regulator with KVAR/PF control • Bearing temperature detectors • Oversize & premium generators • Cable access box • European bus bars • Circuit breakers, UL listed, 3 pole with shunt trip (low & medium voltage only) • Circuit breakers, IEC compliant, 3-pole with shunt trip (low & medium voltage only)
Power Termination	• Bus bar (NEMA and IEC meachanicallug holes) -right side standard • Top and bottom cable entry	• Circuit breakers, UL listed, 3 pole with shunt trip, 80% or 100% rated, choice of trip units, manual or electrically operated (low voltage only) • Circuit breakers, IEC compliant, 3 or 4 pole with shunt trip (low voltage only), choice of trip units, manual or electrically operated • Shroud cover for bottom cable entry • Power terminations can be located on the left and/or rear as an option. Also, multiple circuit breakers can be ordered (up to 3)
Governor	• ADEM™ 2	• Load share module
Control Panels	• User Interface panel (UIP) - rear mount • EMCP II Genset Controller • Voltage and Speed adjust • AC&DC customer wiring area (right side) • CAT digital voltage regulator (CDVR) with KVAR/PF control, 3-phase sensing • Reactive droop • Emergency Stop Pushbuttom	• Option for right or left mount UIP • Local & remote annunciator modules • Load share module • Discrete I/O module • Generator temperature monitoring & protection
Lube	• Lubricating oil and filter • Oil drain line with valves • Fumes disposal • Gear type lube oil pump	• Oil level regulator • Deep sump oil pan • Electric & air prelube pumps • Manual prelube with sump pump • Duplex oil filter
Mounting	• 330 mm (13 in) structural steel rails • Spring-type, anti-vibration mounts (shipped loose)	
Starting/Charging	• 24 volt starting motor(s) • 45 amp charging alternator • Batteries with rack and cables • Battery disconnect switch	• Battery chargers (5 or 10 Amp) • Oversize batteries • Ether starting aids • Heavy duty starting motors • Barring device (manual)
General		• Crankcase explosion relief valves • Automatic transfer switches (ATS) • EU Certificate of Conformance
Note	Standard and optional equipment may vary for UL 2200 Listed Packages. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics.	

SPECIFICATIONS

CAT GENERATOR

Caterpillar Generator
Frame size..... 827
Excitation..... Permanent Magnet
Pitch..... 0.6667
Number of poles..... 4
Number of bearings..... 2
Number of leads..... 6
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion
IP rating..... Drip Proof IP22
Alignment..... Closed Coupled
Overspeed capability - % of rated..... 180
Wave form..... 003.00
Paralleling kit/Droop transformer..... Standard
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)
Telephone Influence Factor..... Less than 50
Harmonic Distortion..... Less than 5%

CAT DIESEL ENGINE

3516B-HD, V-16, 4-stroke-cycle watercooled diesel
Bore - mm..... 170.00 mm (6.69 in)
Stroke - mm..... 215.00 mm (8.46 in)
Displacement - L..... 78.08 L (4764.73 in^3)
Compression ratio..... 15.5:1
Aspiration..... TA
Fuel system..... Electronic unit injection
Governor type..... Caterpillar ADEM control system

CAT EMCP CONTROL PANELS

- Warning / Shutdowns with indicating lights for:
  - Low oil pressure
  - High coolant temperature
  - Overspeed
  - Emergency stop
  - Failure to start (overcrank)
- Auto start/stop control
- Engine cycle crank
- True RMS AC metering, 3-phase
- Digital indications for:
  - RPM
  - Operating hours
  - Oil pressure (psi, kPa or bar)
  - Coolant temperature
  - System DC volts
- Programmable digital (4) inputs and (4) outputs
- Voltage adjustment potentiometer
- Panel lights
- MODBUS islolated data link (RS-485 half-duplex) supports 3.3 serial communication at data rate up to 115.2 kbaud (*)

***Consult your Caterpillar Dealer for Details**

TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM6470
Low Fuel Consumption	
Coolant to aftercooler	
Coolant to aftercooler temp max	30 ° C
Generator Set Package Performance	
Genset Power rating @ 0.8 pf	2500 kVA
Genset Power rating with fan	2000 ekW
Fuel Consumption	
100% load with fan	501.5 L/hr
75% load with fan	370.5 L/hr
50% load with fan	251.1 L/hr
Cooling System[1]	
Engine coolant capacity	233.0 L
Inlet Air	
Combustion air inlet flow rate	160.5 m^3/min
Exhaust System	
Exhaust stack gas temperature	480.8 ° C
Exhaust gas flow rate	425.9 m^3/min
Exhaust flange size (internal diameter)	203.2 mm
Exhaust system backpressure (maximum allowable)	6.7 kPa
Heat Rejection	
Heat rejection to coolant (total)	626 kW
Heat rejection to exhaust (total)	1900 kW
Heat rejection to aftercooler	525 kW
Heat rejection to atmosphere from engine	142 kW
Heat rejection to atmosphere from generator	66.1 kW
Alternator[2]	
Motor starting capability @ 30% voltage dip	4287 skVA
Frame	827
Temperature Rise	130 ° C
Emissions (Nominal)[3]	
NOx mg/nm3	2923.5 mg/nm^3
CO mg/nm3	232.1 mg/nm^3
HC mg/nm3	69.2 mg/nm^3
PM mg/nm3	22.5 mg/nm^3

[1] For ambient and altitude capabilities consult your Caterpillar dealer. Air flow restriction (system) is added to existing restriction from factory.
[2] Generator temperature rise is based on a 40º C (104º 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 77ºF, 28.42 in HG and number 2 diesel fuel with 35º 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, ISO 3046, ISO 8528, 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 ISO 8528. Fuel stop power in accordance with ISO 3046. 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 ISO 3046 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 Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Caterpillar dealer.

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50 Hz 1500 rpm 400 Volts

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DIMENSIONS

Package Dimensions	
Length	**6766.7 mm**
Width	**2204.5 mm**
Height	**3014.0 mm**
Weight	**14 833 kg**

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2065998).

Performance No.: DM6470

Feature Code: 516DE83

Gen. Arr. Number: 1662720

Source: European Sourced

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