



Image shown may not reflect actual package.

PRIME

**1600 e kW 2000 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•SSM program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

CAT 3516B 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 SR5 GENERATOR

- Matched to the performance and output characteristics of Caterpillar engines
- Industry leading mechanical and electrical design
- Industry leading motor starting capabilities
- High Efficiency

CAT EMCP 3 SERIES 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	<ul style="list-style-type: none"> • Single element canister type air cleaner • Service indicator 	<ul style="list-style-type: none"> • Dual element & heavy duty air cleaners (with pre-cleaners) • Air inlet adapters & shutoff
Exhaust	<ul style="list-style-type: none"> • Dry exhaust manifold • Flanged faced outlets 	<ul style="list-style-type: none"> • Mufflers and Silencers • Stainless steel exhaust flex fittings • Elbows, flanges, expanders & Y adapters
Fuel	<ul style="list-style-type: none"> • Secondary fuel filters • Fuel priming pump • Flexible fuel lines • Fuel cooler* *Not included with packages without radiators 	<ul style="list-style-type: none"> • Water separator • Duplex fuel filter
Generator	<ul style="list-style-type: none"> • Class H insulation • Class F temperature (105°C prime/130°C standby) • Winding temperature detectors(select models) • Anti-condensation space heaters 	<ul style="list-style-type: none"> • Oversize & premium generators
Power Termination	<ul style="list-style-type: none"> • Bus bar (NEMA and IEC mechanicallug holes) -right side standard • Top and bottom cable entry 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • ADEM™ 3 	<ul style="list-style-type: none"> • Load share module
Control Panels	<ul style="list-style-type: none"> • User Interface panel (UIP) - rear mount • EMCP3.1 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 Pushbutton 	<ul style="list-style-type: none"> • EMCP3.3 • Option for right or left mount UIP • Local & remote annunciator modules • Load share module • Discrete I/O module • Generator temperature monitoring & protection
Lube	<ul style="list-style-type: none"> • Lubricating oil and filter • Oil drain line with valves • Fumes disposal • Gear type lube oil pump 	<ul style="list-style-type: none"> • Oil level regulator • Deep sump oil pan • Electric & air prelube pumps • Manual prelube with sump pump • Duplex oil filter
Mounting	<ul style="list-style-type: none"> • Structural steel tube • Anti-vibration mounts (shipped loose) 	<ul style="list-style-type: none"> • Isolator removal Spring-type isolator, zone 4
Starting/Charging	<ul style="list-style-type: none"> • 24 volt starting motor(s) • Batteries with rack and cables • Battery disconnect switch 	<ul style="list-style-type: none"> • Battery chargers (10&20AMP) •45 amp charging alternator • Oversize batteries • Ether starting aid • Heavy duty starting motors • Barring device (manual) • Air starting motor with control & silencer

SPECIFICATIONS

CAT GENERATOR

Caterpillar Generator

Frame size.....	1647
Excitation.....	IE
Pitch.....	0.6667
Number of poles.....	4
Number of leads.....	6
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.....	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 TA, V-16, 4-stroke-cycle watercooled diesel

Bore - mm.....	170.00 mm (6.69 in)
Stroke - mm.....	190.00 mm (7.48 in)
Displacement - L.....	69.00 L (4210.64 in ³)
Compression ratio.....	14.0:1
Aspiration.....	TA
Fuel system.....	Electronic unit injection
Governor type.....	ADEM3

CAT EMCP CONTROL PANELS

- EMCP 3.1 (standard)
- EMCP3.3 (additional features)
- Generator mounted rear-facing control panel
- Emergency Stop button
- 24 Volt DC Control
- Environmental sealed front face
- Text alarm / event descriptions
- Warning / Shutdowns with indicating lights for:
 - Low oil pressure
 - High coolant temperature
 - Overspeed
 - Emergency stop
 - Failure to start (overcrank)
 - Low coolant level
- Controls:
 - Speed adjust
 - Auto start/stop control
 - Engine cool-down timer
 - Alarm acknowledge
 - Lamp test
- True RMS AC metering, 3-phase
- Digital indications for:
 - RPM
 - Operating hours
 - Oil pressure (psi, kPa or bar)
 - Coolant temperature
 - System DC volts
 - L-L volts, L-N volts, Phase amps, Hz
 - ekW, kVA, kVAR, kWhr, %kW, PF
- Programmable digital (4) inputs and (4) outputs
- MODBUS isolated 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**

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TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM7939	
Low Fuel Consumption		
Coolant to aftercooler Coolant to aftercooler temp max	90 ° C	194 ° F
Generator Set Package Performance Genset Power rating @ 0.8 pf Genset Power rating with fan	2000 kVA 1600 kW	
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	406.5 L/hr 309.2 L/hr 217.9 L/hr	107.4 Gal/hr 81.7 Gal/hr 57.6 Gal/hr
Cooling System¹ Air flow (max @ rated speed for radiator arrangement) Engine coolant capacity	1543 m ³ /min 233.0 L	54491 cfm 61.6 gal
Inlet Air Combustion air inlet flow rate	119.9 m ³ /min	4234.2 cfm
Exhaust System Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	509.8 ° C 330.1 m ³ /min 203.2 mm 6.7 kPa	949.6 ° F 11657.4 cfm 8.0 in 26.9 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	666 kW 1527 kW 250 kW 150 kW 77.1 kW	37875 Btu/min 86840 Btu/min 14217 Btu/min 8530 Btu/min 4384.7 Btu/min
Alternator² Motor starting capability @ 30% voltage dip Frame Temperature Rise	5865 skVA 1647 125 ° C	225 ° F
Lube System Sump refill with filter	401.3 L	106.0 gal
Emissions (Nominal)³ NOx mg/nm ³ CO mg/nm ³ HC mg/nm ³ PM mg/nm ³	4387.9 mg/nm ³ 249.8 mg/nm ³ 52.5 mg/nm ³ 21.1 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 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.

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RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, CSA, IEC60034, ISO 3046, ISO 8528, NEMA MG 1-33, UL508A, 98/37/EC

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 operation cannot exceed 25 hours per year. Prime power in accordance with ISO 3046. Prime ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the alarm 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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DIMENSIONS

Package Dimensions		
Length	6008.6 mm	236.56 in
Width	2286.0 mm	90 in
Height	2342.0 mm	92.2 in
Weight	16 960 kg	37,390 lb

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2858791).

Performance No.: DM7939

Feature Code: 516DE4Z

Gen. Arr. Number: 2523860

Source: U.S. Sourced

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