DIESEL GENERATOR SET





Image shown may not reflect actual package.

CONTINUOUS 1640 ekW 2050 kVA 60 Hz 1800 rpm 12 470 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 Emissions

DESIGN CRITERIA

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

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•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 HV GENERATOR

- Matched to the performance and output characteristics of Cat engines
- Single point access to accessory connections
- UL 1446 Recognized Class F 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

60 Hz 1800 rpm 12 470 Volts



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Single element canister type air cleaner	[] Dual element & heavy duty air cleaners
	Service indicator	[] Air inlet adapters & shut-off
Cooling	Radiator with guard	[] Radiator duct flange
	Coolant drain line with valve	[] Jacket water heater
	Fan and belt guards	
	• Cat® Extended Life Coolant*	
Exhaust	Dry exhaust manifold	[] Mufflers and Silencers
	Flanged faced outlets	[] Stainless steel exhaust flex fittings
		[] Elbows, flanges, expanders & Y adapters
Fuel	Secondary fuel filters	[] Water separator
	Fuel priming pump	[] Duplex fuel filter
	Flexible fuel lines	
	• Fuel cooler*	
Generator	Class F insulation	[] Oversized generators
	Cat digital voltage regulator (CDVR) with kVAR/PF	[] Cross current compensation transformer
	control, 3-phase sensing	[] Bearing temperature detectors
	Winding temperature detectors	
	Anti-condensation space heaters	
Power Termination	Bus bar (NEMA mechanical lug holes)	[] Left hand cable entry
	• Right hand cable entry	
-	Top or bottom cable entry	
Governor	• ADEM™ 3	[] Load share module
Control Panels	• EMCP 4.2	[] Option for right or left mount UIP
	User Interface panel (UIP) - wall mounted	[] Local & remote annunciator modules
	AC & DC customer wiring area (right side)	[] Digital I/O Module
	Emergency stop pushbutton	[] Generator temperature monitoring & protection
		[] Remote monitoring software
Lube	Lubricating oil and filter	[] Oil level regulator
	Oil drain line with valves	[] Deep sump oil pan
	Fumes disposal	[] Electric & air prelube pumps
	Gear type lube oil pump	[] Manual prelube with sump pump
		[] Duplex oil filter
Mounting	Rails - Engine / generator / radiator mounting	[] Isolator removal
	Rubber anti-vibration mounts (shipped loose)	[] Spring-type vibration isolator (shipped loose)
		[] IBC Isolators

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SPECIFICATIONS

Cat HV Generator

CAT GENERATOR

Out IIV Gollorator	
Frame size	2750
ExcitationP	ermanent Magnet
Pitch	0.6670
Number of poles	4
Number of bearings	2
Number of Leads	006
Insulation Class H with tropicalization	and antiabrasion
InsulationClass F with tropicalization	and antiabrasion
- Consult your Caterpillar dealer for avai	lable voltages
IP Rating	IP23
Alignment	Closed Coupled
Overspeed capability	125
Wave form Deviation (Line to Line)	002.00
Voltage regulator3 Phase sen	sing with volts/Hz
Voltage regulationLess 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 Wa	ter-cooled Diesel
Bore	170.00 mm (6.69 in)
Stroke	190.00 mm (7.48 in)
Displacement	69.00 L (4210.64 in ³)
Compression Ratio	14.0:1
Aspiration	TA
Fuel System	Electronic unit injection
Governor Type	ADEM3

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/12 470 Volts		DM7933		
Low Emissions				
Coolant to aftercooler				
Coolant to aftercooler temp max	90 ° C	194 ° F		
Fuel Consumption				
100% load with fan	446.1 L/hr	117.8 Gal/hr		
75% load with fan	338.7 L/hr	89.5 Gal/hr		
50% load with fan	236.5 L/hr	62.5 Gal/hr		
Cooling System ¹				
Air flow (max @ rated speed for radiator arrangement)	2011 m³/min	71018 cfm		
Engine Coolant capacity with radiator/exp. tank	421.0 L	111.2 gal		
Engine coolant capacity	233.0 L	61.6 gal		
Radiator coolant capacity	188.0 L	49.7 gal		
Inlet Air				
Combustion air inlet flow rate	153.1 m³/min	5406.7 cfm		
Exhaust System				
Exhaust stack gas temperature	474.5 ° C	886.1 ° F		
Exhaust gas flow rate	399.9 m³/min	14122.3 cfm		
Exhaust flange size (internal diameter)	203.2 mm	8.0 in		
Exhaust system backpressure (maximum allowable)	6.7 kPa	26.9 in. water		
Heat Rejection				
Heat rejection to coolant (total)	723 kW	41117 Btu/min		
Heat rejection to exhaust (total)	1769 kW	100603 Btu/min		
Heat rejection to aftercooler	330 kW	18767 Btu/min		
Heat rejection to atmosphere from engine	144 kW	8189 Btu/min		
Heat rejection to atmosphere from generator	79.1 kW	4498.4 Btu/min		
Alternator ²				
Motor starting capability @ 30% voltage dip	3588 skVA			
Frame	2750			
Temperature Rise	105 ° C	189 ° F		
Lube System				
Sump refill with filter	401.3 L	106.0 gal		
Emissions (Nominal) ³				
NOx g/hp-hr	7.2 g/hp-hr			
CO g/hp-hr	.34 g/hp-hr			
HC g/hp-hr	.22 g/hp-hr			
PM g/hp-hr	.09 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 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, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, UL508A, 72/23/EEC, 98/37/EC, 2004/108/EC

Continuous - Output available with non-varying load for an unlimited time. Average power output is 70-100% of the continuous power rating. Typical peak demand is 100% of continuous rated ekW for 100% of operating hours. Continuous power in accordance with ISO3046. Continuous ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature below the alarm 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	6591.3 mm	259.5 in		
Width	2587.6 mm	101.87 in		
Height	3050.7 mm	120.11 in		
Weight	16 836 kg	37,117 lb		

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2748730).

Performance No.: DM7933

Feature Code: 516DE4E

Gen. Arr. Number: 2524232

Source: U.S. Sourced

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Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

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