



Image shown may not reflect actual package

PRIME

1600 ekW 2000 kVA

50 Hz 1500 rpm 415 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 meets transient response and block loading steps as per ISO 8528-5

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 torsional analysis.

WORLDWIDE PRODUCT SUPPORT

- Cat® dealers provide extensive post sale support including maintenance and repair agreements
- Cat dealers have over 42+ branch stores operating in India.
- The Cat S•O•SSM program 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 GENERATOR

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

CAT EMCP 4 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	Options
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
Cooling	<ul style="list-style-type: none">• SCAC• Radiator fan and belt drive• Fan and belt guard• Coolant drain line with valve	<ul style="list-style-type: none">• Jacket water heater• Heat exchanger & expansion tank
Exhaust	<ul style="list-style-type: none">• Dry exhaust manifold• Flanged faced outlets• Mufflers• Stainless steel exhaust flex fittings• Flanges	
Fuel	<ul style="list-style-type: none">• Primary & secondary fuel filters• Fuel priming pump• Flexible fuel lines• Fuel cooler	<ul style="list-style-type: none">• Duplex fuel filter
Generator	<ul style="list-style-type: none">• AREP excitation• Class H insulation• Class H temperature rise• Random Wound• R450T Voltage Regulator with 3 phase sensing• Load acceptance model (LAM)• IP23 Protection• Paralleling kit droop transformer	<ul style="list-style-type: none">• Oversize generators• Winding temperature detector• Anti-condensation space heaters• Bearing temperature detector
Power Termination	<ul style="list-style-type: none">• Right side standard• Bus bar• Top and bottom cable entry	<ul style="list-style-type: none">• Power terminations can be located on the left as an option.• Circuit breaker panel.
Governor	<ul style="list-style-type: none">• Electronic Governor – ADEM™ 3	
Control Panels	<ul style="list-style-type: none">• EMCP 4.2 Genset Controller• User Interface panel (UIP) - rear mount• Voltage and Speed adjust• Emergency Stop Push-button	<ul style="list-style-type: none">• Option for remote mounting of UIP• Load share 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• Lube oil level indicator (dip stick)	<ul style="list-style-type: none">• Electric prelube pump• Duplex oil filter
Mounting	<ul style="list-style-type: none">• Structural steel ISMC• Anti-vibration mounts	
Starting/Charging	<ul style="list-style-type: none">• 24 volt starting motor(s)• Batteries with rack and cables• 45 amp charging alternator	<ul style="list-style-type: none">• Barring device (manual)• Air starting motor with control & silencer
General	<ul style="list-style-type: none">• Right-hand service• Paint - Caterpillar Yellow (except rails and radiators that are gloss black)• SAE standard rotation• Flywheel and Flywheel housing - SAE No. 0	

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SPECIFICATIONS

GENERATOR

Frame size.....	DSG74L
Excitation.....	Self
Pitch.....	5/6
Number of poles.....	4
Number of bearings.....	Single
Number of leads.....	6
Insulation.....	Class H with H raise
IP rating.....	Drip proof IP23
Alignment.....	Close coupled
Overspeed capability - % of rated.....	120%
Wave form deviation (line to line).....	2%
Droop transformer.....	Standard
Voltage regulator.....	3 Phase sensing with LAM
Voltage regulation.....	Less than +/- 1%
Telephone Influence Factor.....	Less than 50
Harmonic Distortion.....	Less than 4%

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.....	ADEM

CAT EMCP 4 SERIES CONTROL PANELS

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)
- kW, 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
- 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 - 1500 rpm / 50 Hz / 415 Volts		
Low fuel consumption		
Coolant to aftercooler		
Coolant to aftercooler to temp max	60°C (HE)	90°C (RAD)
Generator Set Performance		
Genset Power Rating @ 0.8 pf	2000 kVA	2000 kVA
Genset Power Rating with fan	1600 ekW	1600 ekW
Fuel Consumption		
100% Load with fan (Rad) w/o fan (HE)	390.0 L/hr	402.5 L/hr
75% Load with fan (Rad) w/o fan (HE)	294.4 L/hr	304.5 L/hr
50% Load with fan (Rad) w/o fan (HE)	210.0 L/hr	213.4 L/hr
Cooling System ¹		
Air flow (max @ rated speed for radiator arrangement)	--	3046 m ³ /min
Engine Coolant capacity with radiator / exp. tank	587 L	590 L
Engine coolant capacity	275 L	275 L
Radiator / Heat exchanger coolant capacity	312 L	315 L
Inlet Air		
Combustion air inlet flow rate	122 m ³ /min	119.1 m ³ /min
Exhaust System		
Exhaust stack gas temperature	476° C	509° C
Exhaust gas flow rate	320.5 m ³ /min	327.2 m ³ /min
Exhaust flange size (internal diameter)	203.2 mm	203.2 mm
Exhaust system backpressure (maximum allowable)	6.7 kPa	6.7 kPa
Heat Rejection		
Heat rejection to coolant (total)	623 kW	661 kW
Heat rejection to exhaust (total)	1443 kW	1511 kW
Heat rejection to aftercooler	298 kW	245 kW
Heat rejection to atmosphere from engine	138 kW	150 kW
Heat rejection to atmosphere from generator	69 kW	69 kW
Alternator ²		
Motor starting capability@30% voltage dip	3780 skVA	3780 skVA
Frame	DSG74L	DSG74L
Temperature Rise	125° C	125° C
Lube system		
Sump refill with filter	401.3 L	401.3 L

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.

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RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications:
ISO 3046, ISO 8528, IEC60034-1, IS4722

Prime - Output available with varying load for unlimited time. Prime power in accordance with ISO 8528. 10% overload power in accordance with ISO 3046.

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 when used at 29° C and weighing 838.9 g/liter.

Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details.

DIMENSIONS

Package Dimensions		
	Radiator	Heat Ex
Length	6230 mm	6300 mm
Width	2850 mm	1745 mm
Height	3465 mm	2300 mm
Weight	16080 kg	-----

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

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