



Image shown may not reflect actual package.

## STANDBY

**1800 ekW 2250 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.

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## FEATURES

### FUEL/EMISSIONS STRATEGY

- Low Emissions

### 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<sup>SM</sup> 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"> <li>• Single element canister type air cleaner</li> <li>• Service indicator</li> </ul>	<ul style="list-style-type: none"> <li>• Dual element &amp; heavy duty air cleaners (with pre-cleaners)</li> <li>• Air inlet adapters &amp; shutoff</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Dry exhaust manifold</li> <li>• Flanged faced outlets</li> </ul>	<ul style="list-style-type: none"> <li>• Mufflers and Silencers</li> <li>• Stainless steel exhaust flex fittings</li> <li>• Elbows, flanges, expanders &amp; Y adapters</li> </ul>
Fuel	<ul style="list-style-type: none"> <li>• Secondary fuel filters</li> <li>• Fuel priming pump</li> <li>• Flexible fuel lines</li> <li>• Fuel cooler*</li> </ul> <p>*Not included with packages without radiators</p>	<ul style="list-style-type: none"> <li>• Water separator</li> <li>• Duplex fuel filter</li> </ul>
Generator	<ul style="list-style-type: none"> <li>• Class H insulation</li> <li>• Class F temperature (105°C prime/130°C standby)</li> <li>• CAT digital voltage regulator (CDVR) with KVAR/PF control, 3-phase sensing</li> <li>• Winding temperature detectors(select models)</li> <li>• Anti-condensation space heaters</li> </ul>	<ul style="list-style-type: none"> <li>• Oversize &amp; premium generators</li> </ul>
Power Termination	<ul style="list-style-type: none"> <li>• Bus bar (NEMA and IEC meachanicallug holes) -right side standard</li> <li>• Top and bottom cable entry</li> </ul>	<ul style="list-style-type: none"> <li>• Circuit breakers, UL listed, 3 pole with shunt trip, 100% rated, choice of trip units, manual or electrically operated (low voltage only)</li> <li>• Circuit breakers, IEC compliant, 3 or 4 pole with shunt trip (low voltage only), choice of trip units, manual or electrically operated</li> <li>• Shroud cover for bottom cable entry</li> <li>• Power terminations can be located on the left and/or rear as an option. Also, multiple circuit breakers can be ordered (up to 2)</li> </ul>
Governor	<ul style="list-style-type: none"> <li>• ADEM™ 3</li> </ul>	<ul style="list-style-type: none"> <li>• Load share module</li> </ul>
Control Panels	<ul style="list-style-type: none"> <li>• User Interface panel (UIP) - rear mount</li> <li>• EMCP3.1 Genset Controller</li> <li>• Voltage and Speed adjust</li> <li>• AC&amp;DC customer wiring area (right side)</li> <li>• Reactive droop</li> <li>• Emergency Stop Pushbutton</li> </ul>	<ul style="list-style-type: none"> <li>• EMCP3.3</li> <li>• Option for right or left mount UIP</li> <li>• Local &amp; remote annunciator modules</li> <li>• Load share module</li> <li>• Discrete I/O module</li> <li>• Generator temperature monitoring &amp; protection</li> </ul>
Lube	<ul style="list-style-type: none"> <li>• Lubricating oil and filter</li> <li>• Oil drain line with valves</li> <li>• Fumes disposal</li> <li>• Gear type lube oil pump</li> </ul>	<ul style="list-style-type: none"> <li>• Oil level regulator</li> <li>• Deep sump oil pan</li> <li>• Electric &amp; air prelube pumps</li> <li>• Manual prelube with sump pump</li> <li>• Duplex oil filter</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>• Structural steel tube</li> <li>• Anti-vibration mounts (shipped loose)</li> </ul>	<ul style="list-style-type: none"> <li>• Isolator removal</li> <li>• Spring-type isolator, zone 4</li> </ul>
Starting/Charging	<ul style="list-style-type: none"> <li>• 24 volt starting motor(s)</li> <li>• Batteries with rack and cables</li> <li>• Battery disconnect switch</li> </ul>	<ul style="list-style-type: none"> <li>• Battery chargers (10&amp;20AMP)</li> <li>• 45 amp charging alternator</li> <li>• Oversize batteries</li> <li>• Ether starting aid</li> <li>• Heavy duty starting motors</li> <li>• Barring device (manual)</li> <li>• Air starting motor with control &amp; silencer</li> </ul>

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## 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  
Alignment..... Pilot Shaft  
Overspeed capability - % of rated..... 150  
Wave form..... 002.00  
Paralleling kit/Droop transformer..... Standard  
Voltage regulator. 3 Phase sensing with selectable 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<sup>3</sup>)  
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
  - kW, kVA, kVAR, kWh, %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	DM7945	
<b>Low Emissions</b>		
<b>Coolant to aftercooler</b> Coolant to aftercooler temp max	90 ° C	194 ° F
<b>Generator Set Package Performance</b> Genset Power rating @ 0.8 pf Genset Power rating with fan	2250 kVA 1800 ekW	
<b>Fuel Consumption</b> 100% load with fan 75% load with fan 50% load with fan	469.8 L/hr 348.5 L/hr 240.8 L/hr	124.1 Gal/hr 92.1 Gal/hr 63.6 Gal/hr
<b>Cooling System<sup>1</sup></b> Air flow (max @ rated speed for radiator arrangement) Engine coolant capacity	1543 m <sup>3</sup> /min 233.0 L	54491 cfm 61.6 gal
<b>Inlet Air</b> Combustion air inlet flow rate	135.2 m <sup>3</sup> /min	4774.5 cfm
<b>Exhaust System</b> Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	538.5 ° C 383.9 m <sup>3</sup> /min 203.2 mm 6.7 kPa	1001.3 ° F 13557.3 cfm 8.0 in 26.9 in. water
<b>Heat Rejection</b> 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	742 kW 1819 kW 341 kW 166 kW 92.7 kW	42197 Btu/min 103446 Btu/min 19393 Btu/min 9440 Btu/min 5271.8 Btu/min
<b>Alternator<sup>2</sup></b> Motor starting capability @ 30% voltage dip Frame Temperature Rise	5865 skVA 1647 150 ° C	270 ° F
<b>Lube System</b> Sump refill with filter	401.3 L	106.0 gal
<b>Emissions (Nominal)<sup>3</sup></b> NOx mg/nm <sup>3</sup> CO mg/nm <sup>3</sup> HC mg/nm <sup>3</sup> PM mg/nm <sup>3</sup>	3374.9 mg/nm <sup>3</sup> 168.0 mg/nm <sup>3</sup> 58.6 mg/nm <sup>3</sup> 22.8 mg/nm <sup>3</sup>	

<sup>1</sup> For ambient and altitude capabilities consult your Caterpillar dealer. Air flow restriction (system) is added to existing restriction from factory.

<sup>2</sup> Generator temperature rise is based on a 40° C (104° F) ambient per NEMA MG1-32.

<sup>3</sup> 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

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

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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.: DM7945

Feature Code: 516DE4Z

Gen. Arr. Number: 2523860

Source: U.S. Sourced

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