



Image shown may not reflect actual package.

## STANDBY

**1800 e kW 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.

## FEATURES

### EMISSIONS / FUEL STRATEGY

- Low Emissions

### FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested

### 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 fill 99.7% of parts orders within 24 hours
- Caterpillar dealers have over 1,798 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 SR4B GENERATOR

- Matched to the performance and output characteristics of Caterpillar engines
- Optimum winding pitch for minimum total harmonic distortion and maximum efficiency
- Single point access to accessory connections
- UL 1446 recognized Class H insulation

### CAT EMCP3 CONTROL PANELS

- Controls designed to meet individual customer needs:
- EMCP 3 provides the option for full-featured power metering and protective relaying
- Segregated low voltage, AC/DC accessory box provides single point access to accessory connections

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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>
Cooling	<ul style="list-style-type: none"> <li>• Radiator with guard (43°C)</li> <li>• Low Profile with (frontal area)</li> <li>• Low airflow</li> <li>• Radiator duct flange</li> <li>• Coolant drain line with valve</li> <li>• Fan and belt guards</li> <li>• Caterpillar Extended Life Coolant*</li> <li>• Coolant level sensors</li> </ul> <p>*Not included with packages without radiators</p>	<ul style="list-style-type: none"> <li>• Radiator with 27°C and 50°C ambient capability</li> <li>• Radiator option for 57°C ambient with treated water</li> <li>• Radiator removal</li> <li>• Heavy duty, harsh environment radiator at 43°C and 50°C</li> <li>• Heat exchanger and expansion tank</li> <li>• Coolant level switch gauge</li> <li>• Jacket water heater</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>• Permanent magnet excited</li> <li>• Class H insulation</li> <li>• Class F temperature (105°C prime/130°C standby)</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)</li> <li>-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, 80% or 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 3)</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>• CAT digital voltage regulator (CDVR) with KVAR/PF control, 3-phase sensing</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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50 Hz 1500 rpm 400 Volts



## SPECIFICATIONS

### CAT GENERATOR

SR4B Generator  
Frame size..... 826  
Excitation..... Permanent Magnet  
Pitch..... 0.7143  
Number of poles..... 4  
Number of bearings..... 002  
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 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 EMCP3 CONTROL PANELS

- EMCP 3.1 (standard)
- EMCP3.3 (additional features)
- Integral to generator terminal box
- Single location for customer connection
- 24 Volt DC Control
- IP 23 enclosure
- Electronically dead front
- Lockable hinged door (option)
- UL/CSA/CE
- Generator terminal box mounted
- Panel illuminating lights
- Auto start/stop control
- Voltage adjust (optional on 3.1)
- True RMS metering, 3-phase
- Digital indications for:
  - RPM
  - Operating hours
  - Oil pressure
  - Coolant temperature
  - System DC volts
- Shutdowns with indicating lights for:
  - Low oil pressure
  - High coolant temperature
  - Overspeed
  - Emergency stop
  - Failure to start (overcrank)
- Programmable protective relaying functions:
  - Under and over voltage
  - Under and over frequency
  - Reverse power
- Overcurrent
- MODBUS isolated data link (RS-485 half-duplex) supports 3.3 serial communication at data rate up to 115.2 kbaud (\*)

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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 kW	
<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> Ambient air temperature Air flow (max @ rated speed for radiator arrangement) Engine coolant capacity	49 ° C 1841 m <sup>3</sup> /min 233.0 L	120 ° F 65014 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 59.5 kW	42197 Btu/min 103446 Btu/min 19393 Btu/min 9440 Btu/min 3383.8 Btu/min
<b>Alternator<sup>2</sup></b> Motor starting capability @ 30% voltage dip Frame Temperature Rise	4225 skVA 826 130 ° C	266 ° 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> Ambient capability at 300 m (984ft) above sea level. For ambient capability at other altitudes, consult your Caterpillar dealer.

<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:** -ABGSM TM3, AS1359, AS2789, BS4999, BS5000, BS5514, DIN6271, DIN6280, EGSA101P, IEC34/1, ISO3046/1, ISO8528, JEM1359, NEMA MG 1-22, VDE0530, 89/392/EEC, 89/336/EEC

**Standby** - Output available with varying load for the duration of the interruption of the normal source power. Standby power in accordance with ISO8528. Fuel stop power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514. Standby ambients shown indicate ambient temperature at 100 percent load which results in a coolant top tank temperature just below the shutdown temperature.

**Ratings** are based on SAE J1995 standard conditions. These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions.

**Fuel Rates** are based on fuel oil of 35° API (16° C or 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. Consult your Caterpillar representative for details.

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## DIMENSIONS

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Package Dimensions		
Length	6554.6 mm	258.05 in
Width	2587.6 mm	101.87 in
Height	3015.1 mm	118.7 in
Weight	16 960 kg	37,390 lb

Note: Do not use for installation design.  
See general dimension drawings for detail (Drawing #2748723).

Performance No.: DM7945

Feature Code:: 516DE3N

Source:: U.S. Sourced

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