



Image shown may not reflect actual package.

## PRIME

**1160 ekW 1450 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

### DESIGN CRITERIA

- The generator set accepts 100% rated load in one step.

### 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 3512B 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 with 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>• SCAC</li> <li>• Low Emissions and Low BSFC std PGS are provided with radiators for 90°C (194°F)</li> <li>• EPA Certified std PGS are provided with radiators for 60°C (140°F)</li> <li>• Radiator fan and belt drive</li> <li>• Fan and belt guards</li> <li>• Coolant drain line with valve</li> <li>• Coolant level sensors*</li> <li>• Caterpillar Extended Life Coolant*</li> </ul>	<ul style="list-style-type: none"> <li>• Radiator with 27°C, 50°C and 53°C ambient capability</li> <li>• Radiator removal</li> <li>• Coolant level switch gauge</li> <li>• Heat exchanger and expansion tank</li> <li>• Heavy duty, harsh environment radiator at 43°C and 50°C</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Exhaust manifold - dry - single - 8 in</li> <li>• 203 mm (8in)ID flanged outlet</li> </ul>	<ul style="list-style-type: none"> <li>• Mufflers</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 cooler</li> <li>• Flexible fuel lines</li> <li>• Fuel priming pump</li> </ul>	<ul style="list-style-type: none"> <li>• Duplex secondary fuel filter</li> <li>• Primary fuel filter with fuel water separator</li> <li>*Not included with packages without radiators</li> </ul>
Generator	<ul style="list-style-type: none"> <li>• 3 Phase brushless, salient pole</li> <li>• Class H insulation</li> <li>• Class F temperature (105°C prime/130°C standby)</li> <li>• Reactive droop</li> <li>• CAT digital voltage regulator (CDVR) with KVAR/PF control, 3-phase sensing</li> <li>• Bus bar connections</li> <li>• Winding temperature detectors</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 mechanical lug 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 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™ III</li> </ul>	
Control Panel	<ul style="list-style-type: none"> <li>• EMCP 3.1</li> <li>• User Interface panel (UIP) - rear mount</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>• EMCP 3.3</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> <li>• Remote monitoring</li> <li>• Voltage adjust</li> </ul>
Lube	<ul style="list-style-type: none"> <li>• Lubricating oil</li> <li>• Gear type lube oil pump</li> <li>• Integral lube oil cooler</li> <li>• Oil filter, filler and dipstick</li> <li>• Oil drain lines and valve</li> <li>• Fumes disposal</li> </ul>	<ul style="list-style-type: none"> <li>• Deep sump oil pan</li> <li>• Oil level regulator</li> <li>• Sump &amp; prelube pump (manual or electric)</li> <li>• Duplex oil filter</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>• Rails- engine/generator/radiator mounting</li> <li>• Anti-vibration mounts (shipped loose)</li> <li>• Rubber anti-vibration mounts (shipped loose)</li> </ul>	<ul style="list-style-type: none"> <li>• Isolator removal</li> <li>• Spring-type vibration isolator</li> </ul>
Starting/Charging	<ul style="list-style-type: none"> <li>• 24 volt starting motor</li> <li>• Battery rack with cables</li> <li>• Battery disconnect switch</li> </ul>	<ul style="list-style-type: none"> <li>• 45 amp charging alternator</li> <li>• Battery chargers (10 and 20 Amp)</li> <li>• Oversize battery</li> <li>• Air starting motor with control &amp; silencer</li> <li>• Air pressure regulator</li> <li>• Heavy duty starting motors</li> <li>• Ether starting aids</li> </ul>

# PRIME 1160 ekW 1450 kVA

50 Hz 1500 rpm 400 Volts



## SPECIFICATIONS

### CAT GENERATOR

Caterpillar Generator  
Frame size..... 1468  
Excitation..... IE  
Pitch..... 0.6667  
Number of poles..... 4  
Number of bearings..... Single Bearing  
Number of Leads..... 6  
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion  
IP Rating..... IP23  
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

3512B TA, 4-stroke-cycle watercooled diesel  
Bore - mm..... 170.00 mm (6.69 in)  
Stroke - mm..... 190.00 mm (7.48 in)  
Displacement - L..... 51.80 L (3161.03 in<sup>3</sup>)  
Compression ratio..... 13.0:1  
Aspiration..... TA  
Fuel system..... Electronic unit injection  
Governor type..... ADEM3

### CAT CONTROL PANELS

- EMCP 3.1 (Standard)
- EMCP 3.3 (Optional)
- Generator mounted rear-facing control panel
- Emergency stop pushbutton
- 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 (over crank)
  - Low coolant level
- Controls:
  - Speed adjust
  - Auto / start / stop control
  - Engine cool-down timer
  - Engine cycle crank
  - Alarm acknowledge
  - Lamp test
- True RMS AC metering, 3-phase
- Digital indication for :
  - RPM
  - System DC Volts
  - Operating hours
  - Oil pressure (psi, kPa or bar)
  - Coolant temperature
  - L-L volts, L-N volts, Phase amps, Hz
  - ekW, kVA, kVAR, kWhr, %kW, PF(\*)
- Programmable digital (4) inputs and (4) outputs
- Reverse power (3.3)
- MODBUS isolated data link (RS-485 half-duplex)supports serial communication at data rate up to 115.2 kbaud (3.3)

**Consult your Caterpillar Dealer for Details**

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## TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM8460	
<b>Low Fuel Consumption</b>		
<b>Generator Set Package Performance</b> Genset Power rating @ 0.8 pf Genset Power rating with fan	1450 kVA 1160 ekW	
<b>Coolant to aftercooler</b> Coolant to aftercooler temp max	30 ° C	86 ° F
<b>Fuel Consumption</b> 100% load with fan 75% load with fan 50% load with fan	298.8 L/hr 225.2 L/hr 158.0 L/hr	78.9 Gal/hr 59.5 Gal/hr 41.7 Gal/hr
<b>Cooling System<sup>1</sup></b> Air flow restriction (system) Engine coolant capacity	0.12 kPa 156.8 L	0.48 in. water 41.4 gal
<b>Inlet Air</b> Combustion air inlet flow rate	105.9 m <sup>3</sup> /min	3739.8 cfm
<b>Exhaust System</b> Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	391.2 ° C 246.2 m <sup>3</sup> /min 203.2 mm 6.7 kPa	736.2 ° F 8694.5 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	469 kW 998 kW 313 kW 110 kW 57.2 kW	26672 Btu/min 56756 Btu/min 17800 Btu/min 6256 Btu/min 3253.0 Btu/min
<b>Alternator<sup>2</sup></b> Motor starting capability @ 30% voltage dip Frame Temperature Rise	4282 skVA 1468 125 ° C	225 ° F
<b>Lube System</b> Sump refill with filter	310.4 L	82.0 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>	3260.2 mg/nm <sup>3</sup> 705.2 mg/nm <sup>3</sup> 73.1 mg/nm <sup>3</sup> 32.8 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> UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40 degree C 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

**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

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Package Dimensions		
Length	5347.0 mm	210.51 in
Width	1974.9 mm	77.75 in
Height	2342.0 mm	92.2 in
Weight	14 025 kg	30,920 lb

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2858789).

Performance No.: DM8460

Feature Code: 512DE6H

Gen. Arr. Number: 2523820

Source: U.S. Sourced

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