STANDBY
1200 e kW 1500 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 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® 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 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 CONTROL PANELS
• Simple user friendly interface and navigation
• Scalable system to meet a wide range of customer needs
• Integrated Control System and Communications Gateway
## FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

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<th>Standard</th>
<th>Optional</th>
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<td>Cooling</td>
<td>• Package mounted radiator</td>
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<tr>
<td>Exhaust</td>
<td>• Exhaust flange outlet</td>
<td>[ ] Exhaust mufflers (except Tier 4)</td>
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<tr>
<td>Fuel</td>
<td>• Primary fuel filter with integral water separator</td>
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<tr>
<td></td>
<td>• Secondary fuel filters</td>
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</tr>
<tr>
<td></td>
<td>• Fuel priming pump</td>
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<tr>
<td>Generator</td>
<td>• Matched to the performance and output characteristics of Cat engines</td>
<td>[ ] Oversize and premium generators</td>
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<tr>
<td></td>
<td>• Load adjustment module provides engine relief upon load impact and</td>
<td>[ ] Permanent magnet excitation (PMG)</td>
</tr>
<tr>
<td></td>
<td>improves load acceptance and recovery time</td>
<td>[ ] Internal excited (IE)</td>
</tr>
<tr>
<td></td>
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<tr>
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<td>[ ] Circuit breakers, UL listed</td>
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<td>[ ] Circuit breakers, IEC compliant</td>
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<tr>
<td>Control Panel</td>
<td>• EMCP 4 Genset Controller</td>
<td>[ ] EMCP 4.2</td>
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<td>[ ] EMCP 4.3</td>
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<td></td>
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<td>[ ] Load share module</td>
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<td></td>
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<td>[ ] Digital I/O module</td>
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<td>Mounting</td>
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<td>[ ] Oversize batteries</td>
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<tr>
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<td></td>
<td>[ ] Jacket water heater</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] Heavy duty starting system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] Charging alternator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] Air starting motor with control and silencer (3500 &amp; C175 models only)</td>
</tr>
<tr>
<td>General</td>
<td>• Paint - Caterpillar Yellow except rails and radiators gloss black</td>
<td>The following options are based on regional and product configuration:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] EU Certificate of Conformance (CE)</td>
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<tr>
<td></td>
<td></td>
<td>[ ] UL 2200 package</td>
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<tr>
<td></td>
<td></td>
<td>[ ] CSA Certification</td>
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<tr>
<td></td>
<td></td>
<td>[ ] EEC Declaration of Conformity</td>
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<td></td>
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<td>[ ] Enclosures- sound attenuated, weather protective</td>
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<td></td>
<td></td>
<td>[ ] Automatic transfer switches (ATS)</td>
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<td></td>
<td></td>
<td>[ ] Integral &amp; sub-base fuel tanks</td>
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<tr>
<td></td>
<td></td>
<td>[ ] Integral &amp; sub-base UL listed dual wall fuel tanks</td>
</tr>
</tbody>
</table>
STANDBY 1200ekW 1500kVA
50Hz 1500rpm 400Volts

SPECIFICATIONS

**CAT GENERATOR**

Cat Generator
Frame size ................................................. 1447
Excitation .............................................. Internal Excitation
Pitch .......................................................... 0.6667
Number of poles ....................................... 4
Number of bearings ................................. Single bearing
Number of Leads ...................................... 006
Insulation ...................................... UL 1446 Recognized Class H with tropicalization and antiabrasion
- Consult your Caterpillar dealer for available voltages
IP Rating ......................................................... IP23
Alignment ................................................ Pilot Shaft
Overspeed capability ..................................... 150
Wave form Deviation (Line to Line) ............... 002.00
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)

**CAT DIESEL ENGINE**

3512B TA, V-12, 4-Stroke Water-cooled Diesel
Bore .............................................................. 170.00 mm (6.69 in)
Stroke .......................................................... 190.00 mm (7.48 in)
Displacement ............................................. 51.80 L (3161.03 in³)
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
# TECHNICAL DATA

<table>
<thead>
<tr>
<th>Open Generator Set - - 1500rpm/50 Hz/400 Volts</th>
<th>DM8027</th>
</tr>
</thead>
</table>

## Generator Set Package Performance
- **Genset Power rating @ 0.8 pf**: 1500 kVA
- **Genset Power rating with fan**: 1200 ekW

## Fuel Consumption
- **100% load with fan**: 308.8 L/hr, 81.6 Gal/hr
- **75% load with fan**: 232.5 L/hr, 61.4 Gal/hr
- **50% load with fan**: 162.3 L/hr, 42.9 Gal/hr

## Cooling System
- **Air flow restriction (system)**: 0.12 kPa, 0.48 in. water
- **Engine Coolant capacity with radiator/exp. tank**: 286.8 L, 75.8 gal
- **Engine coolant capacity**: 156.8 L, 41.4 gal
- **Radiator coolant capacity**: 130.0 L, 34.3 gal

## Inlet Air
- **Combustion air inlet flow rate**: 108.3 m³/min, 3824.6 cfm

## Exhaust System
- **Exhaust stack gas temperature**: 392.4 ºC, 738.3 ºF
- **Exhaust gas flow rate**: 253.2 m³/min, 8941.7 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)**: 480 kW, 27298 Btu/min
- **Heat rejection to exhaust (total)**: 1030 kW, 58576 Btu/min
- **Heat rejection to aftercooler**: 331 kW, 18824 Btu/min
- **Heat rejection to atmosphere from engine**: 111 kW, 6313 Btu/min
- **Heat rejection to atmosphere from generator**: 57.9 kW, 3292.8 Btu/min

## Alternator
- **Motor starting capability @ 30% voltage dip**: 3658 skVA
- **Frame**: 1447
- **Temperature Rise**: 150 ºC, 270 ºF

## Lube System
- **Sump refill with filter**: 310.4 L, 82.0 gal

## Emissions (Nominal)
- **NOx mg/nm³**: 3243.7 mg/nm³
- **CO mg/nm³**: 698.4 mg/nm³
- **HC mg/nm³**: 69.9 mg/nm³
- **PM mg/nm³**: 32 mg/nm³

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1. For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.
2. 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.
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 77ºF, 28.42 in HG and number 2 diesel fuel with 35º 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.
RATING DEFINITIONS AND CONDITIONS

Applicable Codes and Standards:

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 ISO8528. Fuel stop power in accordance with ISO3046.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

Fuel Rates are based on fuel oil of 35º API [16º C (60º F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29º C (85º 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 Dealer for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat Dealer.
### DIMENSIONS

<table>
<thead>
<tr>
<th>Package Dimensions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>5249 mm</td>
</tr>
<tr>
<td>Width</td>
<td>1975 mm</td>
</tr>
<tr>
<td>Height</td>
<td>2367 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>11605 kg</td>
</tr>
</tbody>
</table>

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

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**Performance No.:** DM8027  
**Feature Code:** 512DE8W  
**Gen. Arr. Number:** 2523806  
**Source:** European Sourced  
**March 2014**