

---

## DIESEL GENERATOR SET



Image shown may not reflect actual package.

## STANDBY 640 kW 800 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

#### 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•S<sup>SM</sup> program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

#### CAT® 3412C 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

- Designed to match the performance and output characteristics of Cat diesel engines
- Single point access to accessory connections
- UL 1446 recognized Class H insulation

#### 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

# STANDBY 640 ekW 800 kVA

50 Hz 1500 rpm 400 Volts



## 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><input type="checkbox"/> Dual element air cleaner</li> <li><input type="checkbox"/> Heavy-duty air cleaner</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Radiator with guard</li> <li>• Coolant drain line with valve</li> <li>• Fan and belt guards</li> <li>• Cat® Extended Life Coolant</li> <li>• Low coolant level alarm or shutdown</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Radiator duct flange</li> <li><input type="checkbox"/> Jacket water heater with shutoff valve</li> <li><input type="checkbox"/> Heat exchanger and expansion tank</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Stainless steel exhaust flex and ANSI style outlet flange, gasket, bolts and mating weld flange, shipped loose</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mufflers (10 or 35 dBA)</li> <li><input type="checkbox"/> Elbow kit and through-wall installation kit</li> <li><input type="checkbox"/> Manifold and turbocharger guards</li> </ul>
Fuel	<ul style="list-style-type: none"> <li>• Primary and secondary fuel filters</li> <li>• Water separator</li> <li>• Fuel priming pump</li> <li>• Flexible fuel lines</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Manual transfer pump</li> <li><input type="checkbox"/> Choice of three Automatic Transfer Systems</li> </ul>
Generator	<ul style="list-style-type: none"> <li>• Class H insulation</li> <li>• Class F temperature rise</li> <li>• VR6 Voltage Regulator, 3-phase sensing, 2:1 Volts/Hz</li> <li>• Reactive droop</li> <li>• Extension box</li> <li>• Bus bar connection</li> <li>• Segregated low voltage (AC/DC) wiring panel</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Digital Voltage Regulator with kVAR/PF control</li> <li><input type="checkbox"/> Anti-condensation space heater</li> <li><input type="checkbox"/> Oversize and premium generators</li> <li><input type="checkbox"/> Circuit breakers, IEC Compliant, 3-pole or 4-pole with shunt trip</li> </ul>
Governor	<ul style="list-style-type: none"> <li>• PEEC - Cat Electronic</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Electronic load sharing</li> </ul>
Control Panels	<ul style="list-style-type: none"> <li>• 4.2 (mounted inside power center)</li> <li>• Rear facing</li> <li>• Speed adjust</li> <li>• Emergency stop pushbutton</li> <li>• Voltage adjustment</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Right-hand mounting of control panel</li> <li><input type="checkbox"/> Local annunciator modules (NFPA 99/110)</li> <li><input type="checkbox"/> Remote annunciator modules (NFPA 99/110)</li> <li><input type="checkbox"/> Discrete I/O module</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> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Manual sump pump</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>• Formed steel base</li> <li>• Linear vibration isolators between base and engine-generator</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Integral fuel tank base</li> <li><input type="checkbox"/> Sub base fuel tank</li> <li><input type="checkbox"/> Wide base</li> <li><input type="checkbox"/> Skid base</li> </ul>
Starting/Charging	<ul style="list-style-type: none"> <li>• 45 amp charging alternator</li> <li>• Fuel shutoff solenoid</li> <li>• 24 volt starting motor</li> <li>• Battery with rack and cables</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Heavy-duty starting system</li> <li><input type="checkbox"/> 5 or 10 amp battery charger</li> <li><input type="checkbox"/> Oversize batteries</li> <li><input type="checkbox"/> Ether starting aid</li> <li><input type="checkbox"/> Battery disconnect switch</li> </ul>
General		<ul style="list-style-type: none"> <li><input type="checkbox"/> Enclosures - sound attenuated, weather protective</li> <li><input type="checkbox"/> Automatic transfer switches (ATS)</li> <li><input type="checkbox"/> Floor standing circuit breakers</li> <li><input type="checkbox"/> EU Certificate of Conformance (CE)</li> </ul>

# STANDBY 640 ekW 800 kVA

50 Hz 1500 rpm 400 Volts



## SPECIFICATIONS

### CAT GENERATOR

Frame size..... 597  
Excitation..... Self Excitation  
Pitch..... 0.8000  
Number of poles..... 4  
Number of bearings..... Single bearing  
Number of Leads..... 012  
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion  
- Consult your Caterpillar dealer for available voltages  
IP Rating..... Drip Proof IP22  
Alignment..... Pilot Shaft  
Overspeed capability..... 180  
Wave form Deviation (Line to Line)..... Less than 5% deviation  
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

3412C TA, V-12, 4-Stroke Water-cooled Diesel  
Bore..... 137.20 mm (5.4 in)  
Stroke..... 152.40 mm (6.0 in)  
Displacement..... 27.02 L (1648.86 in<sup>3</sup>)  
Compression Ratio..... 13.0:1  
Aspiration..... TA  
Fuel System..... Pump and Lines  
Governor Type..... PEEC - Cat Electronic

### 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

# STANDBY 640 kW 800 kVA

50 Hz 1500 rpm 400 Volts



## TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM0630	
<b>Package Performance</b>		
Genset Power rating @ 0.8 pf	800 kVA	
Genset Power rating with fan	640 kW	
<b>Fuel Consumption</b>		
100% load with fan	169.1 L/hr	44.7 Gal/hr
75% load with fan	128.9 L/hr	34.1 Gal/hr
50% load with fan	89.9 L/hr	23.7 Gal/hr
<b>Cooling System<sup>1</sup></b>		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	1236 m <sup>3</sup> /min	43649 cfm
Engine coolant capacity	59.0 L	15.6 gal
Radiator coolant capacity	84.0 L	22.2 gal
Engine Coolant capacity with radiator/exp. tank	143.0 L	37.8 gal
<b>Exhaust System</b>		
Combustion air inlet flow rate	48.1 m <sup>3</sup> /min	1698.6 cfm
Exhaust stack gas temperature	538.7 °C	1001.7 °F
Exhaust gas flow rate	137.2 m <sup>3</sup> /min	4845.2 cfm
Exhaust flange size (internal diameter)	203.2 mm	8.0 in
Exhaust system backpressure (maximum allowable)	6.7 kPa	26.9 in. water
<b>Heat rejection</b>		
Heat rejection to coolant (total)	381 kW	21667 Btu/min
Heat rejection to exhaust (total)	628 kW	35714 Btu/min
Heat rejection to atmosphere from engine	105 kW	5971 Btu/min
Heat rejection to atmosphere from generator	30.9 kW	1757.3 Btu/min
<b>Alternator<sup>2</sup></b>		
Motor starting capability @ 30% voltage dip	1815 skVA	
Frame	597	
Temperature Rise	130 °C	234 °F
<b>Lube System</b>		
Sump refill with filter	139.0 L	36.7 gal
<b>Emissions<sup>3</sup></b>		
NOx mg/nm <sup>3</sup>	2969.2 mg/nm <sup>3</sup>	
CO mg/nm <sup>3</sup>	181.6 mg/nm <sup>3</sup>	
HC mg/nm <sup>3</sup>	120.1 mg/nm <sup>3</sup>	
PM mg/nm <sup>3</sup>	45.1 mg/nm <sup>3</sup>	

<sup>1</sup> For ambient and altitude capabilities consult your Cat 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°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.

# STANDBY 640 eKW 800 kVA

50 Hz 1500 rpm 400 Volts



## RATING DEFINITIONS AND CONDITIONS

---

**Meets or Exceeds International Specifications:** AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, UL508A, 72/23/EEC, 98/37/EC, 2004/108/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 ISO8528. Fuel stop power in accordance with ISO3046. 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 ISO3046 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 Cat representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

# STANDBY 640 ekW 800 kVA

50 Hz 1500 rpm 400 Volts



## DIMENSIONS

---

Package Dimensions		
Length	4485.0 mm	176.57 in
Width	1798.1 mm	70.79 in
Height	1986.7 mm	78.22 in
Weight	6256 kg	13,792 lb

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

Performance No.: DM0630

Feature Code: 412DEBA

Gen. Arr. Number: 1492443

Source: European Sourced

September 23 2011

18763674

[www.Cat-ElectricPower.com](http://www.Cat-ElectricPower.com)

© 2011 Caterpillar  
All rights reserved.

Materials and specifications are subject to change without notice.  
The International System of Units (SI) is used in this publication.

CAT, CATERPILLAR, their respective logos, "Caterpillar Yellow," the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.