Diesel Generator Set

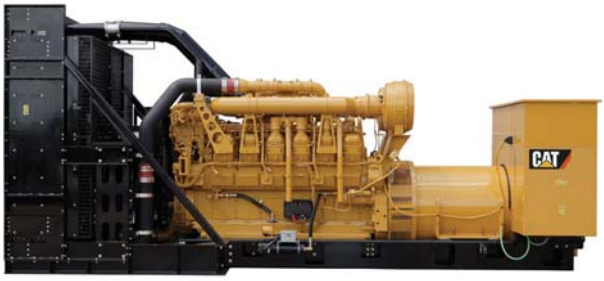

Image shown may not reflect actual package

Standby
1500 ekW 1875 kVA
60 Hz 1800 rpm 480 Volts

Caterpillar is leading the power generation Market place with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

FUEL/EMISSIONS STRATEGY
- EPA Certified for Stationary Emergency Application (EPA Tier 2 emissions levels)

DESIGN CRITERIA
- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.

UL 2200
- UL 2200 packages available. Certain restrictions may apply. Consult with your Cat dealer.

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® SOS℠ program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by products.

CAT 3512C ATAAC DIESEL ENGINE
- Reliable, rugged, durable design
- Field proven in thousands of applications worldwide
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight

CAT GENERATOR
- Matched to the performance and output characteristics of Caterpillar 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 1500 ekW 1875 kVA

60 Hz 1800 rpm 480 Volts

Factory Installed Standard & Optional Equipment

System	Standard	Optional
Air Inlet	• Single element canister type air cleaner with service indicator	[ ] Dual element air cleaners
Cooling	• Package mounted radiator	
Exhaust	• Exhaust flange outlet	[ ] Mufflers
Fuel	• Secondary fuel filters • Fuel cooler • Fuel priming pump	
Generator	• Matched to the performance and output characteristics of Cat engines	[ ] Oversize & premium generators [ ] Permanent magnet excitation (PMG) [ ] Internal excitation (IE) [ ] Winding temperature detectors [ ] Anti-condensation space heaters
Power Termination	• Bus bar	[ ] Circuit breakers, UL listed [ ] Bottom cable entry [ ] Right, left, and/or rear power termination
Governor	• ADEM™ A3	[ ] Load share module
Control Panel	• EMCP 4	[ ] EMCP 4.2 [ ] EMCP 4.3 [ ] EMCP 4.4 [ ] Local & remote annunciator modules [ ] Digital I/O Module [ ] Generator temperature monitoring & protection
Mounting		[ ] Spring type vibration isolator [ ] IBC 2006 seismic certification
Starting / Charging	• 24 volt starting motor(s) • Batteries with rack and cables • Battery disconnect switch	[ ] Battery chargers (10 & 20 Amp) [ ] 45A charging alternator [ ] Oversize batteries [ ] Ether starting aids [ ] Heavy duty starting motors [ ] Barring device (manual) [ ] Air starting motor with control & silencer [ ] Jacket water heater
General	• Paint – Caterpillar Yellow except rails and radiators gloss black	[ ] UL 2200 listed [ ] CSA Certification

STANDBY 1500 ekW 1875 kVA

60 Hz 1800 rpm 480 Volts

SPECIFICATIONS

CAT GENERATOR

Frame ……..……..…….. 1447
Excitation ……..……..…PM
Pitch…….……0.6667
Number of poles……..……4
Number of leads……..……6
Number of bearings ……..……Single Bearing
Insulation ……Class H
IP rating ……..Drip proof IP23
Over speed capability - % of rated……125%
Wave form deviation……...2 %
Voltage regulator…… 3 phase sensing
Voltage regulation….Less than ±1/2% (steady state)
Less than ±1/2% (3% speed change)

CAT DIESEL ENGINE

3512C ATAAC, V-16, 4 stroke, water-cooled diesel

Bore ……170.00 mm (6.69 in)
Stroke ……..190.00 mm (7.48in)
Displacement ……51.80 (3161.03 in^3)
Compression ratio……14.7:1
Aspiration……TA
Fuel system……Electronic unit injection
Governor Type…….. ADEM™ A3

CAT EMCP 4 CONTROL PANELS

EMCP 4 controls including:
- Run / Auto / Stop Control
- Speed & Voltage Adjust
- Engine Cycle Crank
- Emergency stop pushbutton

EMCP 4.2 controller features:
- 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)
- Power Factor (per phase & average)
- kW (per phase, average & percent)
- kVA (per phase, average & percent)
- kVAr (per phase, average & percent)
- kW-hr & kVAr-hr (total)

Warning/shutdown with common LED indication of shutdowns for:
- 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
- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link

- 6 programmable digital inputs
- 4 programmable relay outputs (Form A)
- 2 programmable relay outputs (Form C)
- 2 programmable digital outputs

Compatible with the following optional modules:
- Digital I/O module
- Local Annunciator
- Remote annunciator
- RTD module
- Thermocouple module

STANDBY 1500 ekW 1875 kVA

60 Hz 1800 rpm 480 Volts

Technical Data

Open Generator Set - 1800 rpm/60 Hz/480 Volts		
EPA Certified for Stationar Emergency Applications (EPA Tier 2 emissions levels)		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1875 kVA	
Genset Power Rating with fan	1500 ekW	
Fuel Consumption		
100% Load with fan	396.0 L/hr	104.6 Gal/hr
75% Load with fan	310.5 L/hr	82.0 Gal/hr
50% Load with fan	219.8 L/hr	58.1 Gal/hr
Cooling System[1]		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	2075 m3/min	73278 cfm
Engine coolant capacity with radiator	390.8 L	103.2 gal
Engine coolant capacity	156.8 L	41.4 gal
Radiator coolant capacity	234.0 L	61.8 gal
Inlet Air		
Combustion air inlet flow rate	129.4 m^3/min	4569.7 cfm
Exhaust System		
Exhaust stack gas temperature (engine out)	403.9 °C	759.0 °F
Exhaust gas flow rate	308.9 mm^3/min	10908.7 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 cooolant (total)	616 kW	35032 Btu/min
Heat rejection to exhaust (total)	1322 kW	75182 Btu/min
Heat rejection to aftercooler	481 kW	27354 Btu/min
Heat rejection to atmosphere from engine	124 kW	7052 Btu/min
Heat rejection to atmosphere from generator	74 kW	3141 Btu/min
Alternator[2]		
Motor starting capabiliy @30% voltage dip	4350 skVA	
Frame	1447	
Temperature Rise	150 °C	270 °F
Lube System		
Sump refil with filter	310.4 L	82 gal
Emissions (Nominal)[3]		
NOx g/hp-hr	4.08 g/hp-hr	
CO g/hp-hr	0.44 g/hp-hr	
HC g/hp-hr	0.11 g/hp-hr	
PM g/hp-hr	0.03 g/hp-hr	

[1] For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

[2] Generator temperature rise is basd on a 40 degree C ambient per NEMA MG1-32. UL 2200 Listed ppackages may have oversized generators with a different temperature rise and motor starting characteristics.

[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 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. Emissions values are tailpipe out with aftertreatment installed. Values shown as zero may be greater than zero but were below the detection level of the equipment used at the time of measurement.

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.

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 representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

DIMENSIONS

Package Dimensions		
Length	5943.6 mm	234.0 in
Width	2280.3 mm	89.8 in
Height	2791.1 mm	109.9 in

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

www.Cat-EectricPower.com

Feature Code: 512DR7H

Gen. Arr. Number: 383-8418

Sourced: U.S. Sourced

EPD0174-A (07/13)