DIESEL GENERATOR SET



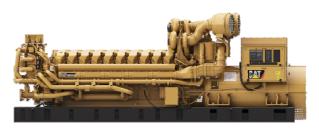


Image shown may not reflect actual package

STANDBY 3200 ekW 4000 kVA 50 Hz 1500 rpm 11000 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

Low BSFC

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 1600 dealer branch stores operating in 200 countries.
- The Cat[®] S•O•S[™] program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by products.

CAT C175-20 DIESEL ENGINE

- Reliable, rugged, durable design
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight

CAT SR5 GENERATOR

- Designed to match performance and output characteristics of Cat diesel engines
- Single point access to accessory connections

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

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FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Air cleaner, 4 x single element canister with service	[] Air cleaner, 4 x dual element with service
	indicator(s)	indicator(s)
0 "	Plug group for air inlet shut-off	[] Air inlet adapters
Cooling	• SCAC cooling	[] Remote horizontal SCAC radiator
	Jacket water and AC inlet/outlet flanges	[] Remote fuel cooler
Exhaust	Dry exhaust manifold	[] Low coolant level sensor (for remote radiators) [] Engine Exhaust Temperature Module
Extrausi	Bolted flange (ANSI 8" & DIN 200) with bellow for	[] Mufflers (15 dBA,25 dBA, or 40 dBA)
	each turbo (qty 4)	[] Dual 20" or single 24" vertical exhaust collector
	(q.y 1)	[] Weld flanges: ANSI 20" and ANSI 24"
Crankcase	Open crankcase ventilation	[] Crankcase explosion relief valve
Systems		
Fuel	Primary fuel filter with water separator	
	Secondary fuel filters (engine mounted)	
Generator	• 3 phase brushless, salient pole	[] Oversize generators
SR5	Space heater kit IFO all times at the BTDIs	[] Power connection arrangement
	IEC platinum stator RTD's Cat digital voltage regulator (CDVR)	
Governor	ADEM™ A4	[] Redundant shutdown
0 1	FN00 400 40 4 11	
Control Panels	EMCP 4.2 Genset Controller	[] Local & remote annunciator modules [] Discrete I/O module
Parieis		[] Generator temperature monitoring & protection
		[] Remote monitoring
		[] Load share module
Lube	Lubricating oil	
	Oil filter, filler and dipstick	
	Oil drain line with valves	
	• Fumes disposal	
	Gear type lube oil pump	
	Integral lube oil cooler Electric prelube pumps	
Mounting	Rails-engine / generator	[] Spring type linear vibration isolators
Widunting	Rubber anti-vibration mounts (shipped loose)	[] IBC vibration isolators
Starting /	Dual 24 volt electric starting motors	[] Oversized battery set
Charging	Batteries with rack and cables	[] 75 amp charging alternator
	Battery disconnect switch	[] Battery chargers (20,35 or 50 Amp)
		[] Jacket water heater
		[] Redundant Electric Starter
General	RH service (Except LH Service Oil Filter)	[] Barring group- manual or air powered
	Paint - Caterpillar Yellow with high gloss black rails	[] Factory test reports
	SAE standard rotation Thrubael and flowbael begging. SAE No. 00.	
	Flywheel and flywheel housing - SAE No. 00	

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SPECIFICATIONS

CAT GENERATOR

Frame	3055
Excitation	PM
Pitch	0.6667
Number of poles	4
Number of bearings	
Number of Leads	6
Insulation	Class F
IP rating	Drip proof IP23
Over speed capability - % of rat	ed125%
Wave form deviation	3 %
Voltage regulator	.3 phase sensing with
seled	ctable V/Hz regulation
Telephone Influence Factor	Less than 50
Harmonic Distortion	Less than 5%

CAT DIESEL ENGINE

C175-20 SCAC, V-20, 4 stroke, water-cooled diesel

Bore	175.00 mm (6.89 in)
Stroke	220.00 mm (8.66in)
Displacement	105.8 L (6456.31 in ³)
Compression ratio	15.3:1
Aspiration	TA
Fuel system	Common Rail
Governor Type	ADEM™ A4

CAT EMCP 4 CONTROL PANELS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed Adjust
- 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
- True RMS AC metering, 3-phase, ±1% accuracy.

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

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Technical Data

Open Generator Set - 1500 rpm/50 Hz/11 000 Volts	DM	DM8940	
Low BSFC			
Generator Set Package Performance			
Genset Power rating @ 0.8 pf	4000 kVA		
Genset Power Rating without fan	3200 ekW		
Fuel Consumption			
100% Load with fan	787.2 L/hr	208.0 Gal/hr	
75% Load with fan	586.3 L/hr	154.9 Gal/hr	
50% Load with fan	409.5 L/hr	108.2 Gal/hr	
Inlet Air			
Combustion air inlet flow rate	267.0 m ³ /min	9429 cfm	
Exhaust System			
Exhaust stack gas temperature (engine out)	421.7 °C	791 °F	
Exhaust gas flow rate	652.1 m³/min	23028 cfm	
Exhaust system backpressure (maximum allowable)	6.7 kPA	26.9 in water	
Heat Rejection			
Heat rejection to cooolant (total)	1614 kW	91754 Btu/min	
Heat rejection to exhaust (total)	2763 kW	157080 Btu/min	
Heat rejection to aftercooler	373 kW	21186 Btu/min	
Heat rejection to atmosphere from engine	248 kW	14093 Btu/min	
Heat rejection to atmosphere from generator	165 kW	9392 Btu/min	
Alternator			
Motor starting capabiliy @30% voltage dip	10130 skVA		
Frame	3055		
Temperature Rise	130 °C	234 °F	
Lube System			
Sump refil with filter	675 L	178.3 gal	
Emissions (Nominal) ²			
NOx g/hp-hr	7.87 g/hp-hr		
CO g/hp-hr	0.13 g/hp-hr		
HC g/hp-hr	0.05 g/hp-hr		
PM g/hp-hr	0.01 g/hp-hr		

Note: This generator set is not offered with an engine driven radiator. Addition of an engine driven fan will reduce the output below the nameplate rating.

¹ Some 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.

² 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 btw/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 tie of measurement.

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

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DIMENSIONS

Package Dimensions					
Length	6719 mm	267.5 in			
Width	2377 mm	93.6 in			
Height	2556 mm	100.6 in			

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

Yellow Power Limited Haywood Mill Mill Lane Great Haywood Staffordshire, ST18 0RJ Tel: 01889 882255 Web: www.yellowpower.

Web: www.yellowpower.com email: sales@yellowpower.com