DIESEL GENERATOR SET

Image shown may not reflect actual package.

STANDBY
175 ekW 219 kVA

PRIME
158 ekW 197 kVA
60 Hz 1800 rpm 480 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
- EPA Certified for Stationary Emergency Application (EPA Tier 3 emissions levels)

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℠ program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

Cat® Model D175-2, Three Phase

CAT C6.6 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
- Electronic engine control

GENERATOR SET
- Complete system designed and built at ISO 9001 certified facilities
- Factory tested to design specifications at full load conditions

CAT EMCP 4 CONTROL PANELS
- Simple user friendly interface and navigation
- Scalable system to meet a wide range ofcustomer needs
- Integrated Control System and Communications Gateway

SEISMIC CERTIFICATION
- Seismic Certification available
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength. IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer
- Seismic Certification per Applicable Building codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012 CBC 2007, CBC 2010
- Pre-approved by OSHPD and carries an OSP-0321-10 for use in healthcare projects in California

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FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Dry replaceable paper element type with restriction indicator	
Cooling	• Radiator and cooling fan complete with protective guards • Standard ambient temperatures up to 50°C (122°F)	[ ] Radiator stone guard [ ] Radiator transition flange
Exhaust		[ ] Industrial [ ] Residential [ ] Critical Mufflers [ ] Overhead silencer mounting kit
Fuel	• Flexible fuel lines to base with NPT connections	[ ] Sub-base dual wall UL listed 24 hr fuel tank [ ] Sub-base dual wall UL listed 48 hr fuel tank [ ] Emergency vent 12ft extension [ ] 5 gallon spill containment
Generator	• Class H insulation • Drip proof generator air intake (NEMA 2,IP23) • Electrical design in accordance with with BS5000 Part 99, EN61000-6, IEC60034-1, NEMA MG-1.33 • IP23 Protection	[ ] Generator upgrade 1 size [ ] Permanent Magnet Excitation [ ] Internal Excitation [ ] Anti-condensation space heater
Power Termination	• Circuit breakers, UL/CSA listed, 3 pole (100% rated) • Power center houses EMCP controller and control terminations (CB) • Segregated low voltage wiring termination panel • NEMA 1 steel enclosure, vibration isolated • Electrical stub-up area directly below circuit breaker	[ ] Auxiliary contacts [ ] Shunt trip [ ] Overload shutdown via breaker
Governor	• ADEM™A4	
Control Panels	• EMCP 4.2 digital control panel • Vibration isolated NEMA 1 enclosure with lockable hinged door • DC and AC Wiring harnesses	[ ] NFPA110 upgrade [ ] Control panel chassis
Lube		[ ] Lube oil heater
Mounting	• Heavy-duty fabricated steel base with lifting points • Anti-vibration pads to ensure vibration isolation • Complete OSHA guarding • Stub-up pipe ready for connection to silencer pipework	[ ] IBC Seismic and OSHPD certification per Applicable Building Codes: IBC2000, IBC2003, IBC2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010
Starting/Charging	• 12 volt starting motor • Batteries with rack and cables	[ ] Battery charger – UL 10 amp [ ] Battery disconnect switch [ ] Battery removal (does not remove rack and cables) [ ] Coolant Heater
General	• High gloss polyurethane paint, Caterpillar Yellow except rails and radiators gloss black • Anticorrosive paint protection • All electroplated hardware	[ ] CSA Certified [ ] Weather protective enclosure Industrial/Critical [ ] Sound attenuated protective enclosure [ ] Caterpillar tool set [ ] Caterpillar White paint

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SPECIFICATIONS

STANDARD CAT GENERATOR		
Frame size	LC5014F	
Excitation	Self excitation	
Pitch	0.6667	
Number of poles	4	
Number of bearings	Single bearing	
Number of leads	12	
Insulation	Class H	
IP Rating	IP23	
Overspeed capability (%)	125	
Wave form deviation (%)	2	
Voltage regulator	Single phase sensing	
Voltage regulation	+/- 0.5% (steady state)	
Additional Voltage Information:		
Three Phase	Prime	Standby
208V Temp Rise	105°C / 189°F	130°C / 234°F
240V Temp Rise	105°C / 189°F	130°C / 234°F
480V Temp Rise	80°C / 144°F	105°C / 189°F
600V Temp Rise	105°C / 189°F	105°C / 189°F
– Consult your Cat dealer for other available voltages		

CAT DIESEL ENGINE	
C6.6 In-line 6, 4-cycle diesel	
Bore	105.0 mm (4,13 in)
Stroke	127.0 mm (5.0 in)
Displacement	6.6 L (402.8 in^3)
Compression ratio	16.2:1
Aspiration	T
Fuel system	Common rail
Governor type	Electronic

EMISSIONS (Nominal[1])	
NOx + HC g/kWhr	3.7
CO g/kWhr	1.09
PM g/kWhr	0.17

[1]The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engne variations. Emissions data is based on 100% load.

CAT EMCP 4 SERIES CONTROLS

EMCP 4 controls including:
- Run / Auto / Stop Control
- Speed and Voltage Adjust
- Engine Cycle Crank
- 12 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
- 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

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TECHNICAL DATA

Open Generator Set – 1800 rpm/60 Hz/480 Volts	P2694A			
Tier 3	**Standby**		**Prime**	
Generator Set Package Performance				
Genset power rating @ 0.8 pf	218.8 kVA		196.9 kVA	
Genset power rating with fan	175 ekW		157.5 ekW	
Fuel Consumption				
100% load with fan	52.1 L/hr	13.8 gal/hr	47.8 L/hr	12.6 gal/hr
75% load with fan	41.2 L/hr	10.9 gal/hr	37.9 L/hr	10.0 gal/hr
50% load with fan	30.0 L/hr	7.9 gal/hr	27.8 L/hr	7.3 gal/hr
Cooling System[1]				
Air flow restriction (system)	0.12 kPa	0.48 in. water	0.12 kPa	0.48 in. water
Engine coolant capacity with radiator/exp. tank	21.0 L	5.5 gal	21.0 L	5.5 gal
Engine coolant capacity	9.5 L	2.5 gal	9.5 L	2.5 gal
Radiator coolant capacity	11.5 L	3.0 gal	11.5 L	3.0 gal
Inlet Air				
Combustion air inlet flow rate	13.4 m^3/min	473.2 cfm	13.0 m^3/min	459.1 cfm
Exhaust System				
Exhaust stack gas temperature	537.4°C	999°F	526.2°C	979°F
Exhaust gas flow rate	35.5 m^3/min	1254 cfm	34.1 m^3/min	1204 cfm
Exhaust flange size (internal diameter)	89.0 mm	3.5 in	89.0 mm	3.5 in
Exhaust system back pressure	15.0 kPa	60.2 in. water	15.0 kPa	60.2 in. water
Heat Rejection				
Heat rejection to coolant (total)	93.5 kW	5317Btu/min	86.8 kW	4936 Btu/min
Heat rejection to exhaust (total)	168.8 kW	9599 Btu/min	157.2 kW	8940 Btu/min
Heat rejection to aftercooler	39.9 kW	2269 Btu/min	36,3 kW	2064 Btu/min
Heat rejection to atmosphere from engine	16.2 kW	921.3 Btu/min	14.9 kW	847.3 Btu/min
Heat rejection to atmosphere from generator	13.2 kW	750.7 Btu/min	11.6 kW	659.7 Btu/min
Alternator[2]				
Motor starting capability @ 30% voltage dip	454 skV		454 skV	
Frame	LC5014F		LC5014F	
Temperature rise	105°C	189°F	80°C	144°F
Lubrication System				
Total oil capacity	16.5 L	4.4 gal	16.5 L	4.4 gal
Oil pan	15.5 L	4.1 gal	15.5 L	4.1 gal

[1]For ambient and altitude capabilities consult your Cat dealer. Airflow restriction (system) is added to existing restriction from factory.
[2]Generator temperature rise is based on a 40°C (104°F) ambient per NEMA MG1-32.

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RATING DEFINITIONS AND CONDITIONS

Applicable Codes and Standards: AS1359, CSA C22.2 No 100-04, UL142, UL489, UL601, UL869, UL2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, 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.

Prime – Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand of 100% of prime-rated eKW with 10% of overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

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

Fuel rates are based on fuel oil to specification EPA 2D 89.330-96 with a density of 0.845 – 0.850 kg/L (7.052 – 7.094 lbs/U.S. gal.) @ 15°C (59°F) and fuel inlet temperature 40°C (104°F). 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.

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DIMENSIONS

Package Dimensions		
Length	3037 mm	120 in
Width	1110 mm	44 in
Height	483 mm	58 in

NOTE: For reference only – do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #4190061).

Performance No.: P2694A

Feature Code: NAC138P

Gen. Arr. Number: 3932561

Source: U.S. Sourced

LEHE0425-01 (04/13)

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