
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•SSM 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 of customer 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 | <ul style="list-style-type: none"> • Dry replaceable paper element type with restriction indicator | |
| Cooling | <ul style="list-style-type: none"> • Radiator and cooling fan complete with protective guards • Standard ambient temperatures up to 50°C (122°F) | <ul style="list-style-type: none"> <input type="checkbox"/> Radiator stone guard <input type="checkbox"/> Radiator transition flange |
| Exhaust | | <ul style="list-style-type: none"> <input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Critical Mufflers <input type="checkbox"/> Overhead silencer mounting kit |
| Fuel | <ul style="list-style-type: none"> • Flexible fuel lines to base with NPT connections | <ul style="list-style-type: none"> <input type="checkbox"/> Sub-base dual wall UL listed 24 hr fuel tank <input type="checkbox"/> Sub-base dual wall UL listed 48 hr fuel tank <input type="checkbox"/> Emergency vent 12ft extension <input type="checkbox"/> 5 gallon spill containment |
| Generator | <ul style="list-style-type: none"> • Class H insulation • Drip proof generator air intake (NEMA 2,IP23) • Electrical design in accordance with BS5000 Part 99, EN61000-6, IEC60034-1, NEMA MG-1.33 • IP23 Protection | <ul style="list-style-type: none"> <input type="checkbox"/> Generator upgrade 1 size <input type="checkbox"/> Permanent Magnet Excitation <input type="checkbox"/> Internal Excitation <input type="checkbox"/> Anti-condensation space heater |
| Power Termination | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> <input type="checkbox"/> Auxiliary contacts <input type="checkbox"/> Shunt trip <input type="checkbox"/> Overload shutdown via breaker |
| Governor | <ul style="list-style-type: none"> • ADEM™A4 | |
| Control Panels | <ul style="list-style-type: none"> • EMCP 4.2 digital control panel • Vibration isolated NEMA 1 enclosure with lockable hinged door • DC and AC Wiring harnesses | <ul style="list-style-type: none"> <input type="checkbox"/> NFPA110 upgrade <input type="checkbox"/> Control panel chassis |
| Lube | | <ul style="list-style-type: none"> <input type="checkbox"/> Lube oil heater |
| Mounting | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> <input type="checkbox"/> IBC Seismic and OSHPD certification per Applicable Building Codes: IBC2000, IBC2003, IBC2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010 |
| Starting/Charging | <ul style="list-style-type: none"> • 12 volt starting motor • Batteries with rack and cables | <ul style="list-style-type: none"> <input type="checkbox"/> Battery charger – UL 10 amp <input type="checkbox"/> Battery disconnect switch <input type="checkbox"/> Battery removal (does not remove rack and cables) <input type="checkbox"/> Coolant Heater |
| General | <ul style="list-style-type: none"> • High gloss polyurethane paint, Caterpillar Yellow except rails and radiators gloss black • Anticorrosive paint protection • All electroplated hardware | <ul style="list-style-type: none"> <input type="checkbox"/> CSA Certified <input type="checkbox"/> Weather protective enclosure Industrial/Critical <input type="checkbox"/> Sound attenuated protective enclosure <input type="checkbox"/> Caterpillar tool set <input type="checkbox"/> 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 (Nominal¹) | | |
| NOx + HC g/kWhr | 3.7 | |
| CO g/kWhr | 1.09 | |
| PM g/kWhr | 0.17 | |

¹The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine 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 | | | |
|---|--|---|--|--|
| | Standby | | Prime | |
| Generator Set Package Performance Genset power rating @ 0.8 pf Genset power rating with fan | 218.8 kVA 175 kW | | 196.9 kVA 157.5 kW | |
| Fuel Consumption 100% load with fan 75% load with fan 50% load with fan | 52.1 L/hr 41.2 L/hr 30.0 L/hr | 13.8 gal/hr 10.9 gal/hr 7.9 gal/hr | 47.8 L/hr 37.9 L/hr 27.8 L/hr | 12.6 gal/hr 10.0 gal/hr 7.3 gal/hr |
| Cooling System¹ Air flow restriction (system) Engine coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity | 0.12 kPa 21.0 L 9.5 L 11.5 L | 0.48 in. water 5.5 gal 2.5 gal 3.0 gal | 0.12 kPa 21.0 L 9.5 L 11.5 L | 0.48 in. water 5.5 gal 2.5 gal 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 Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system back pressure | 537.4°C 35.5 m ³ /min 89.0 mm 15.0 kPa | 999°F 1254 cfm 3.5 in 60.2 in. water | 526.2°C 34.1 m ³ /min 89.0 mm 15.0 kPa | 979°F 1204 cfm 3.5 in 60.2 in. water |
| Heat Rejection Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to aftercooler Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator | 93.5 kW 168.8 kW 39.9 kW 16.2 kW 13.2 kW | 5317Btu/min 9599 Btu/min 2269 Btu/min 921.3 Btu/min 750.7 Btu/min | 86.8 kW 157.2 kW 36.3 kW 14.9 kW 11.6 kW | 4936 Btu/min 8940 Btu/min 2064 Btu/min 847.3 Btu/min 659.7 Btu/min |
| Alternator² Motor starting capability @ 30% voltage dip Frame Temperature rise | 454 skV LC5014F 105°C | 189°F | 454 skV LC5014F 80°C | 144°F |
| Lubrication System Total oil capacity Oil pan | 16.5 L 15.5 L | 4.4 gal 4.1 gal | 16.5 L 15.5 L | 4.4 gal 4.1 gal |

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

²Generator 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

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