C27 ACERT™ Diesel
Oilfield Generator Set
725 ekW
60 Hz, 1800 rpm

CAT® ENGINE SPECIFICATIONS

V-12, 4-Stroke-Cycle water-cooled diesel
Bore ................. 137.2 mm (5.41 in)
Stroke ............... 152.4 mm (6 in)
Displacement .......... 27 L (1648 in³)
Compression Ratio .......... 15:1
Aspiration .......... Turbocharged-Aftercooled
Fuel System............. MEUI
Governor Type.......... ADEM™ A4
Package Weight......... 8799.7 kg (19,400 lbs)

FEATURES

Fuel/Emissions Strategy
- Configuration options for either best fuel economies or emissions reductions (non-certified, U.S. EPA Non-road Tier 2 levels) available to fit any application

Engine Design
- Rugged components for durability in harsh oilfield conditions
- Increased power density and rugged base for highly mobile jobs
- Permanent magnet, two-bearing, close coupled, oversized generator ideal for oilfield applications
- Heavy-duty, easy-to-clean cooling system with high ambient capability
- Advanced controls
- Focus on operator safety

Advanced Digital Engine Management
ADEM A4 control system providing integrated ignition, speed governing, protection, and controls. ADEM A4 has improved: user interface, display system, shutdown controls, and system diagnostics.

Cat® EMCP 4.2 Series Control Panels
- Integrated control system and communications gateway
- EMCP 4.2 is standard and offers basic engine/generator monitoring, metering and protection and an open protocol allowing for simple integration.
- Also features more advanced options including power metering, modbus capability, and programmable discreet output

Product Support Offered Through Global Cat Dealer Network
- More than 2,200 dealer outlets
- Cat factory-trained dealer technicians service every aspect of your petroleum engine
- Cat parts and labor warranty

Preventive maintenance agreements available for repair-before-failure options

S•O•S™ program matches your oil and coolant samples against Caterpillar set standards to determine:
- Internal engine component condition
- Presence of unwanted fluids
- Presence of combustion by-products
- Site-specific oil change interval

Over 80 Years of Engine Manufacturing Experience
Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable products.
- Cast engine blocks, heads, cylinder liners, and flywheel housings
- Machine critical components
- Assemble complete engine

Web Site
For all your petroleum power requirements, visit www.catoilandgas.cat.com.
STANDARD EQUIPMENT

Air Inlet System
Heavy-duty dual element canister-type air cleaner
Service indicator

Control Panels
EMCP 4.2
User interface panel — rear mount
Emergency stop pushbutton
Generator housing mounted

Cooling System
Radiator with guard sized for 50°C
Side-by-side cores
Metal top and bottom tanks
Coolant drain line with valve
Fan and belt guards
Cat Extended Life Coolant
Coolant level sensor

Exhaust System
Dry exhaust manifold

Fuel System
Primary fuel filter
Secondary fuel filter
Manual fuel priming pump
Fuel pump

Generators
Class H insulation
Permanent magnet
IP23 protection
Form wound stator

Anti-condensation space heaters
Two bearing
Close coupled
Oversized

Governor
ADEM™ A4

Lube System
Lubricating oil and filter
Oil cooler
Oil drain line with valves
Fumes disposal — left side
Gear-type lube oil pump

Mounting System
Heavy-duty oilfield welded steel base (skiddable)
Anti-vibration mounts (shipped loose)
Designed welded base for increased durability
(I-beam design)
Dragability
Package lifting eyes

Starting/Charging System
24V starting motor(s)
24V, 45-amp charging alternator

General
Paint — Cat yellow except rails and radiators
(gloss black)
SAE standard rotation
Flywheel and flywheel housing — SAE No. 0

OPTIONAL EQUIPMENT

Air Inlet System
Precleaners

Control System
Direct rack

Cooling System
Jacket water heater

Exhaust System
Flange and exhaust expanders
Exhaust shielding

Generators
Self excited

Mounting System
Short base — 187” (4750 mm) total length
Note: short base option does not include drag bars

Starting/Charging System
Air starting motor
SPECIFICATIONS

Cat SR4B Generator
Frame size .................................. 691, 693
Excitation ........ Permanent Magnet, SE Option
Pitch ....................................... 0.7143, 0.667
Number of poles ......................... 4
Number of bearings ..................... 2
Number of leads .......................... 6
Insulation ........... UL 1446 Recognized Class H
with tropicalization and antiabrasion
IP Rating ......................... Drip Proof IP23
Alignment .......................... Close Coupled

Cat EMCP 4.2 Series Control Panel
EMCP 4 controls
Run/Auto/Stop control
Speed adjust
Voltage adjust
Engine cycle crank
Emergency stop pushbutton
EMCP 4.2 controller
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 and L-N), frequency (Hz)
Amps (per phase and average)
Power Factor (per phase and average)
kW (per phase, average, and percent)
kVA (per phase, average, and percent)
kVAR (per phase, average, and percent)
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 CAN annunciator
- Remote serial annunciator
- RTD module
- Thermocouple module

C27 ACERT OILFIELD GENERATOR SET PACKAGES

<table>
<thead>
<tr>
<th></th>
<th>Drilling – 60 Hz</th>
<th>Production/Camp Power – 60 Hz</th>
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<tr>
<td>ekW Rating</td>
<td>725</td>
<td>725</td>
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<tr>
<td>kVA Rating</td>
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<tr>
<td>rpm</td>
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<td>Rated PF</td>
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<td>Temperature Rise</td>
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<td>300%/10 sec</td>
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<td>Excitation</td>
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<td>PMG standard, SE option</td>
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<td>Voltage</td>
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<td>Voltage Regulator</td>
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<td>Configuration</td>
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<td>Coastal Protection</td>
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<tr>
<td>Space Heater</td>
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<td>Construction</td>
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<tr>
<td>Frame Size</td>
<td>693</td>
<td>691</td>
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<tr>
<td>Available Configurations</td>
<td>Low BSFC, Low Emissions*</td>
<td>Low BSFC, Low Emissions*</td>
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<tr>
<td>BSFC – Fuel Economies Setting</td>
<td>0.328 lb/bhp-hr</td>
<td>0.328 lb/bhp-hr</td>
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*Non-certified Tier 2 levels

https://barringtondieselclub.co.za/ for Manuals - specs - Bolt torques
DIMENSIONS

<table>
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<th>Package Dimensions</th>
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<tr>
<td>Length</td>
<td>5207 mm</td>
<td>205 in</td>
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<tr>
<td>Length w/short base option</td>
<td>4750 mm</td>
<td>187 in</td>
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<tr>
<td>Width</td>
<td>1905 mm</td>
<td>75 in</td>
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<tr>
<td>Height</td>
<td>2180 mm</td>
<td>86 in</td>
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<tr>
<td>Engine Weight (dry)</td>
<td>8799.7 kg</td>
<td>19,400 lb</td>
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</table>

Note: For reference only — do not use for installation design. See general dimension drawing #3716011 for detail.

RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications:
AS1359, CSA, IEC60034, ISO3046, ISO8528, NEMA MG 1-33, UL508A, 98/37/EC.

Prime output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year. Prime power in accordance with ISO3046. Prime ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the alarm 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.

From the library of Barrington Diesel Club