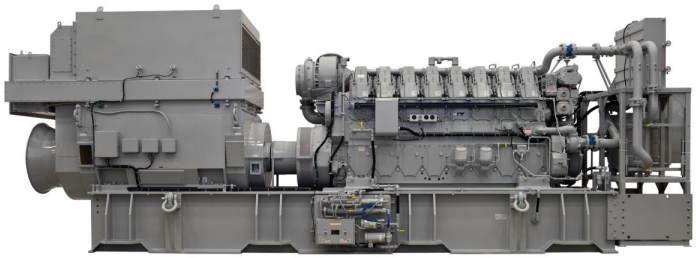
C280-8 Offshore Generator Set

Oil & Gas



The C280-8 generator set incorporates years of proven success of the 3600 engine with the latest technology in electronics. The result is a fully integrated solution that is ideal for offshore operations.Ideal applications for the C280-8 offshore generator set are main power on-board drilling and production vessels and platforms.Complete package offerings are MCS type-approved and compliant with IMO Tier II emissions standards, making integration of the Cat C280-12 generator set into the vessel a simplified operation.Cat generator sets are backed by the worldwide network of Cat dealers ready to support your operation with technical support, service, parts, and warranty.Cat C280-8 offshore generator set. Ratings: 2208-2600 ekW (2760-3714 kVA) @ 50/60 Hz (1000/900 rpm). IMO Tier II emissions compliant.

Specifications

Engine Specifications		
Minimum Rating	2300 ekW	3084 kV·A
Maximum Rating	2710 ekW	3634 kV·A
Emissions		IMO Tier II/EPA Marine Tier 2
Displacement	148 l	9031 in³
Oil Change Interval	1000 h	1000 h
Weight	49000 kg	108027 lb
Generator Set Control		Generator Monitoring System (GMS)
Aspiration		Turbocharged-Aftercooled
Stroke	300 mm	11.8 in
Engine Control		Electronic ADEM™ A3
Fuel System		EUI
Bore	280 mm	11 in

Dimensions		
Length	8140 mm	320.5 in
Height	3406 mm	134.1 in
Width	2326 mm	91.6 in

Capacity for Liquids		
Cooling System - Engine	530 l	140 gal (US)
Lube Oil System - Refill	1094 l	289 gal (US)

Benefits and Features

Product Design

- Cat C280 engines incorporate more than 20 years of proven component reliability and durability from 3600 engines

Simplified Packaging Concept

Offshore drilling package provides single lift handling- Caterpillar warranty for all packaged components- Includes most ancillaries, ready-to-run package- Easy to handle and install, few shipped-loose parts

Custom Packaging

For any petroleum application, trust Caterpillar to meetyour project needs with custom factory generator setsand mechanical packages. Cat engines, generators,controls, radiators, and transmissions can be customdesigned and matched in collaboration with our localdealers to create unique solutions. Custom packagesare globally supported and are covered by a one-yearwarranty after startup.

Full Range of Attachments

Large variety of factory-installed engine attachmentsincreases application flexibility and reduces installationtime.Testing• Every unit is full-load tested to ensure proper packageperformance• Full range of factory tests and reports are availableincluding performance, torsional-vibration analysis, fuelconsumption, engine, and generator special tests

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Product Support Offered Through the Global Cat Dealer Network

More than 2,200 dealer outletsCaterpillar factory-trained dealer technicians serviceevery aspect of your Cat engineCaterpillar parts and labor warrantyPreventive maintenance agreements available for repairbefore-failure optionsS•O•SSM program matches your oil and coolant samplesagainst Caterpillar set standards to determine:- Internal engine component condition- Presence of unwanted fluids and combustionby-products- Site-specific oil change interval

Over 80 Years of Engine Manufacturing Experience

• C280 engines incorporate over 20 years of provencomponent reliability and durability from 3600 engines• Large field population in offshore applications providesproven performance, reliability, durability, andestablished worldwide product support network

Web Site

Visit www.catoilandgasinfo.com to learn more.

Improved Fuel Efficiency

Electronic Unit Injection (EUI) fuel system providesoptimized combustion at any load- Lower specific fuel consumption at part load- Reduced transient smoke and emissions

Standard Equipment

Product Consist

• The engine is a turbocharged, aftercooled, four-strokecycle-diesel, electronic unit injection engine with a280 mm (11 in) bore by 300 mm (11.8 in) stroke. SAEstandard rotation is counterclockwise as viewed from therear of engine flywheel.

Emissions Certifications

• GL and CCS approved IMO certificate – includesstatement of compliance or Engine International AirPollution Prevention (EIAPP) certificate, supplied by theRecognized Organization (RO) where available, andtechnical file to be kept on board per IMO regulations.

Marine Certification Society type-approval

• ABS, BV, CCS, DnV, GL, LRS

• Spray shielding to meet SOLAS regulations for flammablefluids

European Certifications

• Declaration of Incorporation for EU Machinery Safety

- Directive and EU Low Voltage Safety Directive

Air Inlet System

- Fresh water aftercooler, corrosion resistant coated (airside)
- Air inlet shutoff
- Turbocharger, rear-mounted, oil lubricated

Control System

- Single Cat ADEM A3 electronic engine control module withelectronic unit injector fuel system, rigid wiring harness(10 amp 24V power required to drive electronic enginecontrol modules)

Cooling System

- Gear-driven jacket water (JW) pump
- Gear-driven separate-circuit aftercooler/oil cooler (AC/OC) pump
- Engine coolant water drains

Exhaust System

- Dry, gas tight exhaust manifold

Fuel System

- Distillate fuel (requires viscosity ranging from 1.4 cStto 20 cSt at 38°C)
- Fuel pump, gear-driven
- Fuel transfer pump (mounted on left-hand side)
- Duplex fuel filters, rear-engine-mounted
- Electronically controlled unitinjectors

Lube system

- Centrifugal oil filters with single shutoff, service-side enginemounted on cylinder block inspection covers (includesinstalled oil lines and single shutoff valve), filters centrifugebypass oil from the main lubricating oil pump (can be servicedwith the engine running)
- Oil filler and dipstick
- Oil pressure regulating valve
- Dry engine-mounted sump system that gravity feeds intobase assembly integral sump
- Engine-mounted duplex oil filter
- Intermittent air prelube
- Continuous electric prelube
- Redundant prelube with continuous electric prelube andintermittent air prelube backup
- Oil pan drain valves
- Electric continuous prelube pump
- Lube oil heater
- Oil pump - gear drive

Protection System

- Crankcase explosion relief valves
- Alarm and shutdown during abnormal operation

Instrumentation

- PLC-based system provides protection, monitoring, andcontrol housed in a NEMA 4 (IP66) enclosure.

General

- Service Literature

Optional Equipment

Air Inlet System

- 90° adapter and straight adapters for air inlet to turbochargerAir cleaners
- Air cleaners with Cat dry paper filter elements (approximately99.9% efficient at filtering SAE fine dust)
- Soot filter

Control System

- 4-20 mA load feedback signal
- Load sharing module
- Direct rack module

Cooling System

- Separate Circuit Aftercooler (SCAC)
- Customer water connections
- Jacket water thermostats
- AC/OC thermostats
- Accessory module-mounted high volume expansion tank
- Jacket water heater
- Heat recovery connections and thermostats for use withwater maker system
- ANSI connection adapters

Exhaust System

- Exhaust manifold shields
- Vertical or 30° outboard exhaust orientation options
- Exhaust outlet expanders and weld flanges

Fuel System

- Manual fuel priming pump
- Duplex primary fuel strainer
- Flexible fuel hose connections

Lube System

- Dry engine-mounted sump system that gravity feeds intobase assembly integral sump
- Engine-mounted duplex oil filter
- Intermittent air prelube
- Continuous electric prelube
- Redundant prelube with continuous electric prelube andintermittent air prelube backup
- Oil pan drain valves
- Electric continuous prelube pump

- Lube oil heater

Protection System

- Wiring meets MCS requirements
- Upgrade PLC monitor to industrial PC
- Upgrades AC/OC, JW and start air pressure from contactorsto transducers
- Raw water/sea water pressure transducer
- Modbus communication
- Beacon and horn
- Single engine remote display monitor
- Emergency pump start signal
- Cabinet cooler
- Generator power monitoring
- Remote relay panel
- Turbocharger speed sensors
- Cylinder pressure relief valve
- Oil mist detector
- Flywheel and damper guards

Mounting System

- Base aseembly
- Vertically-restrained vibration isolators and weld plates

Starting System

- Single turbine air starters
- Boost control valve for extremely cold ambient conditions
- Air start pressure reducing valves

General

- Torsional couplings
- Mounting groups for engine, generator, and base
- Accessory module to mount attachments such as theexpansion tank, heat exchanger, instrument panel andengine controls, annunciator panel, alarm and shutdowncontactors, fuel strainer
- Flywheel
- Engine barring device options:
- One-year storage preservation
- Oceanic transportation shipping protection (shrink wrapand tarp)
- Engine testing – certified dynamometer test, fuelconsumption test, rated speed performance test, overloadtest, minimum power setting, peak firing pressure test,turbo work cert and crankshaft work cert
- Standard and project-specific witness testing
- Spare parts kits

Literature

- Project-specific installation drawings

- Electrical schematics and P&ID drawings