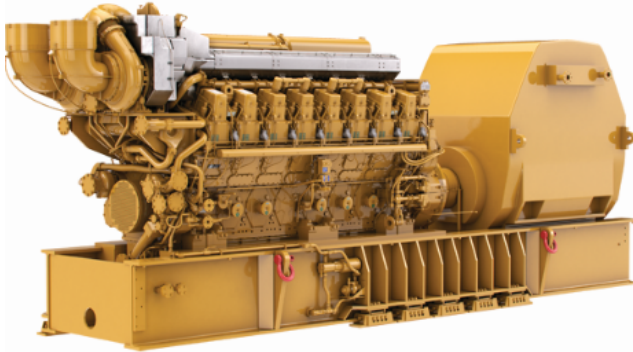




C280-16 IMO III Offshore Generator Set

5500 ekW
5730 bkW (7684 bhp)
60 Hz (900 rpm)



CAT® GENERATOR SET SPECIFICATIONS

V-16, 4-Stroke-Cycle-Diesel

Emissions	IMO Tier III
Bore	280 mm (11.0 in)
Stroke	300 mm (11.8 in)
Displacement	296 L (18,062 in ³)
Aspiration	Turbocharged-Aftercooled
Fuel System	EUI
Engine Control	Dual ADEM™ A4
Refill Capacity	
Cooling System	1245 L (329 U.S. gal)
Lube Oil System	1677 L (443 U.S. gal)
Oil Change Interval	1000 hours

FEATURES

Product Design

- Cat C280 engines are type approved by the following marine classification societies:
 - American Bureau of Shipping
 - China Classification Society
 - Det Norske Veritas
 - Germanischer Lloyd
- Please contact the ASC for additional certification availability
- Switchable IMO Tier II/III emissions certified through DnV/GL

Simplified Packaging Concept

- Single-point AC and DC connection points at distribution panel
- Ready-to-run package, includes most ancillary equipment
- Single lift handling
- Few shipped-loose parts simplify handling at installation
- Caterpillar warranty covers all factory package components worldwide

Custom Packaging

For any Oil & Gas application, trust Caterpillar to meet your project needs with custom factory generator sets and mechanical packages. Cat engines, generators, controls, radiators, and transmissions can be custom designed and matched in collaboration with our local dealers to create unique solutions. Custom packages are globally supported and are covered by a one-year warranty after startup.

Full Range of Attachments

Large variety of factory-installed engine attachments increases application flexibility and reduces installation time.

Testing

- Every unit is full-load tested to ensure proper package performance
- Full range of factory tests and reports are available including performance, torsional-vibration analysis, fuel consumption, engine, and generator special tests

Product Support Offered Through Global Cat Dealer Network

More than 2,200 dealer outlets

Caterpillar factory-trained dealer technicians service every aspect of your Cat engine

Caterpillar parts and labor warranty

Preventive maintenance agreements available for repair-before-failure options

S•O•SSM program matches your oil and coolant samples against Caterpillar set standards to determine:

- Internal engine component condition
- Presence of unwanted fluids and combustion by-products
- Site-specific oil change interval

Over 80 Years of Engine Manufacturing Experience

- C280 engines incorporate over 20 years of proven component reliability and durability from 3600 engines
- Large field population in offshore applications provides proven performance, reliability, durability, and established worldwide product support network

Web Site

For all your petroleum power requirements, visit www.cat.com/oilandgas

CONFIGURATION

Product Consist

The engine is a turbocharged, aftercooled, four-stroke-cycle-diesel cycle, electronic unit injection engine with a 280 mm (11 in) bore by 300 mm (11.8 in) stroke. SAE standard rotation is counterclockwise as viewed from the rear of engine flywheel.

Air Inlet System

Fresh water aftercooler, corrosion resistant coated (air side); air inlet shutoff; crankcase breathers, top-mounted; turbochargers (2), rear-mounted, oil lubricated

Control System

Dual Cat ADEM A4 electronic engine control module with electronic unit injector fuel system, rigid wiring harness (10 amp 24V power required to drive electronic engine control modules)

Cooling System

Gear-driven jacket water (JW) pump, gear-driven separate-circuit aftercooler/oil cooler (AC/OC) pump, LH-mounted water connections: JW and AC/OC, 6" ANSI

Exhaust System

Dry, gas tight exhaust manifold; dual turbocharger, rear-mounted; dual wastegate; soft shielding - SOLAS compliant - SCR based closed loop aftertreatment

Fuel System

Distillate fuel (requires viscosity ranging from 1.4 cSt to 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 unit injectors

Lube System

Centrifugal oil filters and lines with single shutoff—RH mounted on cylinder block inspection covers, serviceable with engine running; oil pump, gear driven; oil filler and dipstick—located in base integrated tank; oil pressure regulating valve; crankcase explosion relief valves; duplex oil filter—accessory module mounted; off engine mounted oil cooler—DTO quote required for package connections; base integrated tank—DTO required

Instrumentation

Cat Alarm and Protection System

Features:

- 145 mm (5.7") color monitor to display all engine parameters and alarm annunciation, alarms annunciated with a time and date stamp
- Annunciation of all engine shutdowns, alarms, and status points
- Start/prelube control switch and emergency stop button
- Selection of local/remote control of engine
- Customer connections at terminal blocks inside panel
- Equipped for remote communication MODBUS RS485 and MODBUS TCP
- Two configurable relay outputs
- All engine sensors are monitored by the ECU or the Cat Alarm and Protection System
- The panel can display all engine parameters

Starting System

TDI dual air starting motors, LH rear; shutoff valve; two integrated relay valves with built-in screen #40 mesh and solenoid; air pressure sensor, monitored by Cat Alarm and Protection System – requires customer wiring; maximum operating (dynamic) pressure: 10 bar (150 psi); maximum static pressure: 14 bar (200 psi) 3-inch ANSI flange customer connection; requires customer-provided 3-inch supply air line from receiver or regulator to air starter and flex connection; if regulator is used, Cv of 40 or greater is required

ATTACHMENTS

Emission Certification

DnV/GL approved IMO certificate — includes statement of compliance or Engine International Air Pollution Prevention (EIAPP) certificate, supplied by the Recognized Organization (RO) where available, and technical file to be kept on board per IMO regulations.

Marine Society Certifications

Societies currently granting approval to C280 engines are: ABS, CCS, DnV/GL. Please contact the ASC for additional certification availability.

Marine Society Requirements

Spray shielding to meet SOLAS regulations for flammable fluids

European Certifications

Declaration of Incorporation for EU Machinery Safety Directive and EU Low Voltage Safety Directive

Air Inlet System

90° adapter and straight adapters for air inlet to turbocharger
Air cleaners

Air cleaners with Cat dry paper filter elements

(approximately 99.9% efficient at filtering SAE fine dust)

*Soot filter

*Air cleaner support bracket

Cooling System

Jacket Water Thermostat Options:

- 90°C thermostat, direct connection to expansion tank
- 90°C thermostat, for remote mounting
- 90°C thermostat, fully automatic 3-way with manual override

AC/OC Thermostat Options:

- 32°C thermostat, remote mounted
- 32°C thermostat, fully automatic, 3-way with manual override
- Customer-provided thermostat

Expansion Tank Options:

- Remote-mounted expansion tank
- Accessory-module-mounted expansion tank

*Jacket water heaters

*ANSI connection adapters

Exhaust System

Exhaust manifold shields

*Flexible exhaust fittings

*Weld flanges

Fuel System

*Manual fuel priming pump

*Duplex primary fuel strainer

Lube System

Redundant prelube with continuous electric prelube

Intermittent air prelube backup

Electric continuous prelube pump

* Lube oil heater

Protection System

Flywheel and damper guards

*Cylinder pressure relief valve

*Spray shielding

*Oil mist detector

Starting System

Pressure reducing valve

Mounting System

Design-to-Order (DTO) Base

*Vertically-restrained vibration isolators and weld plates

General

Generator panel

Torsional coupling

Engine barring device options:

- Manual 50:1
- Electric 400V
- Electric 480V

*Accessory module – Front-mounted for mounting expansion tank, heat exchanger, instrument panel, annunciator panel, alarm and shutdown contactors, and fuel strainer

*Engine testing — full-load tested, fuel consumption test, rated speed performance test, overload test, minimum power setting, peak firing pressure test, turbo work certificates, crankshaft work certificates, standard and project-specific witness testing

Literature

*Project-specific installation drawings

*Electrical schematics and P&ID drawings

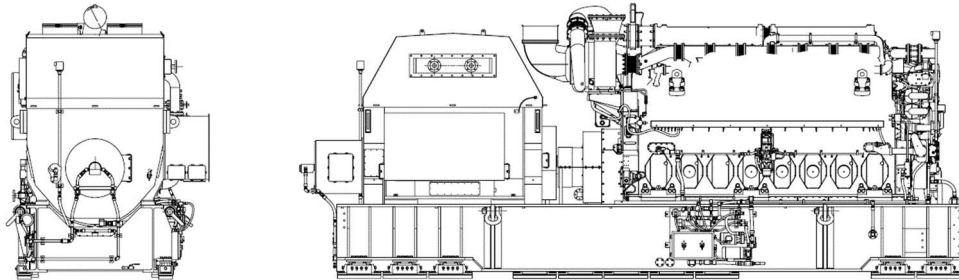
*Indicates an optional attachment



C280-16 OFFSHORE GENERATOR SET

5500 ekW 60 Hz

DIMENSIONS



Dimensions and Weight

Length	10,283 mm	404.8in
Width	2,800 mm	110.2in
Height	4,092 mm	161.1 in
Weight (dry)	66,000 kg	145,505 lbs.

Note: Dimensions are dependent on generator and options. See general dimension drawings for details.

Note: Weight includes engine, generator, base, coupling, water/lube oil heater, generator lubrication module, and piping. Weight may vary depending on individual configuration

Rating (EM1468)

Load	110%	100%	75%	50%	25%
Engine Power (bkW)	6303	5730	4298	2865	1433
Generator Power (ekW)	6051	5500	4126	2750	1376

RATING DEFINITIONS AND CONDITIONS

Rating Definition—Maximum Continuous Rating (MCR) following reference conditions according to the International Association of Classification Societies (IACS) for main and auxiliary engines. An overload of 10% is permitted for one hour within 12 hours of operation.

Fuel Consumption has a tolerance of +5% and is based on fuel oil of 35° API [16°C (60°F)] gravity having a LHV of 52,780 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). Fuel consumption shown with all oil, fuel, and water pumps, engine driven.

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