



Cat C7 ACERT hazardous location engines are the ideal solution for specialized and demanding operations in the oilfield. Engines are hazardous-location certified from the factory to minimize installation design, time, and cost. Decades of field operation and intense research and development allow Cat C7 ACERT hazardous location engines to deliver excellent performance with low operating costs and emissions. Hazardous location engines are certified to operate in potentially explosive environments. Applications powered by C7 ACERT engines include pump skids, acidizing units, cementing units, coil tubing units, and hydraulic power units. Cat engines are backed by the worldwide network of Cat dealers ready to support your operation with technical support, service, parts, and warranty. C7 ACERT hazardous location engines, with ratings 153-172 bkW (205-230 bhp) @ 2200 rpm meet IMO Tier II, U.S. EPA Marine Tier 3, EPA Non-road Tier 3 equivalent and EU Stage IIIA equivalent emission standards. They are available using U.S. EPA and EU Flexibility, and for other regulated and non-regulated areas.

Specifications

General Specifications		
Minimum Rating	153 bkW	205 bhp
Maximum Rating	205 bkW	275 bhp
Governor and Protection	Electronic ADEM™ A4	
Aspiration	Turbocharged-Aftercooled	
Displacement	7.2 L	442 in3
Flywheel and Flywheel Housing	SAE 1, 2, or 3	
Flywheel Teeth	156 (SAE 1), 134 (SAE 2), 126 (SAE 3)	
Rotation (from flywheel end)	Counterclockwise	
Stroke	127 mm	5 in.
Bore	110 mm	4.3 in

Emissions

Emissions	EPA & CARB Non-Road Tier 3, EU Stage IIIA, EPA Marine Tier 2, IMO Tier II
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Dimensions

Length	1113 mm	4.38 in.
Width	851 mm	33.5 in.
Height	1113 mm	43.8 in.
Weight	712 kg	1570 lb

Capacity for Liquids

Lube Oil System (refill)	34 L	36 gal
Cooling System	74 L	78.2 gal

Benefits and Features

Engine Design

Proven reliability and durability - 45°C ambient capability* - Robust diesel strength design prolongs life and lowers owning and operating costs - Broad operating speed range

Cat® Hazardous Location Engine

Cat Petroleum Hazardous Location Engines are third-party certified from Caterpillar - Class I Division 2 (NEC 500), - Class I Zone 2 (NEC 505), and - ATEX Directive (94/9/EC) Group II, 3G environments (Zone 2) with Gas Group IIA, Electrical IIC, and Temperature Class T3

Technology

Electrical harness containing point-to-point wiring without splices in any power/signal wires - Electrical harnesses and connectors are overmolded and are routed through urethane tube for protection against impact and vertical flame propagation. - To meet safety requirements, connectors require the use of a special tool to be disconnected and bear the “do not disconnect while energized” warning. - Optional ATEX and NEC certified 25-foot customer harness - ECU is certified as part of the engine to restricted breathing per EN 60079-15. ECU is protected with a stainless steel guard. - Fuel injector connections at valve cover bases are protected with stainless steel guards

Advanced Digital Engine Management

ADEM A4 engine management system integrates speed control, air/fuel ratio control and ignition/detonation controls into a complete engine management system. control system with integrated digital ignition, engine protection and monitoring

Air System

Remote aftercooler (REMAC, air-to-air) and separate circuit (water-to-air) aftercooler options available to match any application requirement. - Water-cooled exhaust manifold and turbo maintain ATEXcompliant skin temperature during operation - Air Inlet shut-off enables emergency shut-off for operator

Improved Serviceability

Front, right, and rear dipsticks - Remote oil and fuel filters - 12V and 24V electronic systems to improve application flexibility

Custom Packaging

Trust a Cat factory custom package to meet your exact petroleum application needs. Cat engines, generators, enclosures, controls, radiators, transmissions — anything your project requires — can be custom designed and matched to create a one-of-a kind solution. 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 reduces packaging time

Testing

Every engine is full-load tested to ensure proper engine performance

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-beforefailure options - S•O•S SM program matches your oil and coolant samples against Caterpillar set standards

Over 80 Years of Engine Manufacturing Experience

Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable products.

Web Site

For all your petroleum power requirements, visit www.catoilandgasinfo.com.

Standard Equipment

Air Inlet System

- Turbocharger, separate circuit (SCAC) or remote (REMAC) aftercooler
- Single, right-side, center-mounted turbo with water-cooled turbine housing
- Air inlet, RH side, rear facing, 101.6 mm (4 in.) connection type

Control System

- Electronic governing, PTO speed control
- Programmable ratings
- Cold mode start strategy
- Automatic altitude compensation
- Fuel cooled ECU
- Power compensation for fuel temperature
- Programmable low and high idle
- Electronic diagnostics and fault logging
- Programmable monitoring system (engine speed, temperature, pressure)
- J1939 broadcast (diagnostic and engine status)
- Certified electrical control system
- Derated engine: automatic ambient temperature compensation

Cooling System

- Thermostats and housing, front-facing outlet — 51 mm (2.01 in) connection
- Jacket water pump — belt-driven, centrifugal
- Water pump — inlet RH front vertical inlet (pointing down) — 63 mm (2.48 in)

Exhaust System

- Single, right-side, center-mounted turbo with water-cooled turbine housing
- Exhaust manifold — water-cooled
- Front turbo exhaust

Flywheels and Flywheel Housing

- Mandatory selection of: SAE No. 1, SAE No. 2, or SAE No. 3 flywheel and housing SAE standard rotation

Fuel System

- HEUI fuel system

- Fuel filter — secondary, LH front (2-micron high performance)
- Fuel transfer pump — left front
- Fuel priming pump — left front

Lube System

- Crankcase breather — top rear
- Crankcase fumes disposal — RH
- Oil cooler — RH
- Oil filter — RH
- Oil pan — front sump, 31 L (33 qt) oil change capacity
- Oil filler — front top valve cover
- Oil level gauge — LH rear
- Engine oil pump — gear-driven
- Oil valve sampling, RH

Power Take-Offs

- Crankshaft drive pulley — 2 grooves, 190 mm (7.5 in) diameter, 22.3 mm (0.88 in) wide

General

- Vibration damper
- Lifting eyes
- Literature
- No paint

Mandatory Options

- Flywheel housing and flywheel
- Primary filter/water separator
- Turbo orientation

Optional Equipment

Air Compressors

- Air compressor governor

Air Inlet System

- Precleaner
- Air inlet elbow
- Charging System
- Cooling System

Emissions Certifications

- IMO certification

Flywheels and Flywheel Housing

- Crankshaft seal

Instrumentation

- Gauges and instrument panels

Lube System

- Oil pans
- Drain and cover
- Remote oil filters
- Lubricating oils

Mounting System

- Structural steel base
- Engine support — front and rear

Power Take-Offs

- Rear enclosed clutches
- Hydraulic pump drives
- Crankshaft pulleys

General

- Tool set

The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ADEM, EUI, S•O•S, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.