



C7 ACERT™ Petroleum Engine

153-205 bkW
(205-275 bhp)
2200 rpm

Water-Cooled Manifold Hazardous Location

CAT® ENGINE SPECIFICATIONS

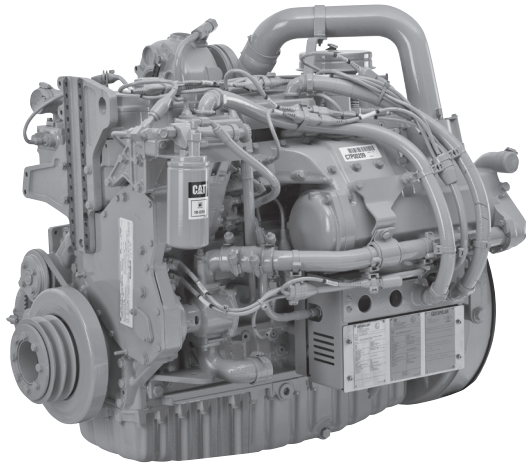


Image is a representation only, and may show optional attachments.

I-6, 4-Stroke-Cycle-Diesel

Emissions	EPA and CARB Non-Road Tier 3, EU Stage IIIA, EPA Marine Tier 2, IMO Tier II
Peak Torque at Speed.....	656.6 lb-ft
Rated Speed	2200 rpm
Bore	110 mm (4.3 in)
Stroke	127 mm (5 in)
Displacement.....	7.2 L (442 cu. in)
Aspiration	Turbocharged-Aftercooled
Governor and Protection.....	Electronic (ADEM™ A4)
Engine Weight, net dry (approx)	712 kg (1570 lb)
Capacity for Liquids	
Lube Oil System (refill)	18 L (4.8 gal)
Oil Change Interval.....	250 hours
Rotation (from flywheel end)	Counterclockwise
Flywheel and Flywheel Housing	SAE 1, 2, or 3
Flywheel Teeth	156 (SAE 1), 134 (SAE 2), 126 (SAE 3)

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

- Separate circuit (water-to-air) aftercooler options available to match any application requirement.
- Water-cooled exhaust manifold and turbo maintain ATEX-compliant skin temperature during operation

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-before-failure options
- S•O•SSM 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.

- 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.

*See TMI for altitude and ambient capability

**ATEX compliant with exceptions — packager responsible to ensure ATEX compliant installation



STANDARD EQUIPMENT

Air Inlet System

Turbocharger, separate circuit (SCAC)
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 ATTACHMENTS

Air Inlet System

Precleaner
Air inlet elbow

Charging Systems**Cooling System**

Water outlet elbow
Coolant conditioner

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

Crankshaft pulleys

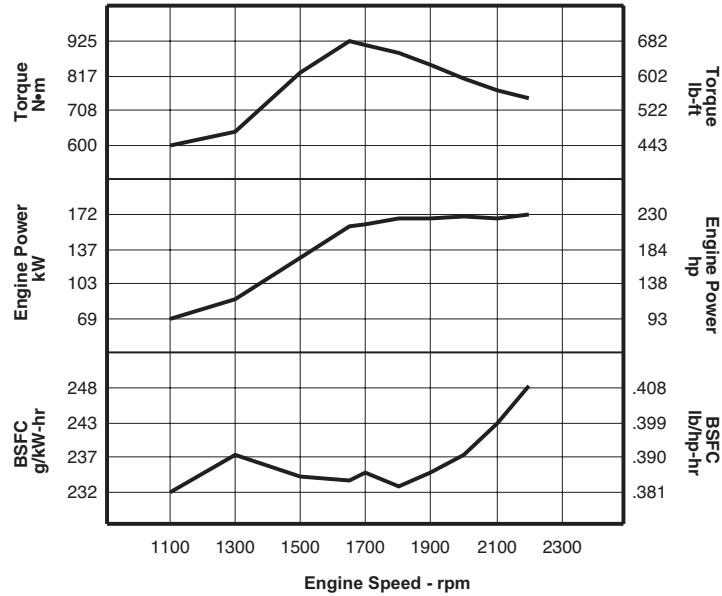
General

Tool set



PERFORMANCE CURVES

Turbocharged-Aftercooled
Well Service Rating — 172 bkW (230 bhp) @ 2200 rpm*
DM9679-01



Heat Rejection Data										
Engine Speed rpm	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From Aft Clr	
	kW	hp	kW	Btu/min	kW	Btu/min	kW	Btu/min	kW	Btu/min
2200	171.5	230.0	138	7848	29	1655	155	8815	45	2559
2100	169.3	227.0	134	7621	28	1564	149	8474	41	2332
2000	169.6	227.4	133	7564	26	1484	145	8246	38	2144
1900	169.1	226.8	133	7564	25	1399	143	8132	35	1962
1800	167.8	225.0	134	7621	26	1490	141	8019	31	1769
1700	162.0	217.2	129	7336	26	1462	138	7848	27	1558
1650	159.8	214.3	127	7222	26	1501	138	7848	25	1427
1500	129.6	173.8	109	6199	23	1319	112	6369	12	671
1300	87.1	116.8	89	5061	14	785	72	4095	3	159
1100	69.1	92.7	82	4663	3	188	50	2843	1	34

*Other engine ratings are available. Please contact dealer for performance data.

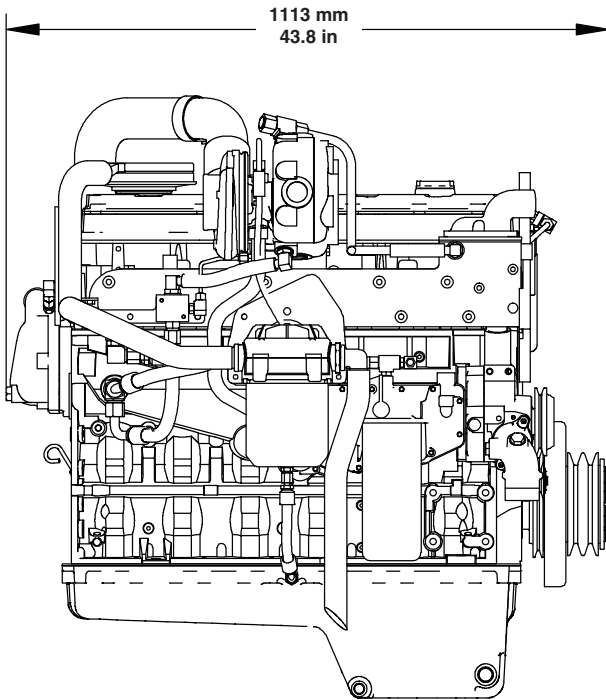


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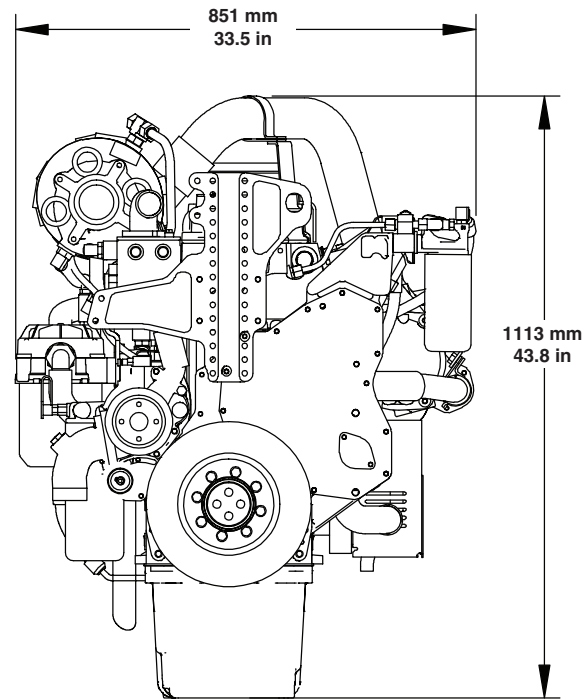
PETROLEUM ENGINE HAZARDOUS LOCATION

153-205 kW (205-275 bhp)

PETROLEUM ENGINE



Right Side View



Front View

Engine Dimensions		
Length	1113 mm	43.8 in
Width	851 mm	33.5 in
Height	1113 mm	43.8 in
Engine Weight (dry)	712 kg	1570 lb

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #347-5717).

RATING DEFINITIONS AND CONDITIONS

Engine Performance is corrected to inlet air standard conditions of 99 kPa (29.31 in Hg) dry barometer and 25°C (77°F) temperature. These values correspond to the standard atmospheric pressure and temperature as shown in SAE J1995.

Performance measured using a standard fuel with fuel gravity of 35 degrees API having a lower heating value of 42,780 kJ/kg (18,390 BTU/lb) when used at 29°C (84.2°F) where the density is 838.9 g/L (7.001 lb/U.S. gal).

The corrected performance values shown for Cat engines will approximate the values obtained when the observed performance data is corrected to SAE J1995, ISO 3046-2, ISO 8665, ISO 2288, ISO 9249, ISO 1585, EEC 80/1269, and DIN 70020 standard reference conditions.

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