



C7.1 ACERT™ Industrial Engine

Tier 4 Interim/Stage IIIB
140-225 bkW/187.7-301.8 bhp @ 2200 rpm

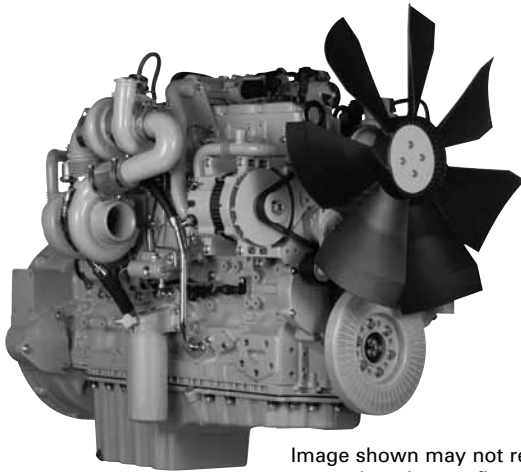


Image shown may not reflect actual engine configuration

CAT® ENGINE SPECIFICATIONS

I-6, 4-Stroke-Cycle Diesel

Bore	105 mm (4.13 in)
Stroke	135 mm (5.3 in)
Displacement	7.01 L (427.7 in ³)
Aspiration	Series Turbocharged-Aftercooled
Compression Ratio	16.5:1
Combustion System	Direct Injection
Rotation (from flywheel end)	Counterclockwise
Capacity for Liquids	
Cooling System	15.2 L (16 U.S. qts)
Lube System (refill) sump	
dependent	13-16 L (13.7-16.9 U.S. qts)
Engine Weight, Net Dry	
(approximate)	715 kg (1576 lbs)

FEATURES

Emissions

Conforms with EPA (U.S.) Tier 4 Interim and EU Stage IIIB emission standards.

Reliable, Quiet, and Durable Power

World-class manufacturing capability and processes coupled with proven core engine designs assure reliability, quiet operation, and many hours of productive life.

High Performance

Series turbocharging with smart wastegate available on all ratings for fast response, high power, and increased torque.

Fuel Efficiency

Fuel consumption optimized to match operating cycles of a wide range of equipment and applications. No additional fluids or additives are required which lowers operating costs.

Fuel & Oil

Tier 4 Interim/Stage IIIB engines require Ultra Low Sulfur Diesel (ULSD) fuel containing a maximum of 15 ppm sulfur, and new oil formulations to support the new technology. Cat® engines are designed to accommodate B20 biofuel. Your Cat dealer can provide more information regarding fuel and oil.

Broad Application Range

Industry leading range of factory configurable ratings and options for agricultural, materials-handling, construction, mining, aircraft ground support, and other industrial applications.

Package Size

Exceptional power density enables standardization across numerous applications. Multiple installation options minimize total package size. Ideal for equipment with narrow engine compartments.

Low-Cost Maintenance

Worldwide service delivers ease of maintenance and simplifies the servicing routine. Hydraulic tappets, multi-vee belts, minimum 5000-hour diesel particulate filter ash service interval and 500-hour oil change intervals enable low-cost maintenance. Many service items have a choice of location on either side of the engine to enable choice of service access. The S•O•SSM program is available from your Cat dealer to determine oil change intervals and provide optimal performance.

Quality

Every Cat engine is manufactured to stringent standards in order to assure customer satisfaction.

World-class Product Support Offered Through Global Cat Dealer Network

- Scheduled maintenance, including S•O•SSM sample
- Customer Support Agreements (CSA)
- Cat Extended Service Coverage (ESC)
- Superior dealer service network
- Extended dealer service network through the Cat Industrial Service Distributor (ISD) program

Web Site: For additional information on all your power requirements, visit www.cat-industrial.com.



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STANDARD ENGINE EQUIPMENT

Air Inlet

Standard air cleaners

Control System

Full electronic control system, all connectors and wiring looms waterproof and designed to withstand harsh off-highway environments, flexible and configurable software features and well supported SAE J1939 CAN bus enables highly integrated machines

Cooling System

Top tank temperature 108°C (226°F) as standard to minimize cooling pack size, 50:50 water glycol mix, detailed guidance on cooling system design and validation available to ensure machine reliability

Exhaust System

Diesel particulate filter and regeneration system supplied, with a range of inlet and outlet options

Flywheels and Flywheel Housing

Wide choice of drivetrain interfaces, including SAE1, SAE2 or SAE3 configurations

Fuel System

Electronic high pressure common rail, ACERT™ Technology, innovative filter design to ensure maximum protection of the engine.

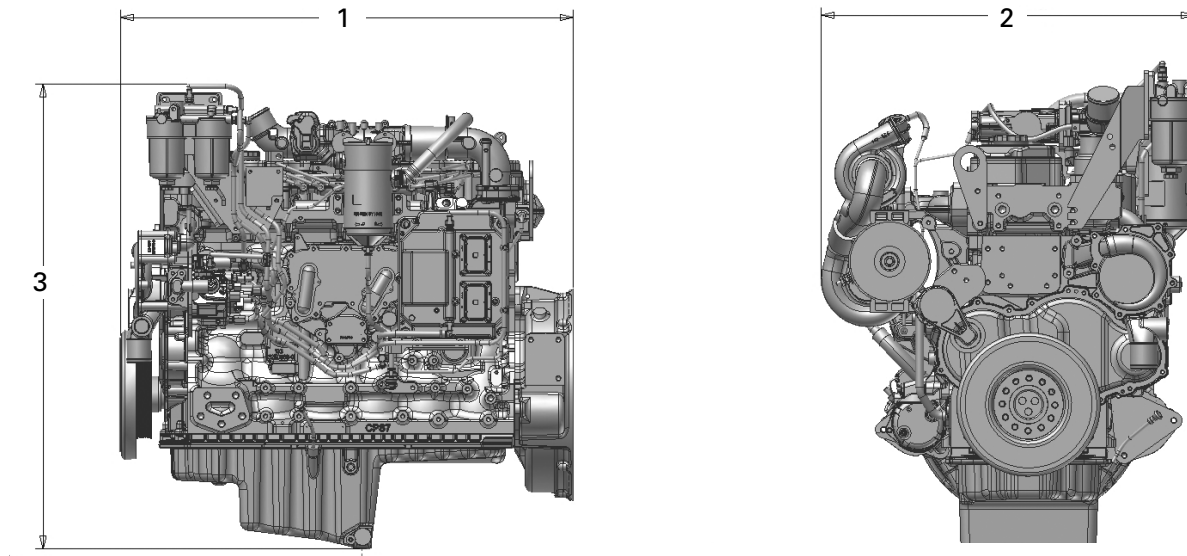
Lube System

Wide choice of sumps for different applications

Power Take Off

SAE A or SAE B flanges on left-hand side. Right-hand side twin PTO also available. Engine power can also be taken from the front of the engine on some applications, factory fitted compressors are also available.

DIMENSIONS



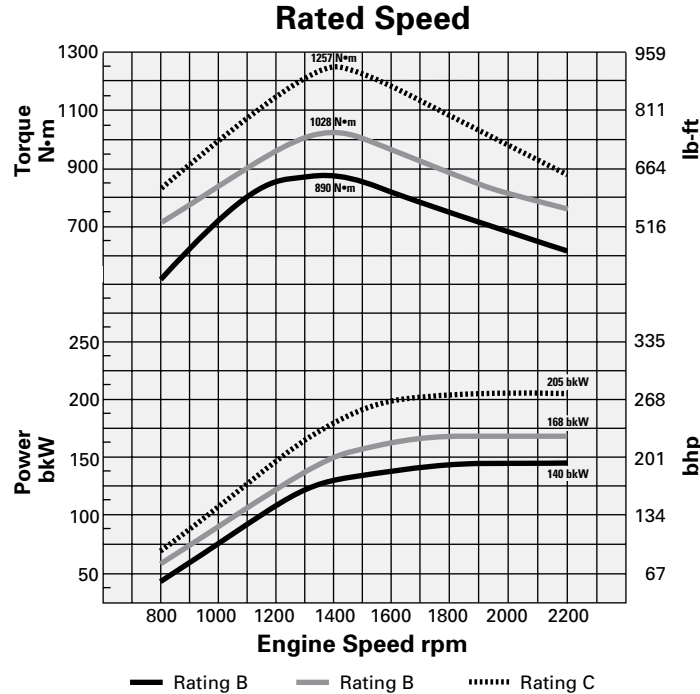
(1) Length — 1063.7 mm (41.9 in) (2) Width — 820.2 mm (32.3 in) (3) Height — 907 mm (35.7 in)

Note: Final dimensions dependent on selected options



PERFORMANCE DATA — PRELIMINARY

Turbocharged-Aftercooled — 2200 rpm



Speed Range

Rating	Speed rpm	Peak Power bkW	Peak Power bhp	Speed rpm	Peak Torque N·m	Peak Torque lb-ft
B*	2200	140.0	187.7	1400	890	656.4
B	2200	151.0	202.5	1400	922	680.0
B	2200	158.5	212.5	1400	973	717.6
B*	2200	168.0	225.3	1400	1028	758.2
B	2200	176.5	236.7	1400	1086	801.0
C	2200	186.5	250.1	1400	1142	842.3
C*	2200	205.0	274.9	1400	1257	927.0

*Curve shown

RATING DEFINITIONS AND CONDITIONS

IND-B for service where power and/or speed are cyclic (time at full load not to exceed 80%).

IND-C (Intermittent) is the horsepower and speed capability of the engine where maximum power and/or speed are cyclic (time at full load not to exceed 50%).

IND-D for service where maximum power is required for periodic overloads.

Additional ratings are available for specific customer requirements. Consult your Cat dealer.

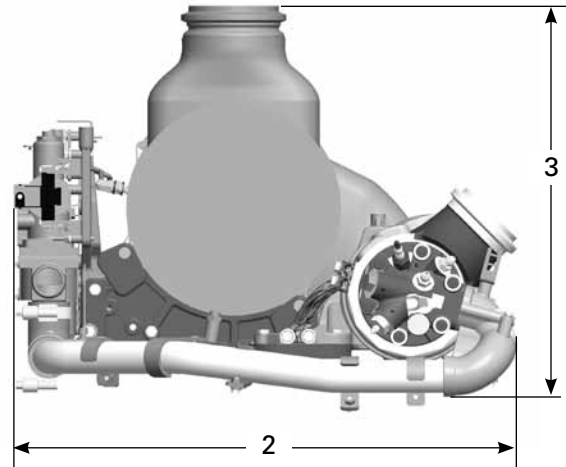
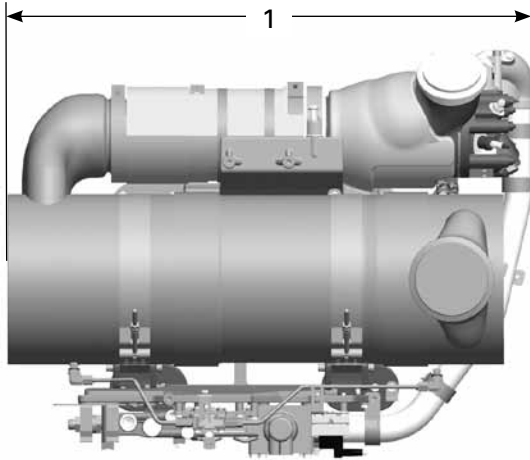
Rating Conditions are based on SAE J1995, inlet air standard conditions of 99 kPa (29.31 in Hg) dry barometer and 25°C (77°F) temperature. Performance measured using a standard fuel with fuel gravity of 35° API having a lower heating value of 42 780 kJ/kg (18,390 btu/lb) when used at 29°C (84.2°F) with a density of 838.9 g/L.



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AFTERTREATMENT CONFIGURATION



Images shown may not reflect actual aftertreatment.

Less than or equal to 172 kW (231 bhp) **287 mm (11.3 in) DIAMETER BASE CONFIGURATION**

Approximate Size and Weight

- (1) Length — 918.7 mm (36.2 in)
 - (2) Width — 714.4 mm (28.1 in)
 - (3) Height — 618.5 mm (24.3 in)
- Weight — 124 kg (273.4 lbs)

CEM Options include:

Basic Aftertreatment Package (DPF/DOC)

Note: Final dimensions dependent on configuration

Greater than 172 kW (231 bhp) **337.8 mm (13.3 in) DIAMETER BASE CONFIGURATION**

Approximate Size and Weight

- (1) Length — 918.7 mm (36.2 in)
 - (2) Width — 714.4 mm (28.1 in)
 - (3) Height — 643.9 mm (25.3 in)
- Weight — 134 kg (295.4 lbs)

Multiple Customizable Configuration Options Available

AFTERTREATMENT FEATURES

Regeneration: Cat Regeneration System maximizes fuel efficiency during regeneration

Flexibility: Flexible regen options maximize uptime

Mounting: Remote installation options provide OEM flexibility for many applications

Service: Minimum 5000-hour diesel particulate filter ash service interval

Available in 12V or 24V systems

STANDARD EMISSIONS CONTROL EQUIPMENT

Cat Regeneration System

CEM: Clean Emissions Module

DOC: Diesel Oxidation Catalyst

DPF: Diesel Particulate Filter

NRS: NOx Reduction System

3" flex pipe connection kit with straight, 45°, and 90° options for flexibility

Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ACERT, 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.