



C7.1 ACERT™ Industrial Engine

Tier 4 Final/Stage IV Technology
116-225 bkW/156-302 bhp @ 2200 rpm

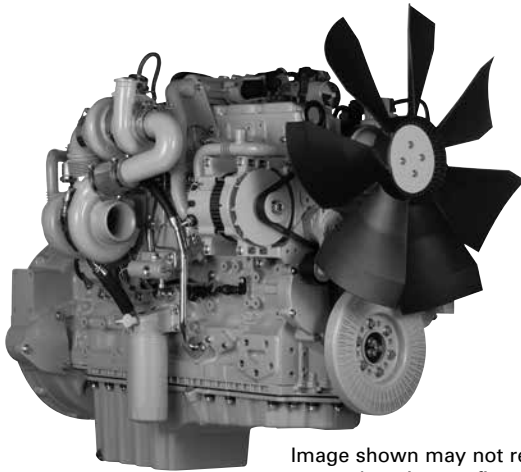


Image shown may not reflect
actual engine configuration

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 in³)
Aspiration	Turbocharged-Aftercooled (TA) or Series Turbocharged-Aftercooled (TTA)
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

Designed to meet U.S. EPA Tier 4 Final, EU Stage IV 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 specific ratings for fast response, high power, and increased torque.

Fuel Efficiency

Fluid consumption optimized to match operating cycles of a wide range of equipment and applications.

Fuel & Oil

Tier 4 Final/Stage IV 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, “no ash service” aftertreatment 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•S sample
- Customer Support Agreements (CSA)
- Caterpillar 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.

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 supplied with a range of inlet and outlet options, no ash service requirement, passive regeneration

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.

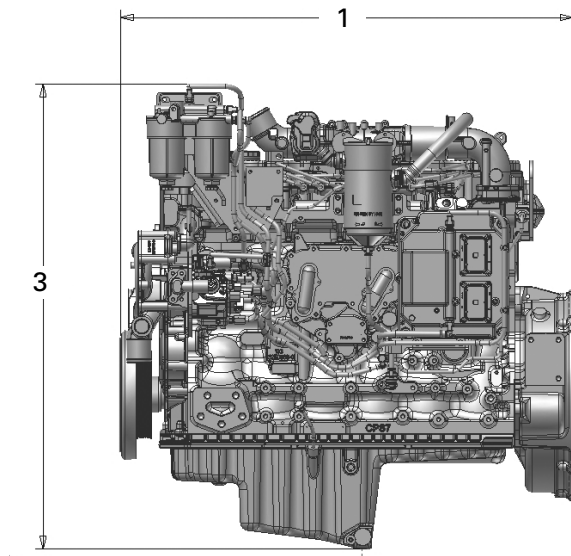
Lube System

Wide choice of sumps for different applications

Power Take Off

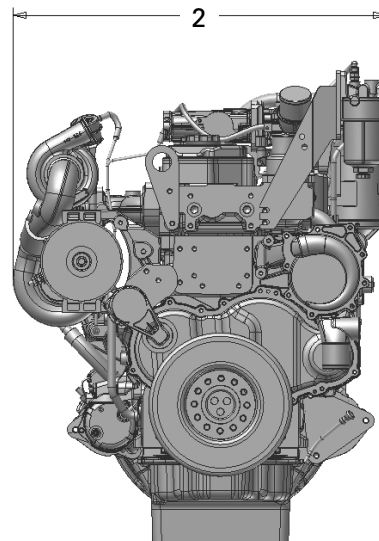
SAE A or SAE B flanges on left-hand side. Right-hand side twin PTO also available. Engine power can also be taken from the front of the engine on some applications, factory fitted compressors are also available.

DIMENSIONS



(1) Length

TA, TTA: 1063.7 mm (41.9 in)



(2) Width

TA: 753 mm (29.6 in)
TTA: 820.2 mm (32.3 in)

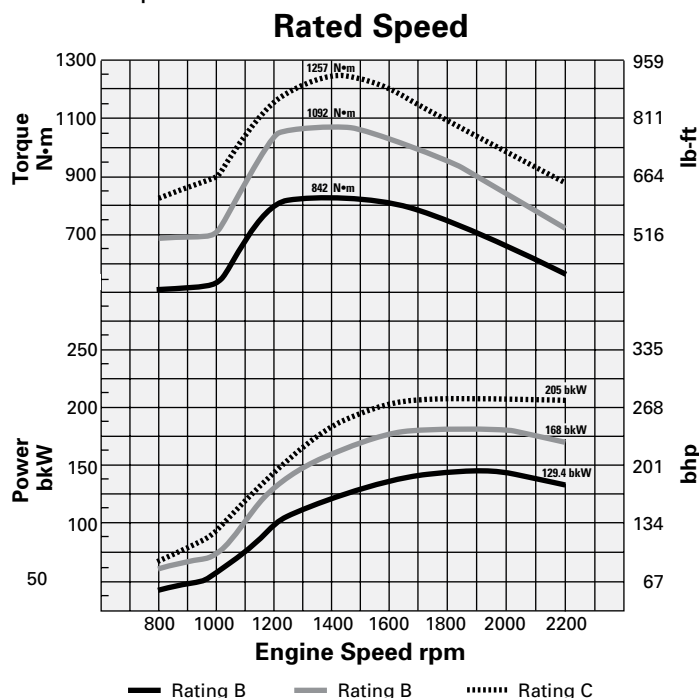
(3) Height

TA, TTA: 907 mm (35.7 in)

Note: Final dimensions dependent on selected options

PERFORMANCE DATA — PRELIMINARY

Turbocharged-Aftercooled — 2200 rpm



Speed Range

Rating	Aspiration	Speed rpm	Peak Power bkW	Peak Power bhp	Speed rpm	Peak Torque N·m	Peak Torque lb·ft
B	TA	2200	116	156	1400	755	557
B*	TA	2200	129	173	1400	842	621
C	TA	2200	151	202	1400	870	642
B	TTA	2200	151	202	1400	983	725
B*	TTA	2200	168	225	1400	1092	805
C	TTA	2200	186	249	1400	1214	895
C*	TTA	2200	205	275	1400	1257	927
C	TTA	2200	225	302	1400	1274	940

*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%).

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

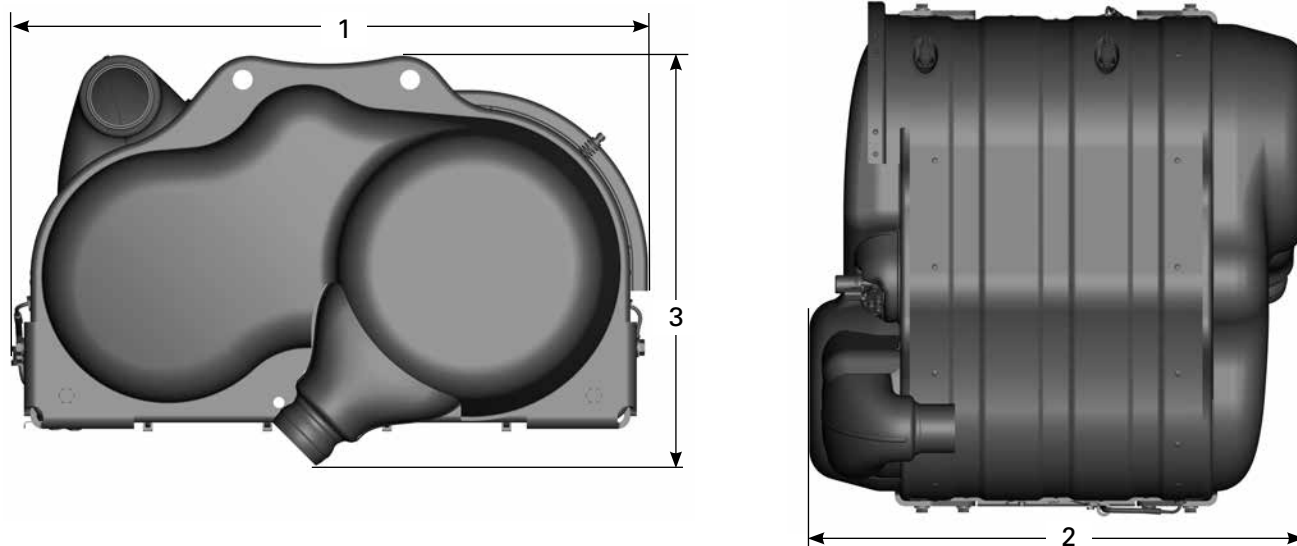
Rating Conditions are based on SAE J1995, inlet air standard conditions of 99 kPa (29.31 in Hg) dry barometer and 25°C (77°F) temperature. Performance measured using a standard fuel with fuel gravity of 35° API having a lower heating value of 42 780 kJ/kg (18,390 btu/lb) when used at 29°C (84.2°F) with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



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AFTERTREATMENT CONFIGURATION



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CONFIGURATION

Approximate Size and Weight

(1) Length — 771 mm (30.4 in)
(2) Width — 793 mm (31.2 in)
(3) Height — 468 mm (18.4 in)
Weight — 90 kg (198 lbs)

CEM Options include:

Basic Aftertreatment Package (DPF/DOC/SCR)

Note: Final dimensions dependent on configuration

Multiple Customizable Configuration Options Available

AFTERTREATMENT FEATURES

Regeneration: Passive regeneration completely transparent to the operator.

Mounting: Extensive range of inlets and outlets, as well as remote and on-engine installations, provide flexibility for many installations.

Service: Service-free DPF for the emissions life of the engine

Available in 12V or 24V systems

STANDARD EMISSIONS CONTROL EQUIPMENT

CEM: Clean Emissions Module

DOC: Diesel Oxidation Catalyst

DPF: Diesel Particulate Filter

NRS: NOx Reduction System

SCR: Selective Catalytic Reduction

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.