Cat® C9.3 ACERT™ Diesel Engine

Industrial

The Cat® C9.3 ACERT™ Industrial Diesel Engine is offered in ratings ranging from 224-298 bkW (300-400 bhp) @ 1800 -2200 rpm. These ratings meet U.S. EPA Tier 4 Final, EU Stage IV emission standards. Industries and applications powered by C9.3 ACERT engines include: Agriculture, Aircraft Ground Support, Bore/Drill Rigs, Chippers/Grinders, Combines/Harvesters, Compactors/Rollers, Compressors, Construction, Cranes, Crushers, Dredgers, Forestry, Forklifts, General Industrial, Hydraulic Power Units, Irrigation Equipment, Loaders/Forwarders, Material Handling, Mining, Mobile Earthmoving Equipment, Mobile Sweepers, Paving Equipment, Pumps, Shovels/Draglines, Specialty Ag Equipment, Sprayers, Surface Hauling Equipment, Trenchers and Underground Mining Equipment.

Specifications

Power Rating		
Minimum Power	224 bkW	300 bhp
Maximum Power	298 bkW	400 bhp
Rated Speed		1800-2200 rpm

Emission Standards	
Emissions	U.S. EPA Tier 4 Final Nonroad, EU Stage IV Nonroad, U.S. EPA Tier 4 Interim Nonroad Equivalent (Not Currently EPA Certified) and EU Stage IIIB Nonroad Equivalent (Non-Current for EU) Emission Standards

General	
Engine Configuration	In-Line 6, 4-Stroke-Cycle Diesel
Bore	115 mm (4.53 in)
Stroke	149 mm (5.87 in)
Displacement	9.3 L (567.5 in³)
Aspiration	Turbocharged-Aftercooled (TA)
Compression Ratio	17.0:1
Combustion System	Direct Injection
Rotation (from flywheel end)	Counterclockwise
Cooling System Capacity	22 L (23.6 qts)
Lube System (refill)	30 L (31.7 qts)

Engine Dimensions (Approximate. Final dimensions dependent on selected options)	
Length	1119-1150 mm (44.0-45.3 in)
Width	827-1025 mm (32.6-40.4 in)
Height	1066-1123 mm (41.9-44.2 in)

Weight - Net Dry (Basic Operating Engine Without Optional Attachments)	885 kg (1950 lb)

Aftertreatment Dimensions (Approximate. Final dimensions dependent on selected options)	
Length	885-925.89 mm (34.8-36.45 in)
Width	714.4-870 mm (28.12-34.4 in)
Height	392.21-570 mm (15.44-22.4 in)
Weight	210-213 kg (463-470 lb)

PETU Dimensions (Tier 4 Final, Stage IV Only)	
Length	854 mm (33.6 in)
Width	287 mm (11.3 in)
Volume Capacity	48.4 L (51.1 qt)
Weight	19.42 kg (42.8 lb)
Height	551 mm (21.7 in)

Benefits and Features

Emissions

Meets U.S. EPA Tier 4 Final, EU Stage IV emission standards. U.S. EPA Tier 4 Interim, EU Stage IIIB configurations are also available using EPA or EU Flex Provisions.

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

Simple and efficient turbocharger with balance valve provides optimal air management and improved fuel efficiency.

Fuel Efficiency

Fuel consumption optimized to match operating cycles of a wide range of equipment and applications while maintaining low operating costs.

Fuel & Oil

Tier 4 Interim or Tier 4 Final, Stage IIIB or 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, material 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. If applicable, minimum 5000 -hour diesel particulate filter (DPF) ash service interval enables low-cost maintenance. Capable of optimal oil change intervals of up to 500-hours, depending on rating, application, operating conditions, and maintenance practices. Engine B10 life up to 10000 hours for Tier 4 Final, Stage IV. 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 SOSSM 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

Tier 4 Interim, Stage IIIB Aftertreatment Features

Regeneration. Cat Regeneration System maximizes fuel efficiency during regeneration. Flexible regeneration options maximize uptime. **Mounting.** Remote installation options provide OEM flexibility for many applications, including horizontal and vertical mounting, with and without muffler.**Service.** Minimum 5000 hour DPF ash service interval.

Tier 4 Final, Stage IV Aftertreatment Features

Regeneration. Cat Regeneration System maximizes fuel efficiency during regeneration. Transparent regeneration maximizes uptime. Aftertreatment life is twice as long as engine rebuild **Mounting.** Remote installation options provide OEM flexibility for many applications, including horizontal and vertical mounting.**Service.** Minimum 5000 hour DPF ash service interval. PETU filter service is 5000 hours. PETU DEF capacity up to 48 liters (51 U.S. quarts)

Standard Equipment

Air Inlet System

- Turbocharged
- Air-to-Air Aftercooled
- Mid-mount turbocharged system with front and rear exhaust configurations (Tier 4 Final, Stage IV)

Control System

- Electronic control system
- Over-foam wiring harness
- Automatic altitude compensation
- Power compensated for fuel temperature
- Configurable software features
- Engine monitoring system SAE J1939 broadcast and control
- Integrated Electronic Control Unit (ECU)
- Remote fan control

Cooling System

- Vertical or RH thermostat outlet
- Centrifugal water pump
- Guidance on cooling system design available through your dealer to ensure equipment reliability

Flywheels and Flywheel Housing

- Dual rear PTO configuration
- Available SAE No. 1 power take off with optional SAE A, SAE B or SAE C power take off drives. Engine power can also be taken from the front of the engine with optional attachments. (Tier 4 Final, Stage IV).

Fuel System

- Electronic high pressure common rail
- Primary fuel filter
- Secondary fuel filters
- Fuel transfer pump
- Electronic fuel priming

Lube System

- Open crankcase ventilation system
- Oil cooler
- Oil filler
- Lube oil filter
- Oil dipstick
- Gear driven oil pump
- Choice of front, rear or center sumps
- Open crankcase ventilation system with fumes disposal (optional OCV filter system) (Tier 4 Final, Stage IV)

Power Take Off (PTO)

- SAE A, SAE B or SAE C power take off (PTO) drives. Engine power can also be taken from the front of the engine on some applications.

General

- Paint: Caterpillar yellow, with optional colors available at request
- Vibration damper
- Lifting eyes

U.S. EPA Tier 4 Interim, EU Stage IIIB Aftertreatment / Clean Emissions Control Equipment

- Clean Emissions Module (CEM), consisting of Diesel Particulate Filter (DPF) and Diesel Oxidation Catalyst (DOC)
- NOx Reduction System (NRS)
- Flex pipe connection kit with 90° rotatable elbows to attach to Cat Regeneration System Inlet
- Available in 12 volt or 24 volt systems

U.S. EPA Tier 4 Final, EU Stage IV Aftertreatment/ Clean Emissions Control Equipment

- Clean Emissions Module (CEM), consisting of Diesel Particulate Filter (DPF) and Diesel Oxidation Catalyst (DOC)
- Aftertreatment Electronic Control Unit (ECU)

- NOx Reduction System (NRS)
- Pump Electronic Control Unit (PETU)
- Selective Catalytic Reduction (SCR)
- Available in 12V or 24V systems

Rating Type: IND-B RATING

Emissions: U.S. EPA Tier 4 Final Nonroad Emission Standards

Image shown may not reflect actual configuration

C9.3 ACERT
DITA
242 bkW (325 bhp) @ 2200 rpm

	Metric	English
General Engine		
Power Rating	242 kW	325 hp
Number of Cylinders	6	
Bore	115 mm	4.5 in
Stroke	149 mm	5.9 in
Displacement	9.3 L	568.0 cu in.
Compression Ratio	17.0 : 1	

RATING DEFINITIONS AND CONDITIONS

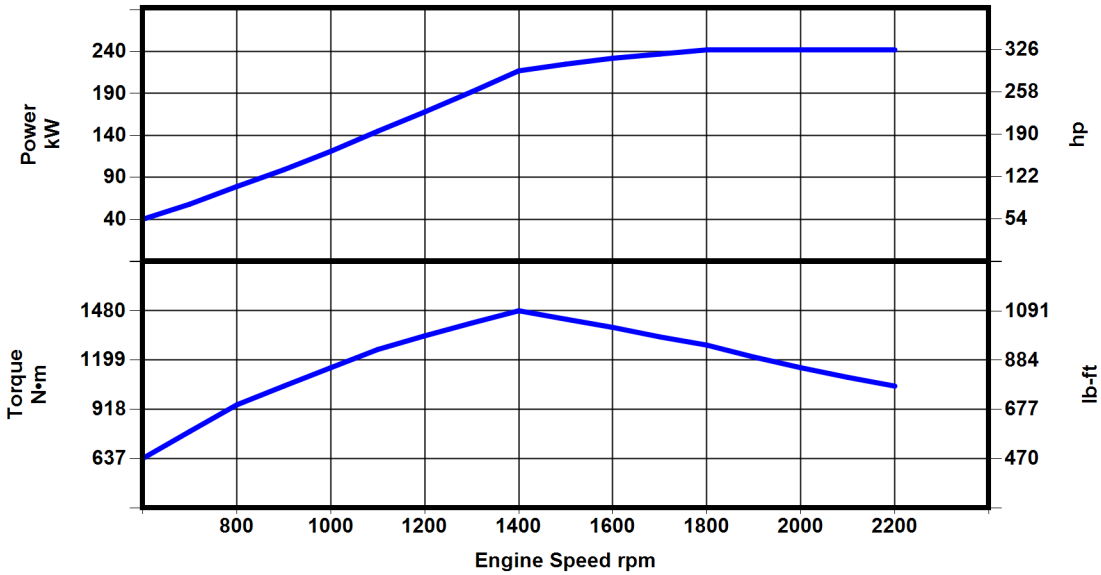
IND-B RATING: For service where power and/or speed are cyclic (time at full load not to exceed 80%).

Diesel Engines — up to 7.1 liter All rating conditions are based on ISO/TR14396, inlet air standard conditions with a total barometric pressure of 100 kPa (29.5 in Hg), with a vapor pressure of 1 kPa (.295 in Hg), and 25°C (77°F). Performance measured using fuel to EPA specifications in 40 CFR Part 1065 and EU specifications in Directive 97/68/EC with a density of 0.845-0.850 kg/L @ 15°C (59°F) and fuel inlet temperature 40°C (104°F).

Diesel Engines — greater than 7.1 liter All 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.

Rating Type: IND-B RATING

Emissions: U.S. EPA Tier 4 Final Nonroad Emission Standards



Engine Speed rpm	Engine Power bkW	Engine Power bhp	Torque N*m	Torque lb-ft
2200	242	325	1050	775
2100	242	325	1100	812
2000	242	325	1155	852
1900	242	325	1216	897
1800	242	325	1284	947
1700	237	318	1331	982
1600	232	311	1385	1021
1500	225	302	1432	1056
1400	217	291	1480	1092
1300	192	257	1410	1040
1200	168	225	1337	986
1100	145	194	1259	928
1000	121	162	1155	852
900	99	133	1050	775
800	79	106	943	696
700	58	78	791	584
600	40	54	637	470

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.