



# C9 ACERT™ Petroleum Engine

243-254 kW  
(325-340 bhp)  
2200 rpm

## Water-Cooled Manifold

### CAT® ENGINE SPECIFICATIONS

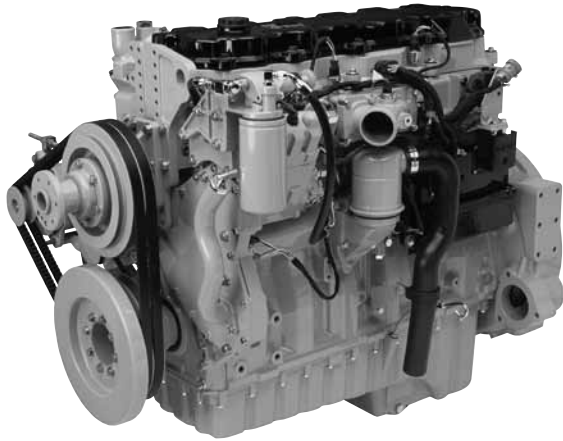


Image is a representation only, and may show optional attachments.

#### 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	812 lbs-ft
Rated Speed	2200 rpm
Bore	112 mm (4.4 in)
Stroke	149 mm (5.9 in)
Displacement	8.8 L (538 cu. in)
Aspiration	Turbocharged-Aftercooled
Governor and Protection	Electronic (ADEM™ A4)
Engine Weight, net dry (approx)	836 kg (1844 lb)
Capacity for Liquids	
Lube Oil System (refill)	30.3 L (8 gal)
Cooling System	13.9 L (3.7 gal)
Oil Change Interval	250 hours
Rotation (from flywheel end)	Counterclockwise
Flywheel and Flywheel Housing	SAE 1 or 2
Flywheel Teeth	113 (SAE 1), 134 (SAE 2)

## FEATURES

### Engine Design

- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range
- PTO drive options provide flexible access to auxiliary power for pumps and other needs

### 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 control system with integrated digital ignition, engine protection and monitoring

### Air System

- Water-cooled exhaust manifold and turbo maintain ATEX-compliant skin temperature during operation
- Air Inlet shut-off enables emergency shut-off for operator

### Improved Serviceability

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

### Optional Equipment

- Air inlet for cold starting capability
- Messenger display for operator friendly diagnostics
- Spark arresting muffler

### Custom Packaging

For any petroleum application, trust Caterpillar to meet your exact needs with a factory custom package. 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.

### Transmissions

Caterpillar has a full line of engine/transmission packages that can be fully integrated with your axle, hydraulics, and operator interface. Cat transmissions deliver continuous operation under full load, smooth shifting at any speed, and maximum up time, with unmatched durability and easy maintenance.

### 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•S<sup>SM</sup> program matches your oil and coolant samples against Caterpillar set standards to determine:

- Internal engine component condition
- Presence of unwanted fluids
- Presence of combustion by-products
- Site-specific oil change interval

### 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](http://www.catoilandgas.cat.com).



## STANDARD EQUIPMENT

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### Air Inlet System

Turbocharger, separate circuit (SCAC) or remote (REMAC) aftercooler  
Single, right-side, center-mounted turbo with water-cooled turbine housing  
Air inlet 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 (hazardous environment only)  
Derated engine: automatic ambient temperature compensation

### Cooling System

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

### Exhaust System

Exhaust manifold — water-cooled  
Single, right-side, center-mounted turbo with water-cooled turbine housing  
Rear facing turbo exhaust 81.8 mm (3.22 in) connection, non V-band clamp

### Flywheels and Flywheel Housing

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

### Fuel System

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

### Lube System

Crankcase breather — LH  
Crankcase fumes disposal — with integrated service indicator, LH  
Oil cooler — RH  
Oil filter — RH  
Oil pan — front sump  
Oil filler — top mounted  
Oil level gauge — LH side  
Oil pump — gear-driven  
Oil valve sampling  
Preservation of turbocharger, flywheel, and crankcase

### Power Take-Offs

Crankshaft drive pulley — 2 grooves, 190 mm (7.5 in) diameter, 22.3 mm (7/8 in) wide

### General

Vibration damper  
Lifting eyes  
Automatic variable timing — electronic  
Literature

### Mandatory Options

Flywheel housing and flywheel  
Throttle position sensor and/or throttle control (Non-hazardous environment only)  
Primary filter/water separator  
Turbo orientation

## OPTIONAL ATTACHMENTS

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### Air Compressors

Air compressors  
Air compressor governor

### Air Inlet System

Air cleaner  
Pre-cleaner  
Air inlet elbow  
Air shutoffs

### Charging Systems

Charging alternators  
Alternator mounting  
Alternator belt tensioner  
Alternator pulleys  
Alternator guards

### Cooling System

Radiators  
Fan drive and pulley — f/u/w radiator packages  
Fans f/u/w radiator packages  
Coolant level sensor  
Fan drive mountings  
Fan adapters  
Fan adapter for blower fans  
Fan pulleys  
Fan height instructions  
Vee belts for customer-supplied radiators  
Suction fans and blower fans  
Water inlet elbows  
Dry charge coolant conditioners

### Emissions Certifications

IMO certification

### Exhaust System

Flexible fitting  
Turbocharger exhaust outlet adapters  
Elbows, flange, pipes, clamp  
Rain caps  
Manifolds  
Mufflers

### Flywheels and Flywheel Housing

Crankshaft seal

### Fuel System

Flexible fuel lines  
Water separator and fuel filters  
Fuel cooler

### Instrumentation

Gauges and instrument panels  
Interconnect harness  
Voltsmeters  
Gauge mounting  
Ammeter

### Lube System

Oil pans  
Drain and cover  
Oil level gauges  
Remote oil filter  
Oil fillers  
Lubricating oil  
Fumes disposal

### Mounting System

Structural steel base  
Engine support — front and rear

### Power Take-Offs

Enclosed clutch  
Clutch supports  
Flywheel stub shaft  
Hydraulic pump drives  
Hydraulic gear pumps

### Starting System

Starting aids  
Electric starting motors — 12V and 24V  
Battery sets — 12V and 24V (dry)  
Battery cable

### General

Tool set



# C9 ACERT™ PETROLEUM ENGINE WATER-COOLED MANIFOLD

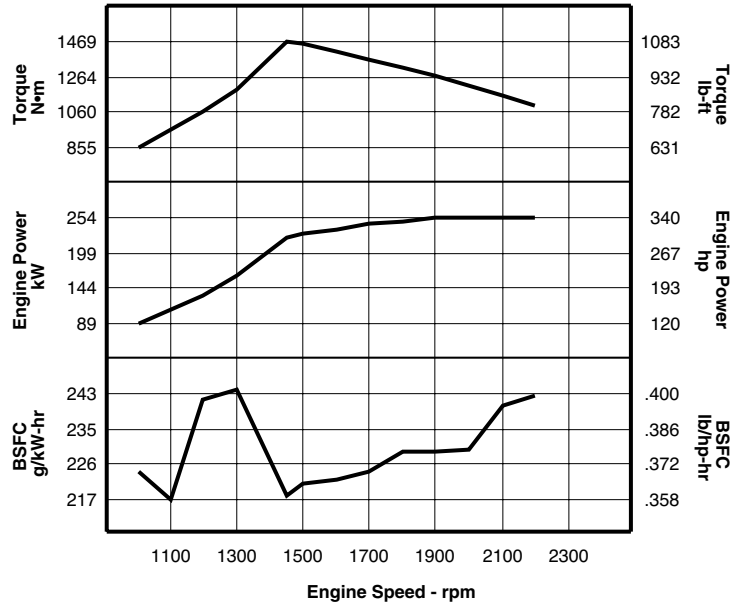
243-254 bkW (325-340 bhp)

## PERFORMANCE CURVES

Turbocharged-Aftercooled

Well Service Rating — 254 bkW (340 bhp) @ 2200 rpm\*

DM9699-02



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	253.5	339.9	211	12000	34	1934	223	12682	56	3185
2100	253.5	339.9	207	11772	40	2275	217	12341	53	3014
2000	253.5	339.9	196	11147	28	1592	209	11886	48	2730
1900	253.5	339.9	194	11033	35	1990	205	11658	46	2616
1800	249.1	334.0	191	10862	38	2161	200	11374	43	2445
1700	243.1	326.0	183	10407	29	1649	194	11033	40	2275
1600	236.4	317.0	177	10066	29	1649	185	10521	37	2104
1500	228.2	306.0	173	9838	27	1535	177	10066	33	1877
1450	223.0	299.0	169	9611	22	1251	172	9782	31	1763
1300	162.6	218.1	143	8132	43	2445	136	7734	17	967
1200	132.7	178.0	119	6768	31	1763	112	6369	11	626
1100	110.4	148.0	93	5289	27	1535	69	3924	3	171
1000	89.5	120.0	81	4606	27	1535	55	3128	2	114

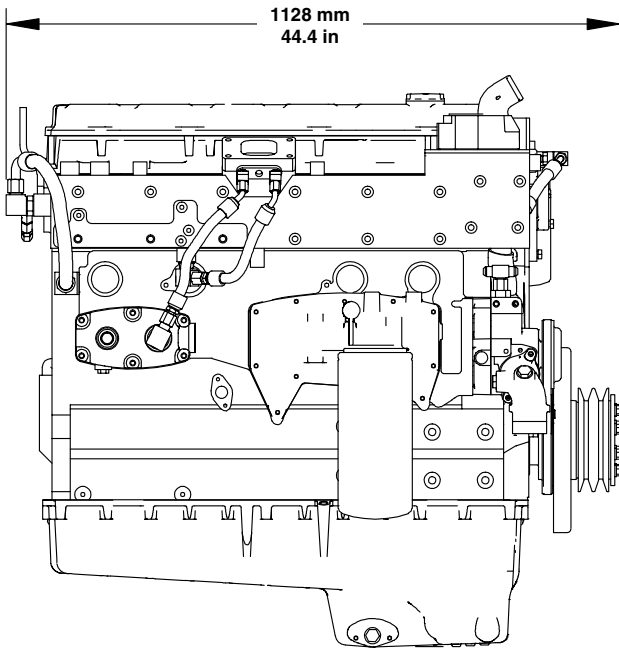
\*Other engine ratings are available. Please contact dealer for performance data.



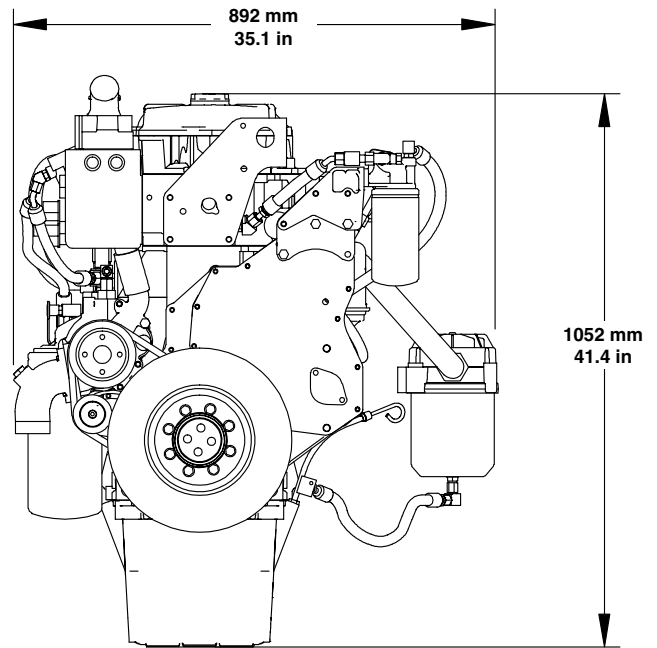
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## PETROLEUM ENGINE



**Right Side View**



**Front View**

Engine Dimensions		
<b>Length</b>	1128 mm	44.4 in
<b>Width</b>	892 mm	35.1 in
<b>Height</b>	1052 mm	41.4 in
<b>Engine Weight (dry)</b>	836 kg	1844 lb

**Note:** Do not use for installation design. See general dimension drawings for detail (Drawing #313-9781).

## 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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