C7 ACERT™ Petroleum Engine

168-223 bkW (225-300 bhp) 2200 rpm

Dry Manifold

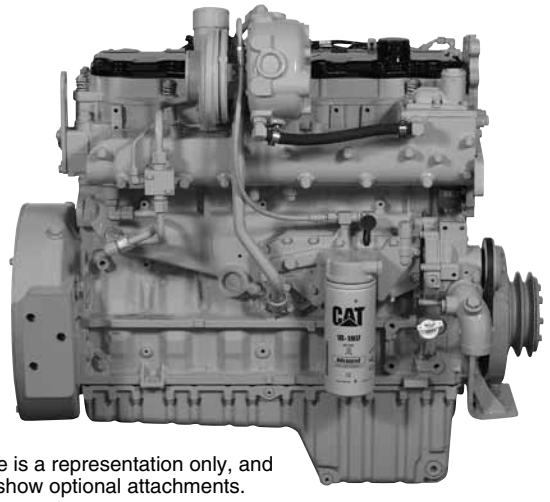


Image is a representation only, and may show optional attachments.

CAT® ENGINE SPECIFICATIONS

I-6, 4-Stroke-Cycle-Diesel

Emissions . . . . . EPA and CARB Non-Road Tier 3, EU Stage IIIA, IMO Tier II
Peak Torque at Speed. . . . . 716.2 lbs-ft
Rated Speed . . . . . 2200 rpm
Bore . . . . . 110 mm (4.3 in)
Stroke . . . . . 127 mm (5 in)
Displacement . . . . . 7.2 L (441.8 cu. in)
Aspiration . . . . . Turbocharged-Aftercooled
Governor and Protection . . . . . Electronic (ADEM™ 3)
Engine Weight, net dry (approx) . . . . . 629 kg (1386 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
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range
- High power density — lightweight engine for weight sensitive applications
- Broad power range provides superior pumping performance

Advanced Digital Engine Management

ADEM A3 control system providing integrated ignition, speed governing, protection, and controls, including detonation-sensitive variable ignition timing. ADEM A3 has improved: user interface, display system, shutdown controls, and system diagnostics.

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.

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℠ 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.

STANDARD EQUIPMENT

Air Inlet System
Turbocharger, air to air aftercooled
Air inlet, LH side facing front 79.0 mm (3.11 in) connection

Control System
Electronic governing, PTO speed control
Programmable ratings
Cold mode start strategy
Automatic altitude compensation
Power compensation for fuel temperature
Programmable low and high idle and TEL
Electronic diagnostics and fault logging
Programmable monitoring system (engine speeds, temperature, pressure)
J1939 broadcast (diagnostic and engine status)
Automatic variable timing, electronic
All engines shipped at max rated rpm

Cooling System
Thermostats and housing, vertical outlet
Jacket water pump — belt-driven, centrifugal
Water pump, inlet RH front vertical inlet (pointing down)

Exhaust System
Exhaust manifold — dry
Front turbo exhaust

Flywheels and Flywheel Housing
See Mandatory Options attachments

Fuel System
Hydraulic Electronic Unit injection (HEUI)
Fuel filter — secondary, LH front (2-micron high performance)
Fuel transfer pump — LH front
Fuel priming pump — LH front

General
Vibration damper
Paint — Cat yellow
Lifting eyes
Electronic installation kit (connectors, pins, sockets)

Lube System
Crankcase breather, LH side
Oil cooler, RH
Oil filler, front top valve cover
Oil filter and sampling valve, RH
Oil pan, front sump, 31 L (33 qt) oil change capacity
Oil dipstick, LH rear.
Engine oil pump (gear-driven)
Engine shipped without oil

Power Take-Offs
Crankshaft drive pulley — 2 grooves, 190 mm (7.5 in) diameter, 22.3 mm (0.88 in) wide

OPTIONAL EQUIPMENT

Air Compressor
Air compressors
Air compressor governor

Air Inlet System
Air cleaners
Precleaner
Air inlet elbow
Air shutoffs

Charging Systems
Charging alternators
Alternator mountings
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 Certification
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

General
Tool set

Instrumentation
Gauges and instrument panels
Interconnect harnesses
Voltmeters
Gauge mounting
Ammeter

Lube System
Oil pan
Drain and cover
Oil level gauges
Remote oil filter
Oil fillers
Lubricating oil
Fumes disposal

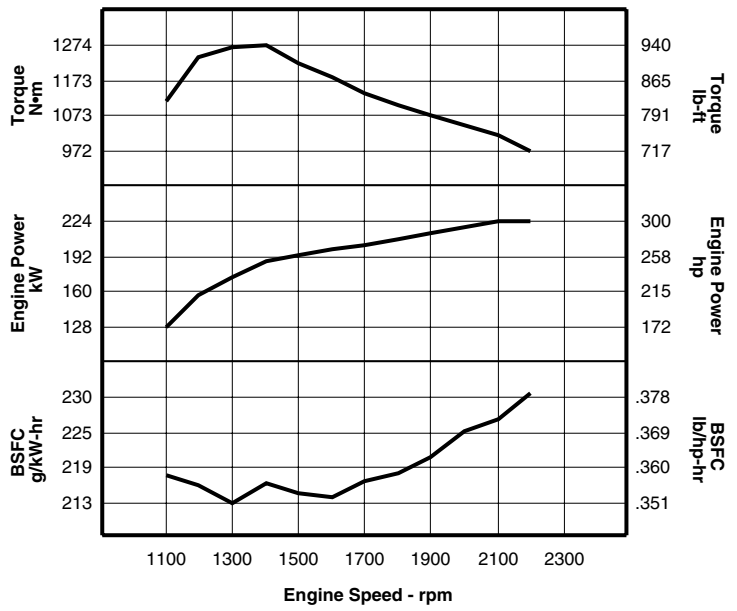
Mounting System
Structural steel base
Front engine support
Rear engine supports

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

PERFORMANCE CURVES

Turbocharged-Aftercooled
D Rating — 168-223 bkW (225-300 bhp) @ 2200 rpm*
DM9223-02



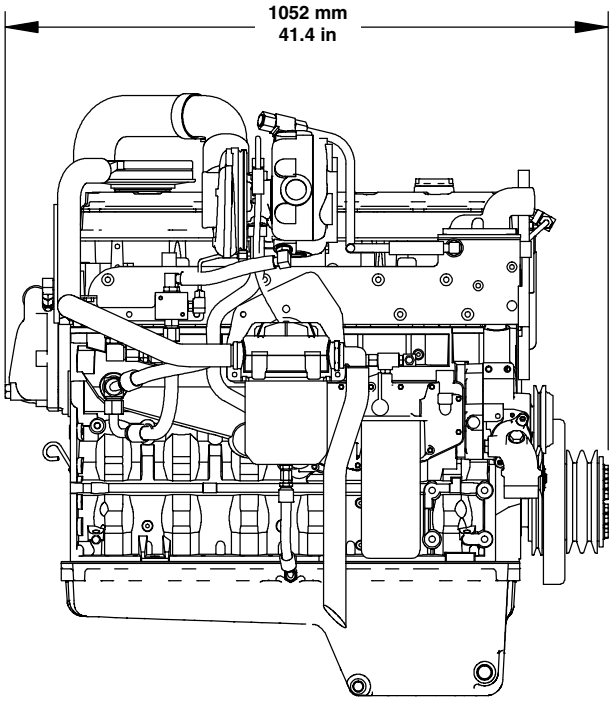
Heat Rejection Data										
Engine Speed	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From Aft Clr	
rpm	kW	hp	kW	Btu/min	kW	Btu/min	kW	Btu/min	kW	Btu/min
2200	224.0	300.4	86	4862	55	3099	237	13478	54.2	3082.3
2100	224.0	300.4	86	4902	50	2821	232	13194	52.2	2968.6
2000	218.5	293.0	83	4715	48	2701	222	12625	49.4	2809.4
1900	213.3	286.0	79	4493	46	2610	211	12000	46.8	2661.5
1800	208.0	278.9	76	4328	46	2627	203	11545	44.6	2536.4
1700	202.8	272.0	75	4260	47	2644	194	11033	42.0	2388.5
1600	198.4	266.1	73	4157	44	2519	187	10635	39.4	2240.7
1500	192.4	258.0	72	4112	44	2519	184	10464	37.3	2121.2
1400	186.8	250.5	72	4078	46	2605	177	10066	35.3	2007.5
1300	173.0	232.0	66	3770	47	2650	160	9099	28.9	1643.5
1200	155.8	208.9	59	3372	44	2519	139	7905	21.4	1217.0
1100	128.2	171.9	51	2889	42	2360	109	6199	13.6	773.4

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

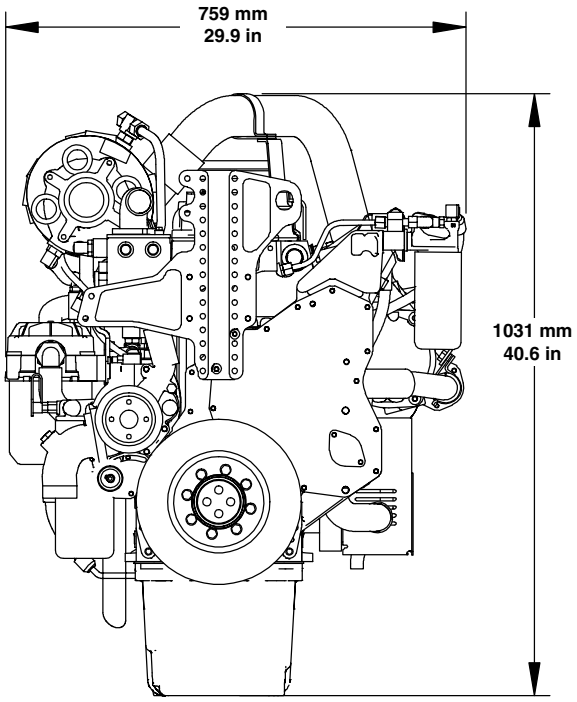
C7 ACERT™ PETROLEUM ENGINE DRY MANIFOLD

168-223 bkW (225-300 bhp)

PETROLEUM ENGINE



Right Side View



Front View

Engine Dimensions		
Length	1052 mm	41.4 in
Width	759 mm	29.9 in
Height	1031 mm	40.6 in
Engine Weight (dry)	629 kg	1386 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.

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

Performance Number: DM9223-02
LEHW0043-01 (11-10)