



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 Mobile Tier 3,
EU Stage IIIA

Peak Torque at Speed 1300.5 lbs-ft

Bore 130 mm (5.1 in.)

Stroke 157 mm (6.2 in.)

Displacement 12.5 L (760 cu. in.)

Aspiration Turbocharged-Aftercooled

Governor and Protection Electronic (ADEM™ A3)

Engine Weight, net dry (approx) 896 kg (1976 lb)

Capacity for Liquids

Lube Oil System (refill) 34 L (9 gal)

Cooling System 14.4 L (3.8 gal)

Oil Change Interval 250 hours

Rotation (from flywheel end) Counterclockwise

Flywheel and Flywheel Housing SAE No. 1

Flywheel Teeth 113

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
- PTO drive options provide flexible access to auxiliary power for pumps and other needs

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.

Optional Attachments

- **Engine-Mounted Transmission Oil Cooler** — integration with engine cooling system allows ease of installation and a tighter overall engine package
- **Engine Brakes** — braking capabilities for mobile applications

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•SSM 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, mid-mounted
Air inlet elbow 90°, 104.5 mm (4.11" OD) hose 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
Engine monitoring system — speed, temperature, pressure
J1939 Broadcast — diagnostic and engine status

Cooling System

Thermostats and housing
Jacket water pump — gear-driven
Front water pump inlet

Exhaust System

Exhaust manifold — dry
Front turbo exhaust

Flywheels and Flywheel Housings

See Mandatory Options

Fuel System

Electronic unit injector
Fuel filter — secondary, mid-mount, (LH 2 micron high performance)
Fuel transfer pump — front

Fuel priming pump — LH mid-mount

Fuel fitting — fuel return connection: straight No. 8, 5/8-18

Lube System

Crankcase breather
Oil cooler
Oil filter — RH
Oil pan — front sump, 40 L capacity
Oil filler — LH front
Oil dipstick — LH front
Oil pump
Oil valve sampling — RH rear engine side

Power Take-Offs

Crankshaft pulley and damper — 250 mm (9.84 in), 2 grooves
22.3 mm (.87 in) width
Hydraulic pump drive — SAE A, 11-tooth
1.41:1 drive ratio — counterclockwise rotation (45 lb-ft capacity)

General

Vibration damper
Paint — Cat yellow
Lifting eyes
Automatic variable timing, electronic
Electronic installation kit (connectors, pins, sockets)
Literature

Mandatory Options

Flywheel housing or rear PTO
Throttle position sensor
Primary filter/water separator

OPTIONAL ATTACHMENTS**Air Compressor**

Air compressors
Air chambers
Air compressor governors

Air Inlet System

Air cleaners
Precleaners
Air lines
Air inlet gasket

Belt-Driven Accessories

Refrigerant compressor and mounting

Charging System

Charging alternators
Alternator mountings
Alternator guard
Alternator accessories

Control System

Connection

Cooling System

Radiator — installed
Fan drive f/u/w Caterpillar installed radiator
Fan drive pulleys f/u/w customer-supplied radiators
Coolant conditioner
Water lines — pump inlet
Fan drive mountings
Fan height instructions
Fan adapters for suction fans and blower fans
Suction fans and blower fans
Coolant level sensor
Aftercooler lines

Exhaust System

Muffler
Flexible fitting
Elbows, flange, pipe, clamp
Straight exhaust adapter

Fuel System

Fuel lines for fuel filter
Fuel cooler
Fuel fitting — fuel return connection
Flexible fuel lines

Instrumentation

Gauges and instrument panels
Voltmeters
Gauge mounting
Ammeter

Lube System

Oil pan
Oil pan drain
Oil level gauges
Oil filter — bypass and remote
Lubricating oil
Oil filler
Fumes disposal

Mounting System

Front and rear engine supports
Structural steel base

Power Take-Offs

Crankshaft pulleys
Crankshaft pulley — stack-on
Output flange
Flywheel stub shaft
Front stub shaft
Hydraulic pump drive
Hydraulic pumps — front and rear
Enclosed clutch
Clutch support

Protection System

Air shutoff
Air shutoff switch

Starting System

Electric starting motors — 12 Volt, 24 Volt
Starting aids
Battery sets — 24 Volt, dry
Battery cable
Battery rack

Transmission Arrangement

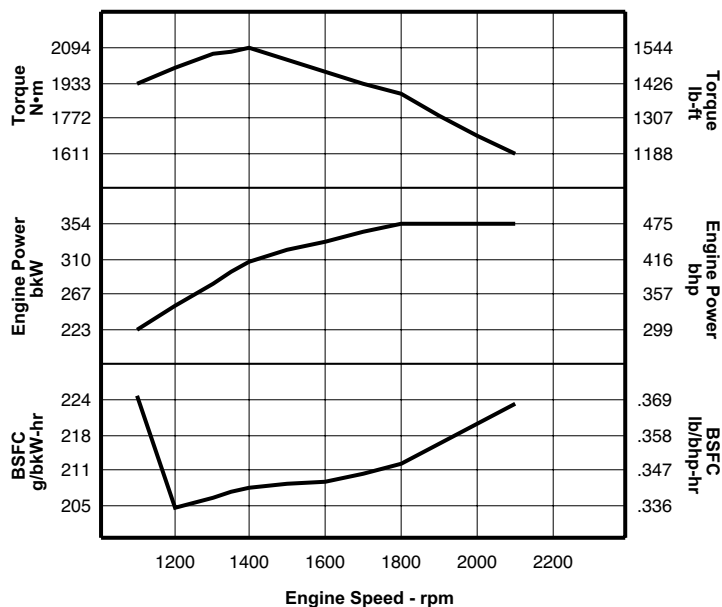
Transmission cooler

PERFORMANCE CURVES

Turbocharged-Aftercooled

D Rating — 354 kW (475 bhp) @ 2100 rpm*

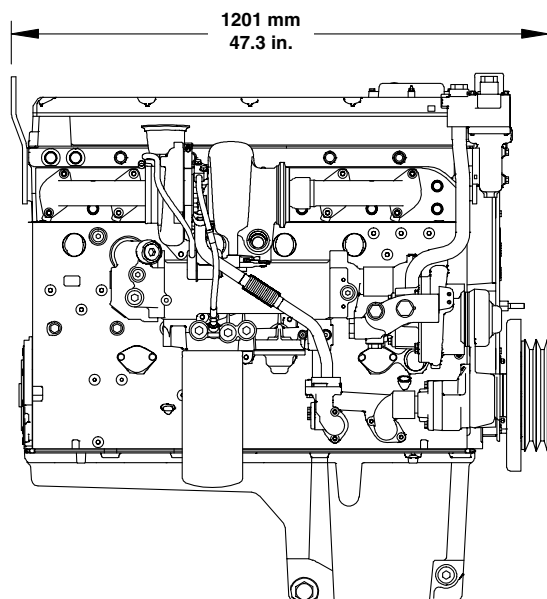
DM7688-01



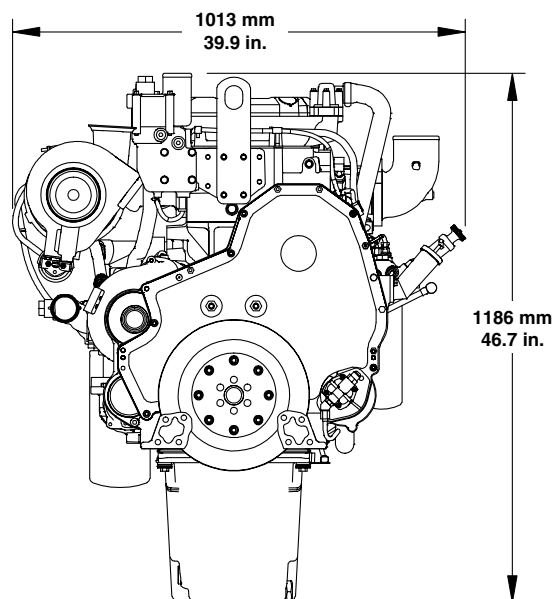
Heat Rejection Data										
Engine Speed rpm	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From Aft Clr	
	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
2100	354.3	475.1	136	7734	73	4169	367	20871	72.0	4094.6
2000	354.3	475.1	133	7564	68	3867	362	20587	69.4	3946.8
1900	354.3	475.1	131	7450	66	3770	354	20132	66.4	3776.2
1800	354.3	475.1	132	7507	66	3753	341	19393	63.5	3611.2
1700	344.2	461.6	125	7109	65	3708	323	18369	62.5	3554.4
1600	332.9	446.4	121	6881	61	3480	311	17687	59.3	3372.4
1500	320.6	429.9	118	6711	61	3463	295	16777	56.8	3230.2
1400	307.1	411.8	112	6369	62	3537	277	15753	54.5	3099.4
1350	293.8	394.0	107	6085	60	3395	264	15014	50.7	2883.3
1300	280.7	376.4	102	5801	57	3264	251	14274	46.3	2633.1
1200	251.1	336.7	94	5346	54	3054	222	12625	35.3	2007.5
1100	222.7	298.6	86	4891	54	3054	190	10805	25.0	1421.7

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

PETROLEUM ENGINE



Right Side View



Front View

Engine Dimensions		
Length	1201 mm	47.3 in
Width	1013 mm	39.9 in
Height	1186 mm	46.7 in
Engine Weight (dry)	896 kg	1976 lb

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #317-6068).

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.

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