

### CAT® ENGINE SPECIFICATIONS

#### V-8, 4-Stroke-Cycle-Diesel

Emissions . . . . .	Non-Current 2000 EPA and CARB Tier 1 Non-Road Emissions Certified
Peak Torque at Speed . . . . .	3939 lb-ft
Bore . . . . .	170 mm (6.7 in.)
Stroke . . . . .	190 mm (7.5 in.)
Displacement . . . . .	34.5 L (2105 cu. in.)
Aspiration . . . . .	Turbocharged-Aftercooled
Governor and Protection . . . . .	Electronic ADEM™ A3
Engine Weight, net dry (approx) . . . . .	4309 kg (9500 lb.)
Capacity for Liquids	
Lube Oil System (refill) . . . . .	18 L (4.8 U.S. gal.)
Cooling System (engine only) . . . . .	103 L (27 U.S. gal.)
Cooling System (radiator) . . . . .	206 L (54 U.S. gal.)
Oil Change Interval . . . . .	500 hours
Rotation (from flywheel end) . . . . .	Counterclockwise
Flywheel and Flywheel Housing . . . . .	SAE No. 00
Flywheel Teeth . . . . .	151

### FEATURES

#### Engine Design

- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Market-leading power density
- Designed to perform in oilfield conditions, including high ambient high altitude applications
- Long overhaul life proven in oilfield applications
- Core engine components designed for reconditioning and reuse at overhaul
- Broad torque curve optimized for petroleum mechanical drive application

#### Improved Serviceability

Large inspection openings allow convenient access to core engine internals

#### Control System

- ADEM A3
- E-stop pushbutton on instrument panel
- Air shutoff and explosion relief valves
- Configurable alarm and shutdown features
- Extra alarm switches available for customer-supplied panel
- Instrument panel — LH analog display of key package operation parameters

#### Reduction of Owning and Operating Costs

- Long filter change intervals, aligned with service intervals
- Excellent fuel economy — direct injection electronic unit injectors precisely meter fuel
- Torsional vibration analysis available from factory to maximize component life

#### 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<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**

Aftercooler core — corrosion resistant  
Air cleaner — regular duty with soot filter  
Service indicators

**Control System**

Caterpillar ADEM A3 ECU — LH  
Includes adjustable speed droop capability  
Pneumatic speed control, 10-100 psi

**Cooling System**

Radiator cooled land based  
Outlet controlled thermostat and housing  
Jacket water pump — gear-driven  
Dual outlet  
Aftercooler fresh water cooling pump (SCAC) — gear-driven, centrifugal

**Exhaust System**

Exhaust flexible fitting, adapter, flange

**Flywheels and Flywheel Housings**

Flywheel — SAE No. 00 and housing

**Fuel System**

Fuel filter — LH, priming pump — LH  
Fuel transfer pump  
Flexible fuel lines  
Electronically controlled unit injectors

**Instrumentation**

Electronic instrument panel — LH  
Analog gauges with digital display data for: engine oil pressure gauge, engine water temperature gauge, fuel pressure gauge, system DC voltage gauge, air inlet

restriction gauge, exhaust temperature gauge, fuel filter differential pressure gauge, oil filter differential pressure gauge, service meter, tachometer, instantaneous fuel consumption, total fuel consumed, engine start-stop (off, auto start, manual start, cooldown timer)

**Lube System**

Crankcase breather  
Oil cooler  
Oil filter, LH  
Oil pan drain valve, 2" NPT female connection

**Mounting System**

Rails — mounting, floor type, 254 mm (10 in)

**Power Take-Offs**

Accessory drive  
Lower LH front (available for PTO usage)  
Front housing — two-sided

**Protection System**

ADEM A3 ECU monitoring system provides engine protection strategies to protect against adverse operating conditions. Selected parameters are customer programmable.

**Starting System**

Air starting motor — RH, 620 to 1034 kPa (90 to 150 psi), LH control  
Air silencer

**General**

Paint — Cat yellow  
Vibration damper and guard  
Lifting eyes

**OPTIONAL EQUIPMENT**

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**Air Compressor****Air Inlet System**

Air cleaners  
Remote air inlet adapters

**Charging Systems**

Battery chargers and charging alternators

**Control System**

Load sharing modules  
Local speed throttle control  
Governor conversion  
2301A load sharing governors and actuator  
Throttle position sensors

**Cooling Systems**

High gloss black folded core radiators and conventional core radiators  
Belt guard  
Blower fan  
Fan drive and fan pulley  
Radiator cover  
Water level switch gauge  
Coolant level sensors  
Air separator

**Exhaust System**

Flexible fitting  
Elbows  
Flange and exhaust expanders  
Mufflers

**Flywheel and Flywheel Housing****Fuel System**

Fuel priming pumps, flexible fuel lines  
Fuel filter  
Fuel cooler, fuel level switch

**Instrumentation**

Remote panel display, remote cylinder temperature display  
Gauges and instrument panels

**Lube System**

Fumes disposal  
Oil filters  
Prelube pumps, sump pumps

**Mounting System**

Power Take-Offs  
Flexible couplings, coupling hubs  
Front accessory drives  
Auxiliary drive shafts and pulleys  
Front stub shaft and flywheel stub shaft  
Pulleys

**Protection System**

Shutoffs  
Switches and contactors  
Explosion relief valves  
Oil pressure monitor

**Starting System**

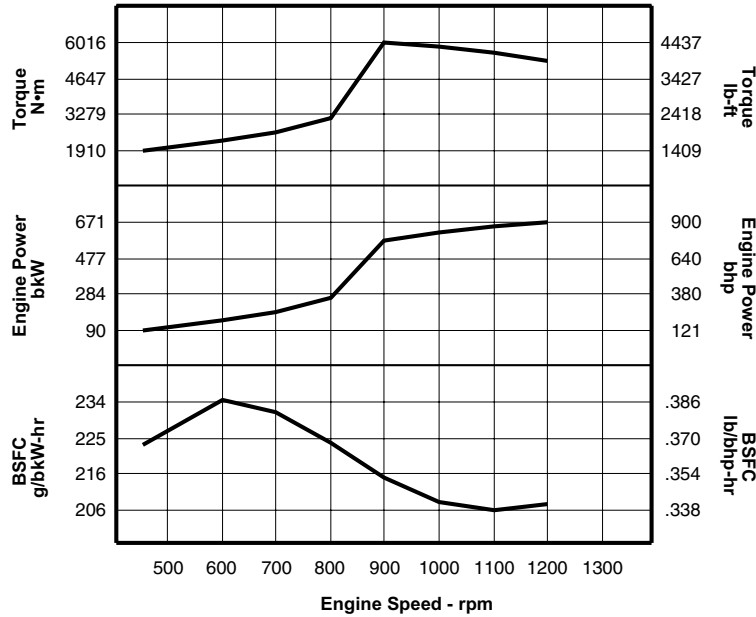
Starting motors — air, gas, electric  
Air pressure regulators, controls and silencer  
Air controls — manual, electric  
Redundant start systems  
Start switch  
Starting aids (JW heater and ether injection)  
Battery sets — 24 volts with rack

**General**

Special paint  
Flywheel guard  
Cat data link wire  
Tool set

### PERFORMANCE CURVES\*

Turbocharged-Aftercooled  
 P/D MECH Rating — 671 bkW (900 bhp) @ 1200 rpm  
 DM4680-05

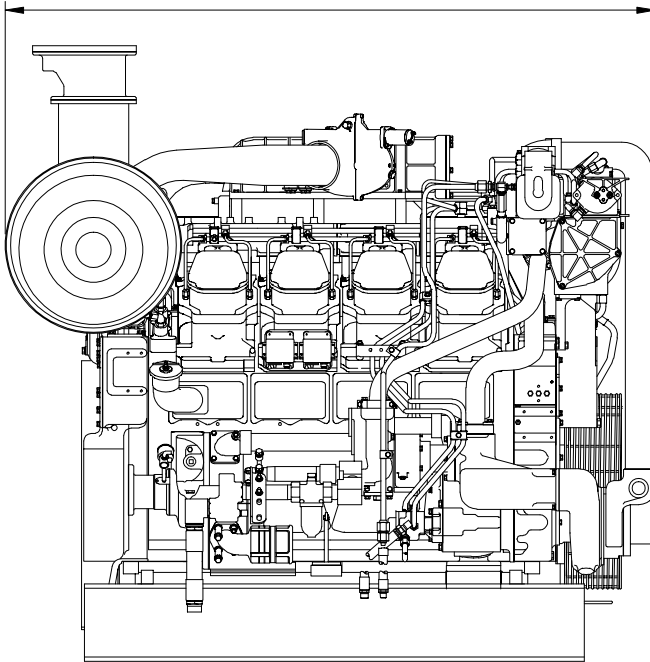


Heat Rejection Data										
Engine Speed rpm	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From Aft Clr	
	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
1200	671.0	899.8	263	14957	94	5346	580	32985	157	8929
1100	651.9	874.2	221	12568	98	5573	594	33781	140	7962
1000	617.4	827.9	250	14217	106	6028	534	30369	113	6426
900	567.0	760.4	256	14559	120	6824	485	27582	82	4663
800	262.0	351.3	119	6768	113	6426	256	14559	3	171
700	190.0	254.8	76	4322	106	6028	180	10237	N/A	N/A
600	142.0	190.4	72	4095	96	5460	135	7677	N/A	N/A
450	90.0	120.7	24	1365	71	4038	74	4208	N/A	N/A

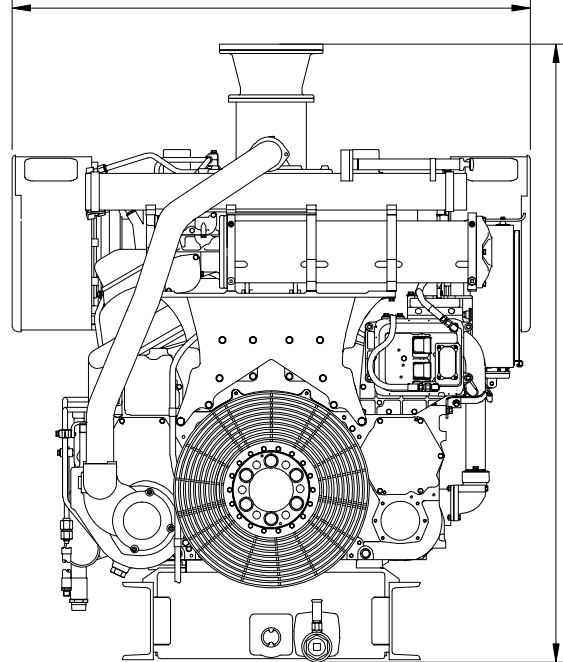
Approximate Power (bhp) as function of Altitude and Inlet Manifold Temperature for DM4680-05									
Inlet Manifold Temp. (°F)	Altitude (feet)								
	10,499	9843	8202	6562	4921	3281	1640	984	0
50	1041	1067	1137	1180	1180	1180	1180	1180	1180
68	1006	1031	1098	1169	1180	1180	1180	1180	1180
86	972	998	1062	1130	1180	1180	1180	1180	1180
104	941	966	1029	1094	1164	1180	1180	1180	1180
122	912	936	996	1061	1128	1180	1180	1180	1180
Normal	1043	1065	1121	1180	1180	1180	1180	1180	1180

\*Other ratings and performance data available

### LAND MECHANICAL ENGINE



**Right Side View**



**Front View**

Engine Dimensions		
<b>Length</b>	2136.14 mm	84.1 in.
<b>Width</b>	1701.8 mm	67.0 in.
<b>Height</b>	2024.38 mm	79.7 in.
<b>Engine Weight (dry)</b>	4309 kg	9500 lb.

Note: Do not use for installation design. See general dimension drawings for detail. (Drawing #195-7946)

### RATING DEFINITIONS AND CONDITIONS

**Ratings** are based on SAE J1995 standard conditions of 100 kPa (29.61 in Hg) and 25° C (77° F). These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions of 100 kPa (29.61 in Hg), 27° C (81° F), and 60% relative humidity. Ratings are valid for air cleaner inlet temperatures up to and including 50° C (122° F).

**Fuel consumption** has a tolerance of +5% and is based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18 390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal). Fuel consumption shown with all oil, fuel, and water pumps, engine driven.

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