

**High Displacement – EU IIIA
2240 bkW/3004 bhp @ 1800 rpm**

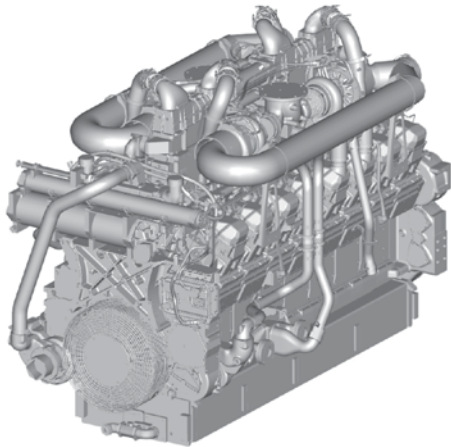


Image shown may not reflect actual configuration

Specifications

Cat® 3516C HD Locomotive Engine	Metric	Imperial (English)
Configuration	V-16, 4-Stroke-Cycle Diesel	
Bore	170 mm	6.7 in
Stroke	215 mm	8.5 in
Displacement	78 L	4760 in ³
Aspiration	Turbocharged-Aftercooled	
Compression Ratio	14.7	
Rotation (from flywheel end)	Counterclockwise	
Capacity for Liquids – Cooling System Lube Oil System (refill)	267 L 400 L	70.5 U.S. gal 106 U.S. gal
Weight, Net Dry (approx) including flywheel	8956 kg	19,745 lb
Cold Start Capability	6°C	43°F
Electronic Fuel Injection	Meets EU IIIA Exhaust Emission Standards	

Standard Equipment

Air Inlet System

2-stage aftercooler core, material: copper
Four top-mounted turbochargers with water-cooled bearing housing

Control System

Fuel-cooled ADEM™ A3 electronic engine control, requires isolated 10 amps at 24V DC for operation

Cooling System

Thermostats and housing — full open temperature 92°C (198°F) for engine jacket water
Jacket water and separate circuit pumps — gear-driven, centrifugal
Separate Circuit Aftercooler (SCAC) cooling circuit thermostatically controlled to maintain the aftercooler water temperature, requires customer-supplied cooling system to supply 43°C (109.4°F) water to meet exhaust emissions limits
Connections: jacket water — single inlet separate circuit — flange-type with companion flange

Exhaust System

Exhaust manifold, dry, gas tight, dual exhaust outlet

Flywheels and Flywheel Housings

Flywheel, SAE No. 00, 183 teeth
Flywheel housing, SAE No. 00
SAE standard rotation

Front Housing

Two-sided front housing

Fuel System

Fuel filters, cartridge type, RH service
Fuel transfer pump
Electronically controlled unit injectors

Lube System

Crankcase breathers, top-mounted
Oil cooler
Oil filler, RH, with chained stopper
LH and RH dipstick
Oil filter, RH service
Oil pump — gear-type
Shallow oil pan

Power Take-offs

Accessory drive — lower LH, used to drive SCAC pump

Protection System

ECM controlled warnings, derates, and shutdowns for coolant temperature, oil pressure, intake air restriction, crankcase pressure, and overspeed

General

Paint — Caterpillar yellow
Vibration damper and guard
Lifting eyes

Special Locomotive Equipment

Electrical interface
Junction box for remote mounting (shipped loose) provides normal and emergency shutoff
Customer connection to ADEM control including: throttle; speed signal; General Alarm Relay (GAR), NC or NO contacts; Shut Down Notify Relay (SDNR), NC or NO contacts; Start Enable Relay (SER), NO contacts; Cat Data Link; CANbus SAE J1939; load feedback; torque limiting; remote emergency and normal shutdown switch connections; engine electrical power connections; J1939 broadcast of engine monitoring parameters

Optional Equipment

Air Inlet System

Air cleaners — single or dual element
Air inlet adapters for air cleaners

Control System

Throttle position signal conversion module (shipped loose) — provides PWM signal to engine control
Instrument panel for remote mounting

Cooling System

Connections (shipped loose) — flexible hose and mechanical connections for cooling water
Jacket water connections — hose stub or flange type (with companion flange)
Single jacket water outlet — hose stub or flange type (with companion flange)
Dual jacket water outlet — hose type (vertical or 45° forward)

Exhaust System

Exhaust port thermocouples
Exhaust flexible connections

Fuel System

Fuel filters, cartridge-type, LH service
Fuel priming pump (manual)
Flexible fuel lines (shipped loose)
Hard fuel return line includes flexible hose connections
Primary fuel filter (shipped loose)
Water/fuel separator (shipped loose)
Fuel cooler (shipped loose)

Lube System

Oil pan accessories: oil pan capacities, oil pan drain cover, filler, drain valve
Fumes disposal extension hoses (shipped loose)
Lubricating oil
Centrifugal oil filter
Oil filter, LH service

Mounting System

Rails (ledge-type)

Power Take-offs

Front accessory drives
Auxiliary drive shafts and pulleys
SAE B and C pump drives
Front crankshaft stub shafts and pulleys

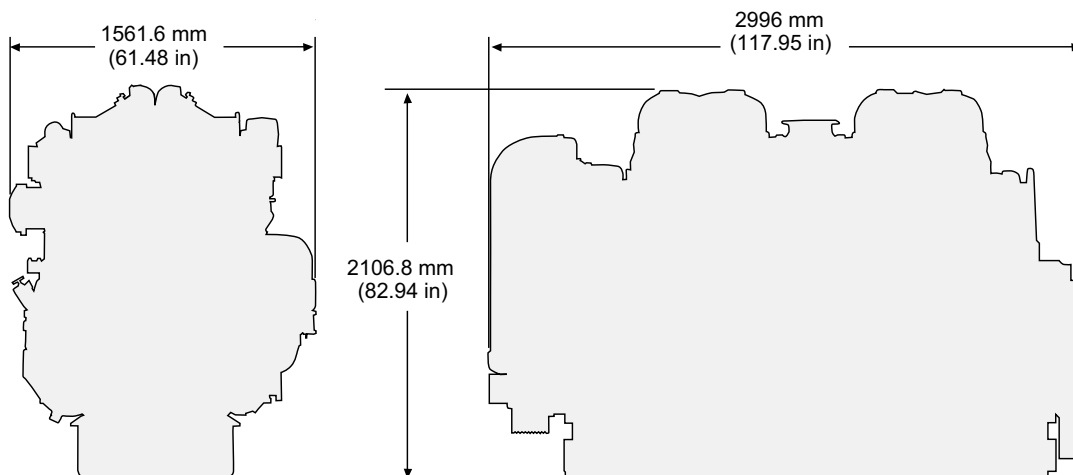
Protection System

Explosion relief valves
Discrete I/O module — provides 12 digital inputs and 8 Form C relay outputs, configurable by ET
ECM also provides diagnostic capability

Starting System

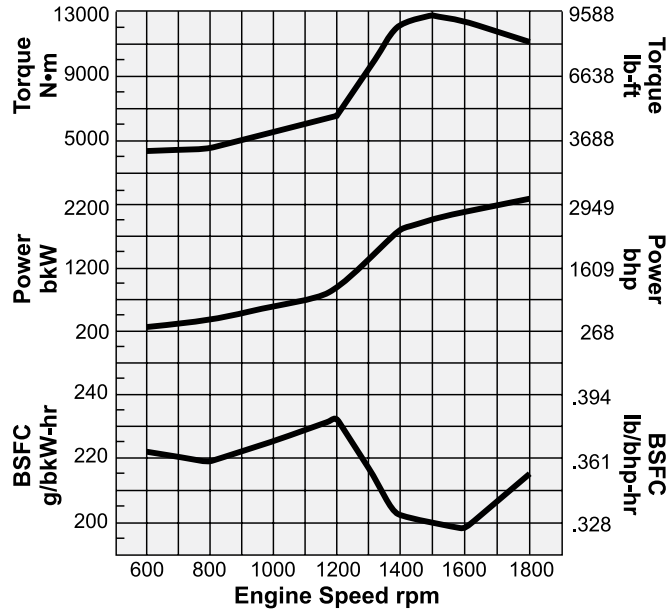
Electric starting motors (dual)
Electric starting motor magnetic switch enclosure
24/32/64 Volt available

Engine Dimensions



Performance Data

Turbocharged-Aftercooled — 1800 rpm



EM0897	
Rated kW (bhp) flywheel	2240 (3004)
Full Load — rpm	1800
Low Idle — rpm	600
Altitude Capability (max operating altitude) — m (ft)	800 (2625)
Fuel Consumption — L/hr (gal/hr)	
Idle (600 rpm)	69.7 (18.4)
Full Load (1800 rpm)	574.4 (151.7)
BSFC — g/kW-hr (lb/bhp-hr)	
Full Load (1800 rpm)	215.1 (0.354)

Ratings Definitions and Conditions

Performance obtained and corrected in accordance with ISO3046/2 standard atmospheric conditions of 99 kPa (29.31 in Hg) and 25°C (77°F). These values correspond to the standard atmospheric pressure and temperature as shown on SAE J1995.

Performance and fuel consumption are based on 35 API 15°C (60°F) gravity fuel having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) where the density is 839.9 g/liter (7.001 lb/U.S. gal). Tolerance is +/-3%.

Engine equipped with fuel, lube oil, and water pumps.

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