CATERPILLAR®

3512C HD MARINE ENGINE

2575 mhp
1895 bkW
1800 rpm

SHIP-ASSIST TUGS/YACHTS/PATROL CRAFT/MILITARY

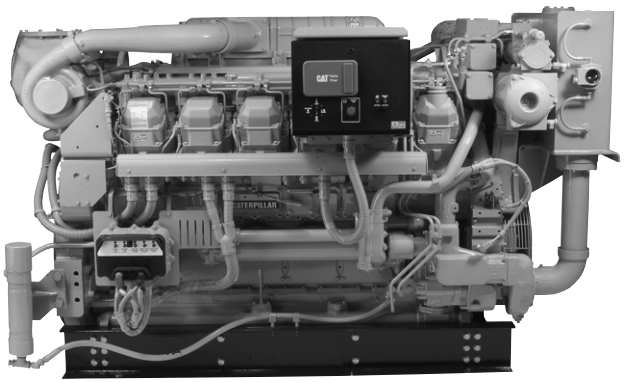


Image shown may not reflect actual engine

SPECIFICATIONS

V-12, 4-Stroke-Cycle-Diesel

Emissions	IMO Compliant
Bore	170.0 mm (6.7 in)
Stroke	215.0 mm (8.5 in)
Displacement	58.6 L (3576 in^3)
Rotation (from flywheel end)	Counterclockwise
Compression Ratio	14.7:1
Capacity for Liquids	
Cooling System (engine only)	156.8 L (41.4 gal)
Lube Oil System (refill)	155.0 L (40.9 gal)
Oil Change Interval	250 hr
Minimum Lube Oil Grade (required)	CH-4
Weight, Net Dry	
(LW configuration approx)	6725 kg (14,830 lb)
(Comm configuration approx)	7484 kg (16,500 lb)

STANDARD ENGINE EQUIPMENT

Air Inlet System
Corrosion-resistant separate circuit aftercooler core, power-core air cleaners with service indicator, dual turbochargers

Cooling System
Both combined and separate circuit options — auxiliary fresh water pump, centrifugal non-self-priming auxiliary sea water pump, gear driven centrifugal jacket water pump, expansion tank, engine oil cooler, thermostats and housing

Control System
Dual A3 engine control modules provide engine control and monitoring, rigid wiring harness with plug and run connectors on port and starboard sides

Exhaust System
Dry gas tight exhaust manifolds with SOLAS compliant heat shields, dual turbochargers with water-cooled bearings and heat shields, wastegate, modular pulse exhaust manifold, single exhaust outlet

Fuel System
Electronically controlled unit injectors, fuel filter with service indicators, fuel transfer pump, SOLAS compliant fuel connections with spill shield

Instrumentation
Engine-mounted instrument panel with Marine Power Display (MPD), four-position engine control switch, alarm horn, overspeed shutdown notification light, emergency stop notification light, secondary ECM “Ready” light, secondary ECM “Active” light, graphic display unit for analog or digital display of oil and fuel pressure, oil and fuel filter differential, system DC voltage, exhaust and water temperature, air inlet restriction, service meter, engine speed, fuel consumption (total and instantaneous)

Lube System
Pre-lube strategy, top-mounted dual crankcase breathers, oil filter with service indicators, oil level gauge, oil filler, gear-type oil pump

Mounting System
Three point trunnion mounts or mounting rails

Power Take-Offs
Accessory drives — lower RH and lower LH for standard rotation; upper and lower RH, upper and lower LH for opposite rotation; two-sided front housing

Protection System
A3 engine control module with customer programmable engine derate strategies, engine alarms and diagnostics displayed on local and remote MPDs, emergency stop pushbutton, safety shutoff protection for oil pressure and water temperature, overspeed protection

Standard Lightweight (LW) Configuration
250-hour oil pan, trunnion mounts, high performance cooling pipe, engine-mounted SW pump and heat exchanger

Optional Commercial (COMM) Configuration
1000-hour oil pan, mounting rails, expansion tank, engine-mounted SW pump and heat exchanger

General
Vibration damper and guard, Caterpillar® yellow paint, lifting eyes

Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities.

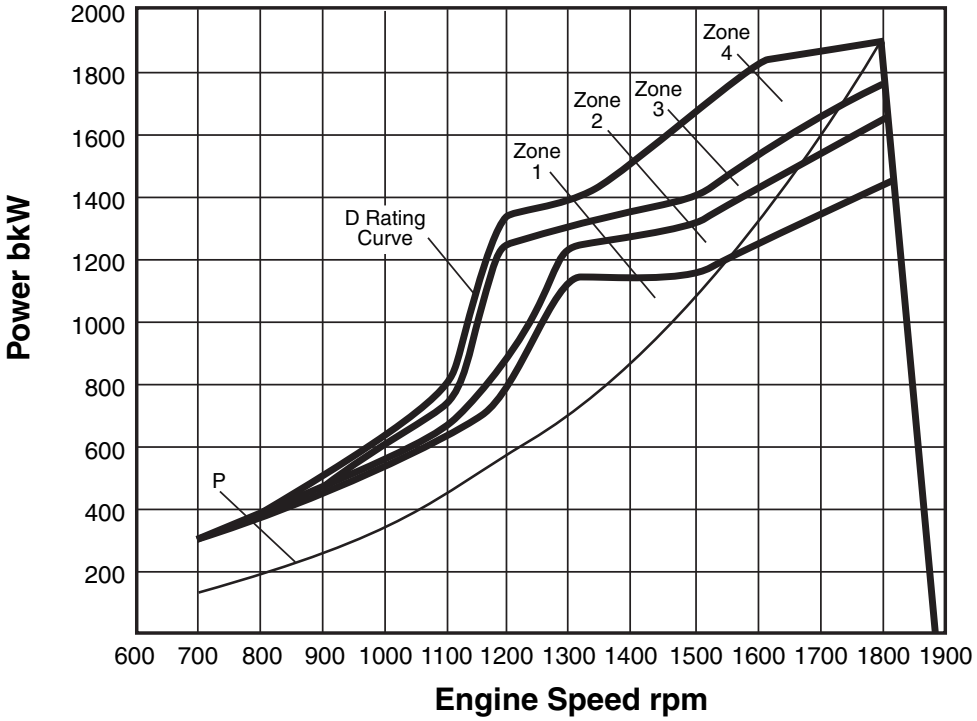
COMMON OPTIONAL EQUIPMENT

- Pilot house panel with Marine Power Display (MPD), remote start/stop, E-stop, alarm display, override
- Cat® engine-mounted plate-type heat exchanger with integrated fuel cooler
- Gateway for modbus/ethernet communications
- Individual cylinder exhaust temperature scanner
- Local speed control
- High capacity engine-mounted SW pumps
- Spare parts kit
- Vertical or horizontal exhaust connections
- Engine-mounted electric pre-lube pump

MARINE ENGINE PERFORMANCE

D Rating (Intermittent Duty)

Aftercooler Water Temperature 40°C



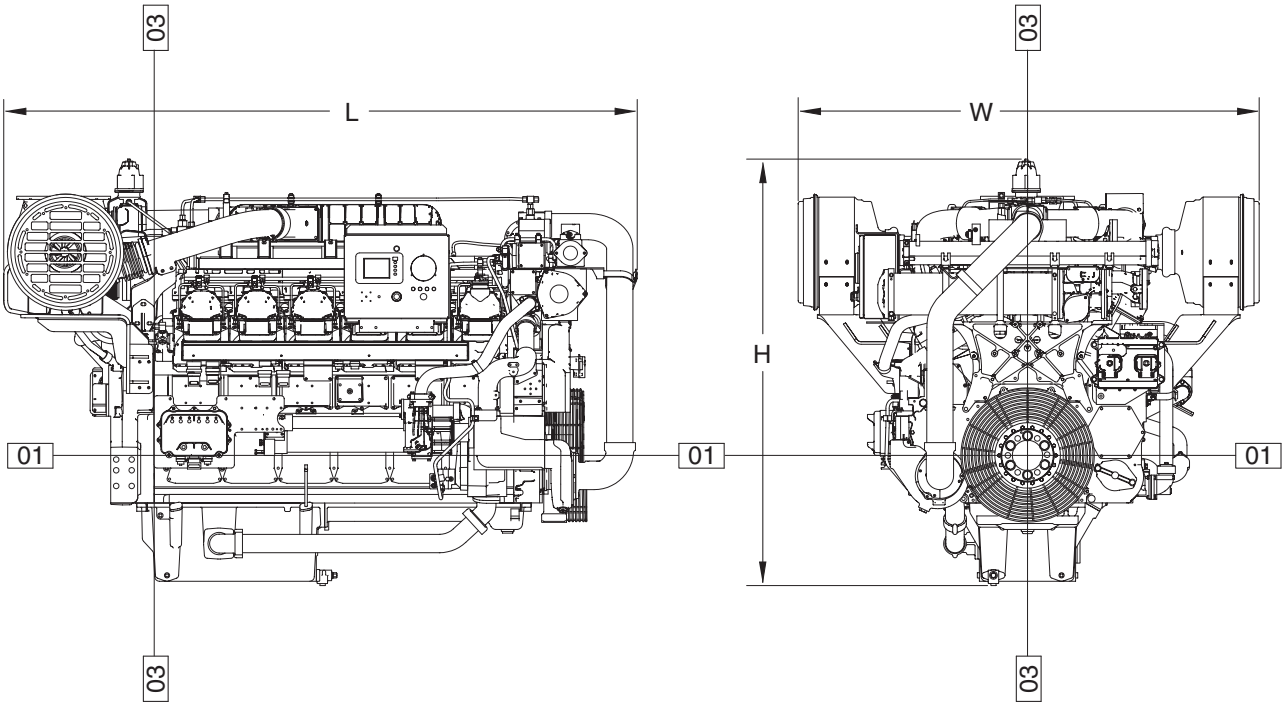
	Engine Speed rpm	Engine Power bkW	BSFC g/kW-hr	Fuel Rate L/hr
Zone 4 Curve: 4	1800	1895	216	483
	1500	1660	201	398
	1300	1384	195	322
	1100	782	206	192
	900	481	208	119
	650	250	205	61
Zone 3 Curve: 3	1807	1686	209	420
	1500	1400	196	327
	1300	1292	195	300
	1100	729	206	179
	900	481	208	119
	650	284	205	69
Zone 2 Curve: 2	1815	1471	209	366
	1500	1278	196	329
	1300	1225	196	286
	1100	666	205	163
	900	481	208	119
	650	284	205	69

Operation in Zone 2 is permitted for periods up to four hours followed by a one hour period in the Unrestricted Continuous Zone.

	Engine Speed rpm	Engine Power bkW	BSFC g/kW-hr	Fuel Rate L/hr
Zone 1 Curve: 1	1820	1417	209	353
	1500	1158	196	270
	1300	1153	196	269
	1100	624	205	152
	900	469	207	116
	650	284	205	69
Prop Demand Curve: P	1800	1895	216	483
	1500	1097	196	256
	1300	714	201	171
	1100	432	201	104
	900	237	202	57
	650	89	240	26

Heat rejection to coolant..... 664 kW
Heat rejection to aftercooler ..... 458 kW
Heat rejection to atmosphere ..... 151 kW

DIMENSIONS



Engine Dimensions		
Length	3153 mm	124 in
Width	2232 mm	88 in
Height	2065 mm	81 in
Weight, Net Dry **(LW configuration approx)** **(Comm configuration approx)**	 6725 kg 7484 kg	 14,830 16,500 lb

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #276-0041).

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RATING DEFINITIONS AND CONDITIONS

D RATING (Intermittent Duty)

RATINGS are based on SAE J1228/ISO8665 standard conditions of 100 kPa (29.61 in Hg), 25°C (77°F), and 30% relative humidity. These ratings also apply at ISO3046/1, DIN6271/3, and BS5514 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 45°C (113°F).

FUEL RATES are 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. For a “without pumps” condition, deduct approximately 0.5% for each pump not engine driven. Fuel consumption is nominal data with a tolerance of ±3%.

Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for additional information.

Performance data is calculated in accordance with tolerances and conditions stated in this specification sheet and is only intended for purposes of comparison with other manufacturers’ engines. Actual engine performance may vary according to the particular application of the engine and operating conditions beyond Caterpillar’s control.

Power produced at the flywheel will be within standard tolerances up to 50°C (122°F) combustion air temperature measured at the air cleaner inlet, and fuel temperature up to 52°C (125°F) measured at the fuel filter base. Power rated in accordance with NMMA procedure as crankshaft power. Reduce crankshaft power by 3% for propeller shaft power.

U.S. Sourced
LEHM4885-03 (8-05)