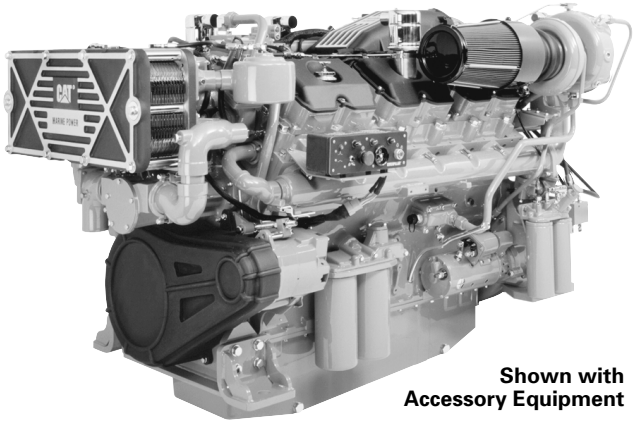
CATERPILLAR®

Marine Propulsion Engine 3412E

1044 bkW (1400 bhp) 1420 mhp @ 2300 rpm



Shown with Accessory Equipment

SPECIFICATIONS

V-12, 4-Stroke-Cycle-Diesel

Emissions . . . . . IMO compliant
Displacement . . . . . 26.4 L (1649 cu. in.)
Bore . . . . . 137.2 mm (5.4 in.)
Stroke . . . . . 152.4 mm (6.0 in.)
Aspiration . . . . . Turbocharged-Aftercooled
Governor . . . . . Electronic
Engine Weight, Net Dry (approx)
  Standard Engines . . . . . 2533 kg (5585 lb)
  Side Access Engines . . . . . 2649 kg (5840 lb)
Capacity for Liquids
  Cooling System . . . . . 72.5 L (19.1 U.S. gal)
  Lube Oil System
    Shallow Sump . . . . . 85 L (22.5 U.S. gal)
    Deep Sump . . . . . 138 L (35.5 U.S. gal)
Oil Change Interval
  Shallow Sump . . . . . 200 hr
  Deep Sump . . . . . 400 hr
  Caterpillar DEO 10W30 or 15W40
Rotation (from flywheel end) . . . . . Counterclockwise

STANDARD EQUIPMENT

Air Inlet System
Air cleaner/fumes disposal (closed system); corrosion resistant aftercooler core

Cooling System
Gear driven centrifugal auxiliary sea water pump; gear driven centrifugal jacket water pump; block heaters (one on each side); titanium plate heat exchanger with expansion tank; coolant recovery system; oil cooler

Exhaust System
Watercooled manifold and turbocharger; round flanged outlet, 130 mm (5.12 in.)

Flywheel and Flywheel Housing
SAE No. 1 (113 teeth)
SAE No. 0 (136 teeth) (side access engines only)

Fuel System
Fuel priming pump; fuel filter — RH service on port, LH service on starboard; Hydraulically actuated Electronically Controlled Unit Injector (HEUI) fuel system; flexible fuel lines; fuel transfer pump

Instruments
Instrument panel with start/stop switch; emergency button; maintenance due lamp; diagnostic lamp; electronic service meter; warning lamp; 15A breakers; starter motor magnetic switch; 8-hole panel with digital tachometer, oil pressure, oil temperature, water temperature, and fuel pressure gauges

Lube System
Crankcase breather; oil filter — RH service on port, LH service on starboard; oil filler in valve cover; shallow center sump oil pan; deep sump oil pan (side access engines only)

Mounting System
Front support — adjustable; front support (side access engines only)

Protection System
Electronic — 24 volt only

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

ACCESSORY EQUIPMENT

Air Starting Motor (side access engines only)
Alarm Contactor — Transmission Oil Pressure and Oil Temperature
24V 60 Amp Alternator
Digital Tachometer
Double Wall Oil Lines
Duplex Fuel Filter, RH or LH
Duplex Oil Filter (side access engines only)
24V Electric Starting Motor
Engine Monitoring System
Engine-to-Engine Wiring Harness
Engine Vision Display System
Fuel Cooler
GPS Interface Module
Hose Kit
Hydraulic Pump Drives
Light Duty Air Cleaner
Marine Power Display System
Non-Self-Priming Auxiliary Sea Water Pump
OEM Wiring Harness
Pilot House Instrument Panel
Primary Fuel Filter/Water Separator
Sea Water Inlet Connection (LH, U-Shaped; RH, Straight)
Sea Water Outlet Connection, 57 mm (2.25 in.)
Spare Parts Kit
Throttle Position Sensor
Vibration Isolation Mounting

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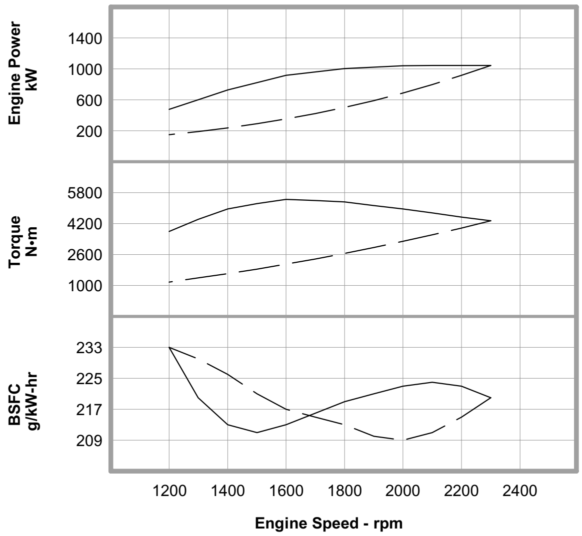
3412E MARINE PROPULSION — 1044 bkW (1400 bhp)

PERFORMANCE CURVES

E Rating — DM4104-02 IMO Compliant

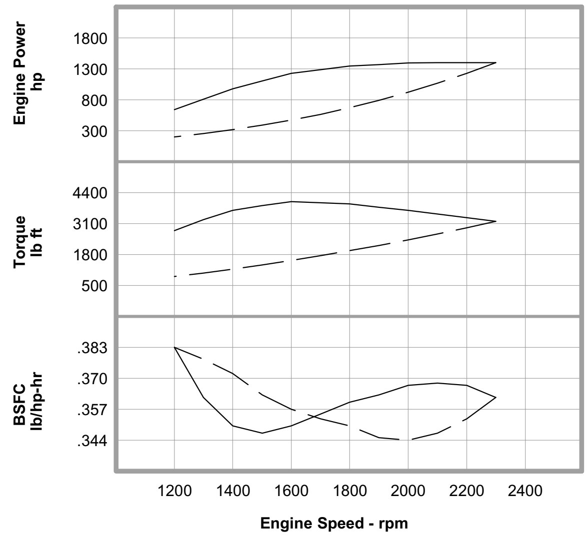


Metric | Maximum Power —— / Prop Demand — — | 1044 kW

Performance Data

	Engine Speed rpm	Engine Power kW	Engine Torque N•m	BSFC g/kW-hr	Fuel Rate L/hr
Maximum Power Data	2300	1044	4335	220.0	273.8
	2200	1044	4531	223.0	277.6
	2100	1044	4746	224.0	278.6
	2000	1039	4959	223.0	276.3
	1900	1021	5129	221.0	269.3
	1800	1003	5319	219.0	261.6
	1700	959	5385	216.0	246.8
	1600	914	5452	213.0	232.0
	1500	822	5230	211.0	206.7
	1400	727	4962	213.0	184.6
	1300	601	4417	220.0	157.7
	1200	476	3791	233.0	132.1
Prop Demand Data	2300	1044	4335	220.0	273.9
	2200	914	3967	215.0	233.8
	2100	795	3614	211.0	199.5
	2000	687	3278	209.0	170.8
	1900	589	2959	210.0	147.6
	1800	501	2655	213.0	126.9
	1700	422	2368	215.0	107.9
	1600	352	2098	217.0	90.9
	1500	290	1844	221.0	76.4
	1400	236	1606	226.0	63.4
	1300	189	1385	230.0	51.7
	1200	148	1180	233.0	41.2

Cubic prop demand curve with 3.0 exponent for displacement hulls only.



English | Maximum Power —— / Prop Demand — — | 1400 hp

Performance Data

	Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph
Maximum Power Data	2300	1400	3197	.362	72.3
	2200	1400	3342	.367	73.3
	2100	1400	3500	.368	73.6
	2000	1393	3657	.367	73.0
	1900	1369	3783	.363	71.1
	1800	1344	3923	.360	69.1
	1700	1286	3972	.355	65.2
	1600	1225	4021	.350	61.3
	1500	1102	3857	.347	54.6
	1400	975	3660	.350	48.8
	1300	806	3258	.362	41.7
	1200	639	2796	.383	34.9
Prop Demand Data	2300	1400	3197	.362	72.4
	2200	1225	2926	.353	61.8
	2100	1066	2665	.347	52.7
	2000	921	2418	.344	45.1
	1900	789	2182	.345	39.0
	1800	671	1958	.350	33.5
	1700	565	1746	.353	28.5
	1600	471	1547	.357	24.0
	1500	388	1360	.363	20.2
	1400	316	1184	.372	16.7
	1300	253	1021	.378	13.7
	1200	199	870	.383	10.9

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.

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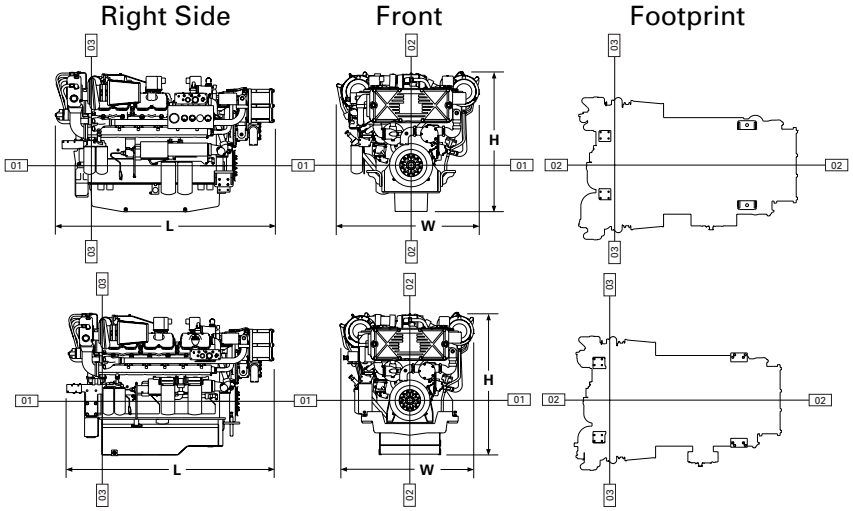

DIMENSIONS*

	Standard Engine		Side Access Engine	
	mm	in.	mm	in.
Overall Length	2076.6	81.8	2092.8	82.4
Length from front to rear face of block	1734.7	68.3	1734.7	68.3
Length from rear face of block to back of engine	341.9	13.5	358.1	14.1
Overall Height	1327.5	52.3	1437.2	56.6
Height from crankshaft centerline to top of engine	888.8	35.0	888.8	35.0
Height from crankshaft centerline to bottom of oil pan	438.7	17.3	548.4	21.6
Overall Width	1354.2	53.3	1354.2	53.3
Width from crankshaft centerline to port side (left side)	646.2	25.4	646.2	25.4
Width from crankshaft centerline to starboard side (right side)	708.0	27.9	708.0	27.9

Standard Engine	Front		Rear	
	mm	in.	mm	in.
Customer mounting hole diameter	27.5	1.1		5/8
Width from crankshaft centerline to side	380.0	15.0	252.4	9.9
			312.7	12.3
Length from rear face of block to mounting hole	1255.1	49.4	57.9	2.3
			134.2	5.3

Side Access Engine	Front		Rear	
	mm	in.	mm	in.
Customer mounting hole diameter	20.5	0.8		5/8
Width from crankshaft centerline to side	431.8	17.0	352.7	13.9
	457.2	18.0	413.0	16.3
Length from rear face of block to mounting hole	1242.5	48.9	78.4	3.1
	1261.5	49.7	154.6	6.1
	1350.5	53.2		
	1369.5	53.9		

*Illustrations and dimensions from drawings: 180-7468 Standard Engine, 173-0014 Side Access Engine.

RATING DEFINITIONS AND CONDITIONS

E Rating –

Typical Application ..... Planing hull vessels such as pleasure craft, harbor patrol, harbor master, and some fishing and pilot boats.
Typical Hours Per Year ..... 250 to 1000
Time at Rated Speed ..... Up to 8%
Load Factor ..... Up to 30%
Typical Time at Full Load..... 1/2 out of 6 hours

Rated Speed ..... 2300 rpm
Maximum Cruise Speed..... 2100 rpm
Maximum Continuous Cruise Speed..... 1900 rpm

Engine Performance Parameters

Power..... ±3%
Specific Fuel Consumption ..... ±3%
Fuel Rate..... ±5%

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.

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/L (7.001 lb/U.S. gal).

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.

TMI Reference No.: DM4104-02 (6-19-01)
Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

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