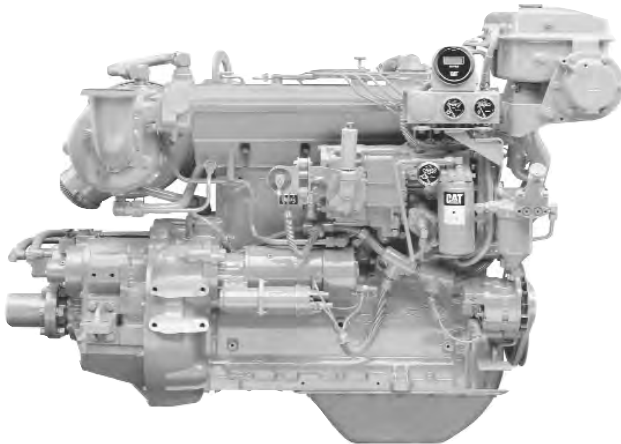




# Marine Propulsion Engine 3304B

75 kW (100 bhp) 101 mhp @ 2200 rpm



Shown with Accessory Equipment

## SPECIFICATIONS

### I-4, 4-Stroke-Cycle-Diesel

Emissions	Non-IMO
Displacement	7 L (425 cu. in.)
Bore	121 mm (4.8 in.)
Stroke	152 mm (6.0 in.)
Aspiration	Naturally Aspirated
Governor	Hydra-mechanical
Engine Weight, Net Dry (approx)	
Heat Exchanger Cooled	775 kg (1710 lb)
Keel Cooled	755 kg (1665 lb)
Capacity for Liquids	
Cooling System	12.9 L (3.4 U.S. gal)
Lube Oil System (refill)	19.0 L (5.0 U.S. gal)
Oil Change Interval	500 hr
Caterpillar DEO 10W30 or 15W40	
Rotation (from flywheel end)	Counterclockwise

## STANDARD EQUIPMENT

### Air Inlet System

Regular duty single stage dry air cleaner

### Cooling System

Gear driven self-priming auxiliary sea water pump with rubber impeller (heat exchanger engines only), gear driven centrifugal jacket water pump, engine oil cooler, expansion tank, engine-mounted heat exchanger with removable tube bundle (heat exchanger engines only), thermostat and housing, transmission oil cooler

### Exhaust System

Dry flange, 76 mm (3 in.)

### Flywheel and Flywheel Housing

SAE No. 2 (156 teeth)

### Fuel System

Fuel priming pump, fuel transfer pump, fuel filter, flexible fuel lines

### Instruments

Fuel pressure gauge, service meter, heavy-duty tachometer drive

### Lube System

Top-mounted crankcase breather, LH oil filter and oil level gauge

### Mounting System

Front support

### General

Caterpillar yellow paint, lifting eyes

## ACCESSORY EQUIPMENT

Air Starting Motor

Alarm Contactor (Oil Pressure, Water Temperature)

12V 51 Amp, 24V 35 Amp, 24V 60 Amp Alternator

Auxiliary Drive Pulley

Digital Tachometer

Double Wall Fuel Lines

Duplex Fuel Filters

Electric Overspeed Shutoff

Electric Starting Motor

Ether Starting Aid

Exhaust Elbows, Pipes, Rain Caps, Flexible Fittings

Front Enclosed Clutch

Hydraulic Pump Drive

Magnetic Pickup

Manual Shutoff

Pilot House Instrument Panel

Primary Fuel Filter/Water Separator

Remote-Mounted Pilot House Controls

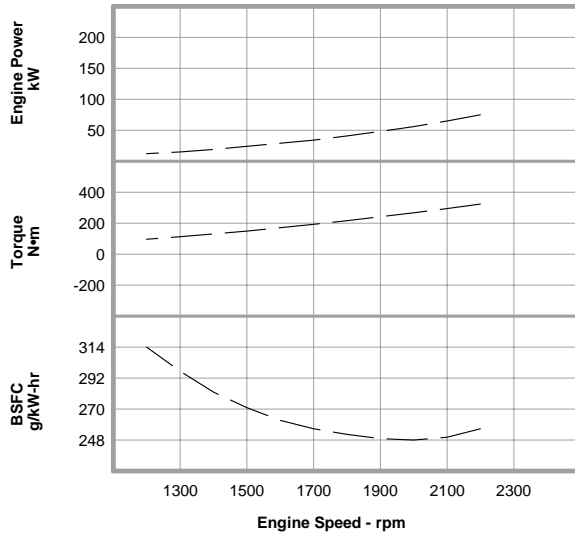
Remote Positive Locking Governor Control

Solenoid Shutoffs

Spare Parts Kit

**PERFORMANCE CURVES**

**C Rating — TM1535-02**

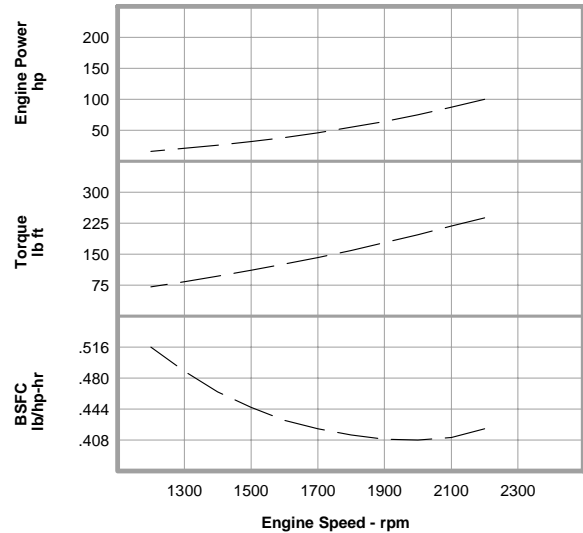


Metric Maximum Power  
Prop Demand **75 kW**

**Performance Data**

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
<b>Prop Demand Data</b>	2200	75	323	256.0	22.8
	2100	65	295	250.0	19.3
	2000	56	267	248.0	16.6
	1900	48	241	249.0	14.2
	1800	41	216	252.0	12.3
	1700	34	193	256.0	10.5
	1600	29	171	262.0	9.0
	1500	24	150	271.0	7.6
	1400	19	131	282.0	6.5
	1300	15	113	297.0	5.4
	1200	12	96	314.0	4.5

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

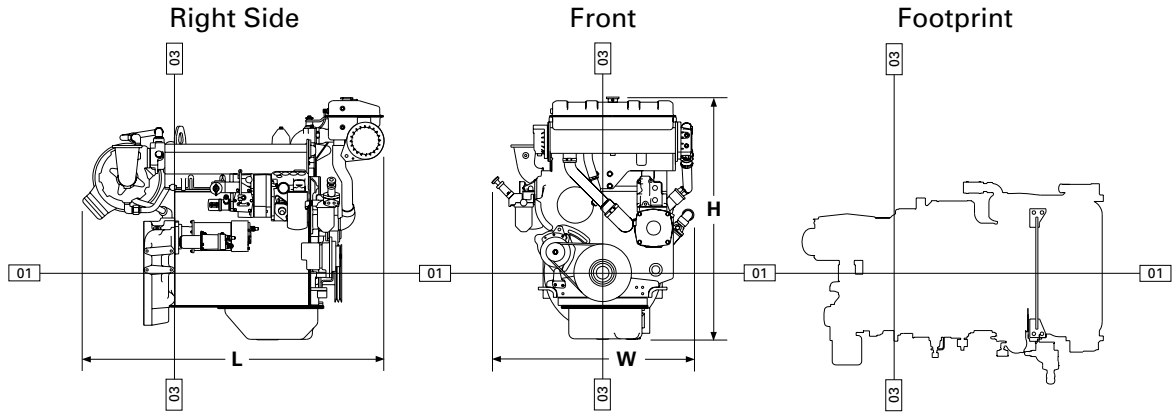


English Maximum Power  
Prop Demand **100 hp**

**Performance Data**

	Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph
<b>Prop Demand Data</b>	2200	100	238	.421	6.0
	2100	87	218	.411	5.1
	2000	75	197	.408	4.4
	1900	64	178	.409	3.8
	1800	55	159	.414	3.2
	1700	46	142	.421	2.8
	1600	38	126	.431	2.4
	1500	32	111	.446	2.0
	1400	26	97	.464	1.7
	1300	21	83	.488	1.4
	1200	16	71	.516	1.2

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.



**DIMENSIONS\***

	<b>mm</b>	<b>in.</b>
<b>Overall Length</b>	1420.9	55.9
Length from front to rear face of block	986.6	38.8
Length from rear face of block to back of flywheel housing	146.3	5.8
<b>Overall Height</b>	1141.3	44.9
Height from crankshaft centerline to top of engine	827.7	32.6
Height from crankshaft centerline to bottom of oil pan	313.6	12.4
<b>Overall Width</b>	953.0	37.5
Width from crankshaft centerline to port side (left side)	430.3	16.9
Width from crankshaft centerline to starboard side (right side)	522.7	20.6
<b>Customer mounting hole diameter</b>	16.7	0.7
<b>Width from crankshaft centerline to mounting holes</b>	285.8	11.3
<b>Length from rear face of block to mounting holes</b>	659.4	26.0
	697.5	27.5

\*Illustrations and dimensions from drawing: 118-7824

**RATING DEFINITIONS AND CONDITIONS**

**C Rating –**

Typical Application . . . Vessels such as ferries, harbor tugs, fishing boats moving at higher speeds out and back (e.g. lobster, crayfish, and tuna), offshore service boats, and also displacement hull yachts and short trip coastal freighters where engine load and speed are cyclical.

- Typical Hours Per Year . . . . . 2000 to 4000
- Time at Rated Speed . . . . . Up to 50%
- Load Factor . . . . . 20 to 80%
- Typical Time at Full Load . . . . . 6 out of 12 hours
- Rated Speed . . . . . 2200 rpm
- Maximum Cruise Speed . . . . . 2100 rpm
- Maximum Continuous Cruise Speed . . . . 2000 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.



## 3304B MARINE PROPULSION — 75 bkW (100 bhp)

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.

TM Reference No.: TM1535-02 (6-19-01)

Materials and specifications are subject to change without notice.

The International System of Units (SI) is used in this publication.

LEHM1231-00 (6-01)  
Supersedes LEHM7458

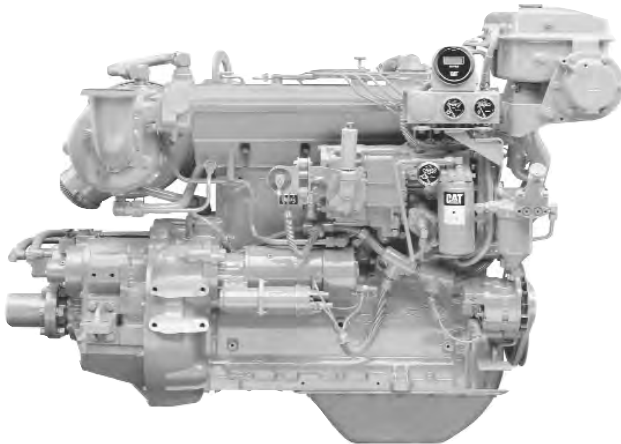
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# Marine Propulsion 3304B Engine

63 kW (85 bhp) 86 mhp @ 2000 rpm



Shown with Accessory Equipment

## SPECIFICATIONS

### I-4, 4-Stroke-Cycle-Diesel

Emissions	Non-IMO
Displacement	7 L (425 cu. in.)
Bore	121 mm (4.8 in.)
Stroke	152 mm (6.0 in.)
Aspiration	Naturally Aspirated
Governor	Hydra-mechanical
Engine Weight, Net Dry (approx)	
Heat Exchanger Cooled	775 kg (1710 lb)
Keel Cooled	755 kg (1665 lb)
Capacity for Liquids	
Cooling System	12.9 L (3.4 U.S. gal)
Lube Oil System (refill)	19.0 L (5.0 U.S. gal)
Oil Change Interval	500 hr
Caterpillar DEO 10W30 or 15W40	
Rotation (from flywheel end)	Counterclockwise

## STANDARD EQUIPMENT

### Air Inlet System

Regular duty single stage dry air cleaner

### Cooling System

Gear driven self-priming auxiliary sea water pump with rubber impeller (heat exchanger engines only), gear driven centrifugal jacket water pump, engine oil cooler, expansion tank, engine-mounted heat exchanger with removable tube bundle (heat exchanger engines only), thermostat and housing, transmission oil cooler

### Exhaust System

Dry flange, 76 mm (3 in.)

### Flywheel and Flywheel Housing

SAE No. 2 (156 teeth)

### Fuel System

Fuel priming pump, fuel transfer pump, fuel filter, flexible fuel lines

### Instruments

Fuel pressure gauge, service meter, heavy-duty tachometer drive

### Lube System

Top-mounted crankcase breather, LH oil filter and oil level gauge

### Mounting System

Front support

### General

Caterpillar yellow paint, lifting eyes

## ACCESSORY EQUIPMENT

Air Starting Motor

Alarm Contactor (Oil Pressure, Water Temperature)

12V 51 Amp, 24V 35 Amp, 24V 60 Amp Alternator

Auxiliary Drive Pulley

Digital Tachometer

Double Wall Fuel Lines

Duplex Fuel Filters

Electric Overspeed Shutoff

Electric Starting Motor

Ether Starting Aid

Exhaust Elbows, Pipes, Rain Caps, Flexible Fittings

Front Enclosed Clutch

Hydraulic Pump Drive

Magnetic Pickup

Manual Shutoff

Pilot House Instrument Panel

Primary Fuel Filter/Water Separator

Remote-Mounted Pilot House Controls

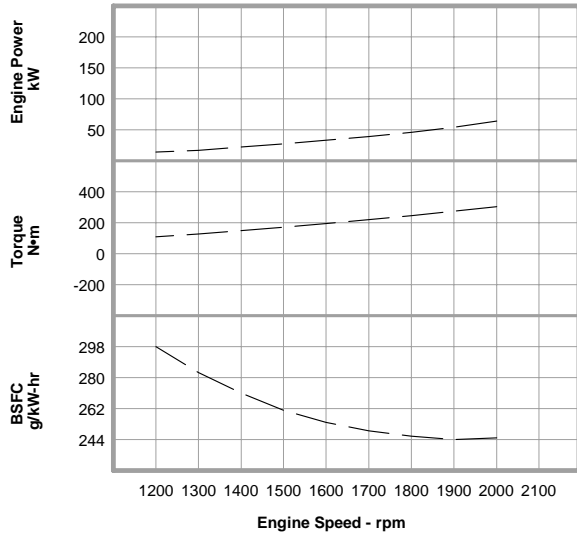
Remote Positive Locking Governor Control

Solenoid Shutoffs

Spare Parts Kit

**PERFORMANCE CURVES**

**A Rating — TM1536-02**

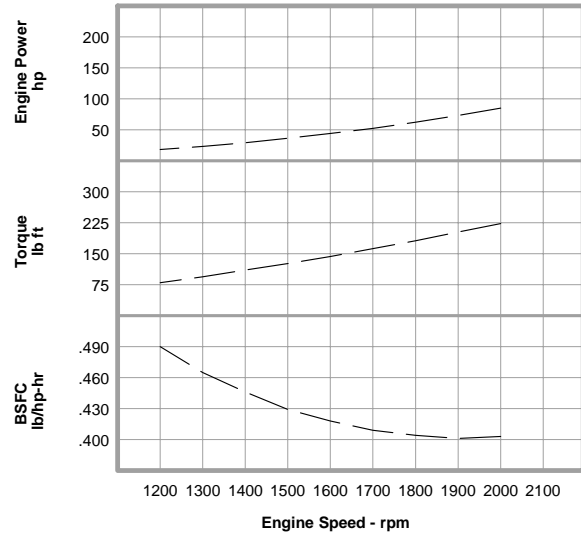


Metric Maximum Power  Prop Demand  **64 kW**

**Performance Data**

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
<b>Prop Demand Data</b>	2000	64	303	245.0	18.6
	1900	54	274	244.0	15.9
	1800	46	246	246.0	13.6
	1700	39	219	249.0	11.6
	1600	33	194	254.0	9.8
	1500	27	171	261.0	8.3
	1400	22	149	271.0	7.0
	1300	17	128	283.0	5.9
	1200	14	109	298.0	4.9

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

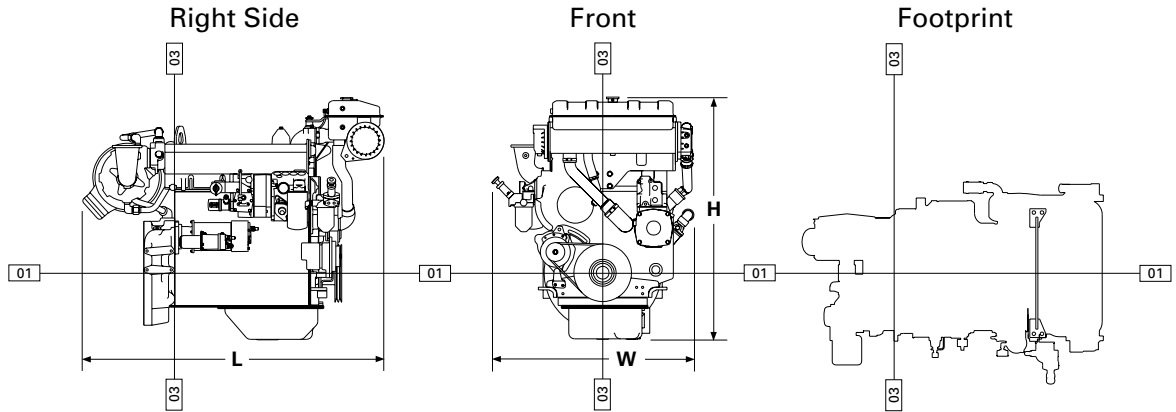


English Maximum Power  Prop Demand  **85 hp**

**Performance Data**

	Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph
<b>Prop Demand Data</b>	2000	85	223	.403	4.9
	1900	73	202	.401	4.2
	1800	62	181	.404	3.6
	1700	52	162	.409	3.1
	1600	44	143	.418	2.6
	1500	36	126	.429	2.2
	1400	29	110	.446	1.8
	1300	23	94	.465	1.6
	1200	18	80	.490	1.3

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.



**DIMENSIONS\***

	<b>mm</b>	<b>in.</b>
<b>Overall Length</b>	1420.9	55.9
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Width from crankshaft centerline to starboard side (right side)	522.7	20.6
	<b>Front</b>	
	<b>mm</b>	<b>in.</b>
Customer mounting hole diameter	16.7	0.7
Width from crankshaft centerline to mounting holes	285.8	11.3
Length from rear face of block to mounting holes	659.4	26.0
	697.5	27.5

\*Illustrations and dimensions from drawing: 118-7824

**RATING DEFINITIONS AND CONDITIONS**

**A Rating –**

Typical Application . . . For heavy-duty service in vessels such as freighters, tugboats, bottom drag trawlers, and deep river towboats where the engine is operated at rated load and speed up to 100% of the time without interruption or load cycling.

- Typical Hours Per Year . . . . . 5000 to 8000
- Time at Rated Speed . . . . . Up to 100%
- Load Factor . . . . . 80 to 100%
- Typical Time at Full Load . . . . . No limit

**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.



## 3304B MARINE PROPULSION — 63 kW (85 bhp)

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.

TM Reference No.: TM1536-02 (6-19-01)

Materials and specifications are subject to change without notice.

The International System of Units (SI) is used in this publication.

LEHM1232-00 (6-01)  
Supersedes LEHM7458

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