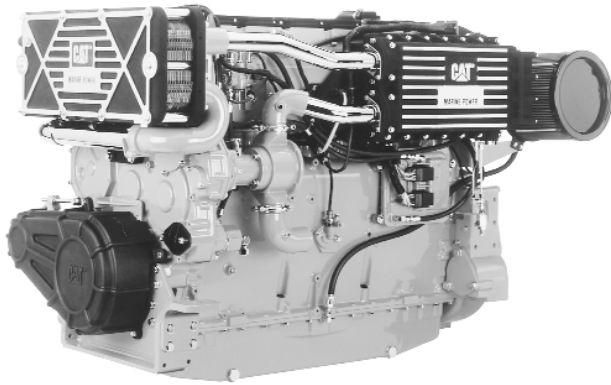




# Marine Propulsion Engine 3406E

522 kW (700 bhp) 710 mhp @ 2200 rpm



Shown with Accessory Equipment

## SPECIFICATIONS

### I-6, 4-Stroke-Cycle-Diesel

Emissions	IMO compliant
Displacement	14.6 L (893 cu. in.)
Bore	137.2 mm (5.4 in.)
Stroke	165.1 mm (6.5 in.)
Aspiration	Turbocharged-Aftercooled
Governor	Electronic
Engine Weight, Net Dry (approx)	1586 kg (3497 lb)
Capacity for Liquids	
Cooling System	43.7 L (11.4 U.S. gal)
Lube Oil System (refill)	49 L (13 U.S. gal)
Oil Change Interval	250 hr
Caterpillar DEO 10W30 or 15W40	
Rotation (from flywheel end)	Counterclockwise

## STANDARD EQUIPMENT

### Air Inlet System

Corrosion resistant sea water aftercooler; light-duty air cleaner, open system

### Cooling System

Self-priming sea water pump with rubber impeller, gear driven jacket water pump, titanium plate heat exchanger with expansion tank, coolant recovery system, thermostat and housing

### Exhaust System

Watercooled manifold and turbocharger; round flanged outlet, 152 mm (6 in.)

### Flywheel and Flywheel Housing

SAE No. 1 (113 teeth)

### Fuel System

Fuel priming pump; fuel transfer pump; fuel filter — RH service on port, LH service on starboard; flexible fuel lines

### Instruments

24-volt instrument panel with start/stop switch, emergency stop button, maintenance light, diagnostic light, warning light, 15-amp and 3-amp breakers, starter motor magnetic switch, electric service meter

### Lube System

Crankcase breather; engine oil cooler; oil level gauge and oil filter — RH service on port, LH service on starboard; shallow oil pan; gear driven oil pump

### Mounting System

Adjustable front support

### General

Vibration damper and guard, Caterpillar yellow paint, lifting eyes

## ACCESSORY EQUIPMENT

Aftercooler Condensate Drain

Air Starting Motor

12V 51 Amp, 12V 105 Amp Alternator

Cruise Kits

12V/24V DC Converter

Digital Tachometer

Double Wall Fuel Lines and Drain

Dress-Up Kit

Duplex Fuel Filters

Electric Starting Motor

Engine Monitoring System

Engine-to-Engine Wiring Harness

Engine Vision Display System

Exhaust Elbow, Dry or Watercooled

Exhaust Pipe, Flange, Flexible Fittings

Front Enclosed Clutch

Front Stub Shaft

Fuel Cooler

GPS Interface Module

Heavy-Duty Front Support

Hydraulic Pump Drive

12V Instrument Panel

Jacket Water Heater

Marine Power Display

OEM Wiring Harness

Primary Fuel Filter/Water Separator

Pulley and Damper

Spare Parts Kit

Throttle Position Sensor

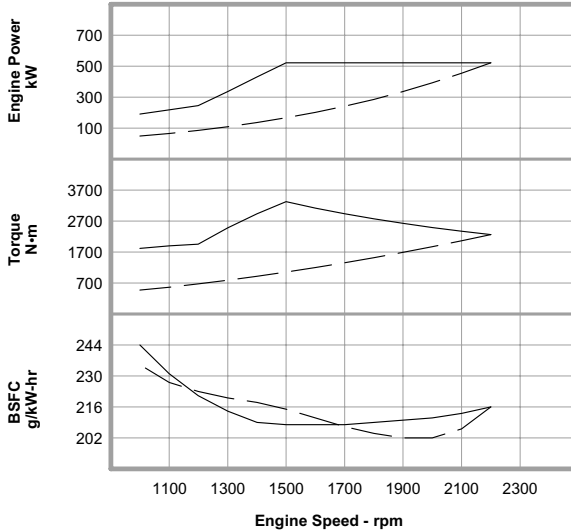
Transmission Oil Cooler

Vibration Isolation Mounting

**PERFORMANCE CURVES**

**D Rating — DM6121-00**

**IMO Compliant**

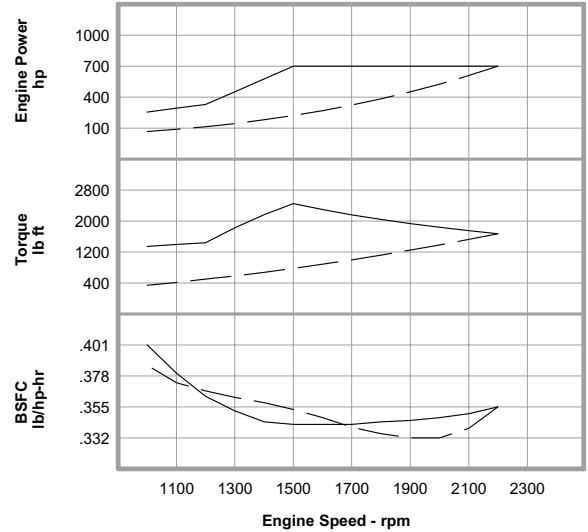


**Metric**      **Maximum Power**      **522 kW**  
**Prop Demand**

**Performance Data**

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
<b>Maximum Power Data</b>	2200	522	2266	216.0	134.4
	2100	522	2374	213.0	132.7
	2000	522	2493	211.0	131.6
	1900	522	2623	210.0	130.6
	1800	522	2769	209.0	129.7
	1700	522	2932	208.0	129.4
	1600	522	3115	208.0	129.3
	1500	522	3323	208.0	129.4
	1400	430	2935	209.0	107.4
	1300	337	2477	214.0	85.9
	1200	245	1951	221.0	64.6
1100	218	1894	231.0	60.2	
1000	190	1817	244.0	55.4	
<b>Prop Demand Data</b>	2200	522	2266	216.0	134.4
	2100	454	2065	206.0	111.3
	2000	392	1873	202.0	94.3
	1900	336	1690	202.0	80.9
	1800	286	1517	204.0	69.5
	1700	241	1353	207.0	59.5
	1600	201	1198	211.0	50.5
	1500	166	1053	215.0	42.4
	1400	135	918	218.0	34.9
	1300	108	791	220.0	28.3
	1200	85	674	223.0	22.5
1100	65	566	227.0	17.7	
1000	49	468	235.0	13.7	

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

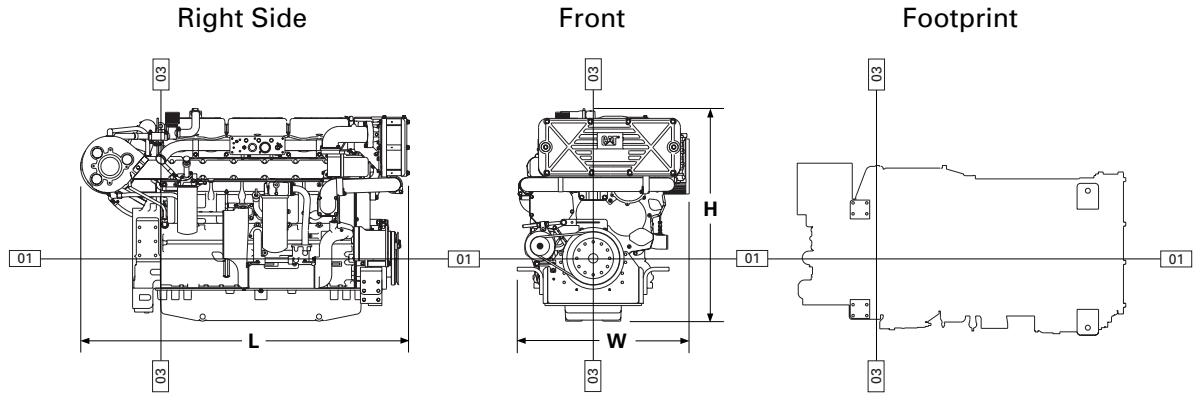


**English**      **Maximum Power**      **700 hp**  
**Prop Demand**

**Performance Data**

	Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph
<b>Maximum Power Data</b>	2200	700	1671	.355	35.5
	2100	700	1751	.350	35.1
	2000	700	1839	.347	34.8
	1900	700	1935	.345	34.5
	1800	700	2042	.344	34.3
	1700	700	2162	.342	34.2
	1600	700	2297	.342	34.2
	1500	700	2451	.342	34.2
	1400	577	2165	.344	28.4
	1300	452	1827	.352	22.7
	1200	329	1439	.363	17.1
1100	293	1397	.380	15.9	
1000	255	1340	.401	14.6	
<b>Prop Demand Data</b>	2200	700	1671	.355	35.5
	2100	609	1523	.339	29.4
	2000	526	1381	.332	24.9
	1900	451	1246	.332	21.4
	1800	383	1119	.335	18.4
	1700	323	998	.340	15.7
	1600	269	884	.347	13.3
	1500	222	777	.353	11.2
	1400	180	677	.358	9.2
	1300	144	583	.362	7.5
	1200	114	497	.367	5.9
1100	88	417	.373	4.7	
1000	66	345	.386	3.6	

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>	1822.7	71.8		
Length from front to rear face of block	1379.4	54.3		
Length from rear face of block to back of flywheel housing	155.1	6.1		
<b>Overall Height</b>	1177.8	46.4		
Height from crankshaft centerline to top of engine	829.8	32.7		
Height from crankshaft centerline to bottom of oil pan	348.0	13.7		
<b>Overall Width</b>	953.6	37.5		
Width from crankshaft centerline to port side (left side)	520.1	20.5		
Width from crankshaft centerline to starboard side (right side)	421.0	16.6		
	<b>Front</b>	<b>in.</b>	<b>Rear</b>	<b>in.</b>
Customer mounting hole diameter	27.5	1.1		5/8
Width from crankshaft centerline to mounting holes	380.0	15.0	252.4	9.9
			312.8	12.3
Length from rear face of block to mounting holes	1168.5	46.0	57.9	2.3
			134.1	5.3

\*Illustrations and dimensions from drawing: 137-6875 Heat Exchanger Cooled.

**RATING DEFINITIONS AND CONDITIONS**

**D Rating –**

Typical Application . . . Planing hull vessels such as offshore patrol boats, customs, police, and some fire and fishing boats. Also used for bow and stern thrusters.

Typical Hours Per Year . . . . . 1000 to 3000  
 Time at Rated Speed . . . . . Up to 16%  
 Load Factor . . . . . Up to 50%  
 Typical Time at Full Load . . . . . 2 out of 12 hours

Rated Speed . . . . . 2200 rpm  
 Maximum Cruise Speed . . . . . 2050 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.



## 3406E MARINE PROPULSION — 522 bkW (700 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.

TMI Reference No.: DM6121-00 (6-19-01)

Materials and specifications are subject to change without notice.

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

LEHM1074-00 (6-01)

Printed in U.S.A.

Supersedes LEHM8507-01

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