



# Marine Propulsion 3412C

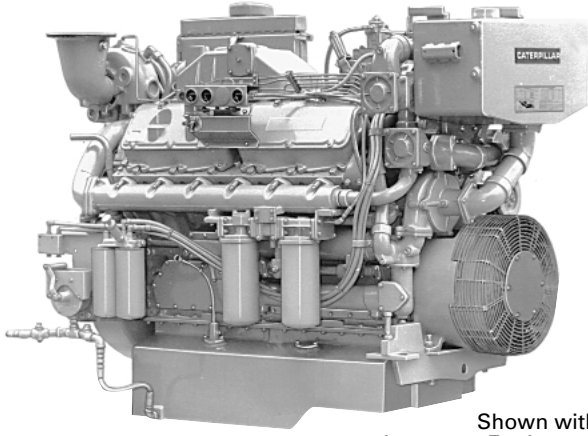
PRELIMINARY

537 bkW @ 1800 rpm  
720 bhp @ 1800 rpm

## SPECIFICATIONS

### V-12, 4-Stroke-Cycle-Diesel

Emissions	IMO compliant
Bore—mm (in)	137.2 (5.4)
Stroke—mm (in)	152.4 (6.0)
Displacement—L (cu in)	27.0 (1,649)
Aspiration	DITA
Rotation (from flywheel end)	Counterclockwise
Compression Ratio	14.5:1
Capacity for Liquids—L (U.S. gal)	
Cooling System	67.1 (17.7)
Lube Oil System (refill)	139.1 (36.2)
Oil Change Interval — hours	
Caterpillar DEO 10W30 or 15W50	500
Engine Weight, Net Dry (approx) —	
kg (lb)	1953.6 (4,303)
Governor	Hydra-mechanical



Shown with Accessory Equipment

## STANDARD ENGINE EQUIPMENT

### Air Inlet System

corrosion resistant coated aftercooler core; turbocharger inlet, 152 mm (6 in); heavy-duty dry panel type air cleaner; air cleaner inlet adapter, 178 mm (7 in.) tube connections

### Control System

hydra-mechanical governor

### Cooling System

gear-driven self priming auxiliary sea water pump, gear-driven centrifugal jacket water pump, expansion tank, transmission oil cooler, engine oil cooler, thermostats and housing with 92°C (198°F) full open temperature

### Exhaust System

watercooled manifold and turbocharger; dry elbow and flange, 203 mm (8 in.)

### Flywheel and Flywheel Housings

SAE No. 0

### Fuel System

fuel priming pump, fuel transfer pump, RH fuel filter, fuel ratio control, flexible fuel lines

### Instruments

RH instrument panel with oil pressure, water temperature, and fuel pressures gauges; service meter

### Lube System

RH dipstick and oil filter; crankcase breather, oil filter in valve cover; deep sump oil pan

### Mounting System

front support

### General

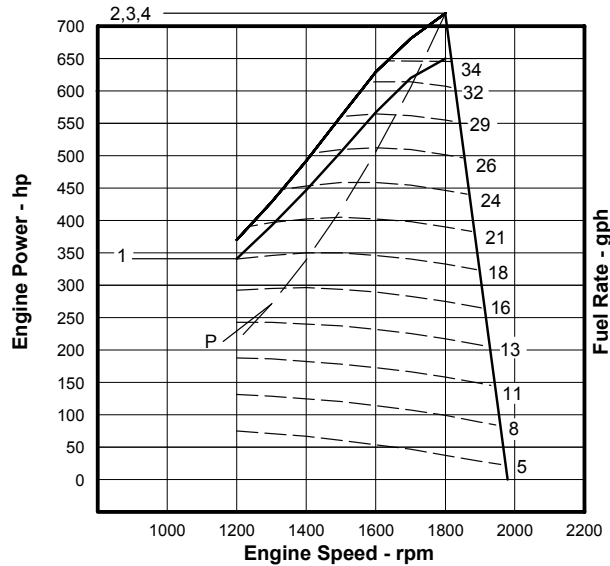
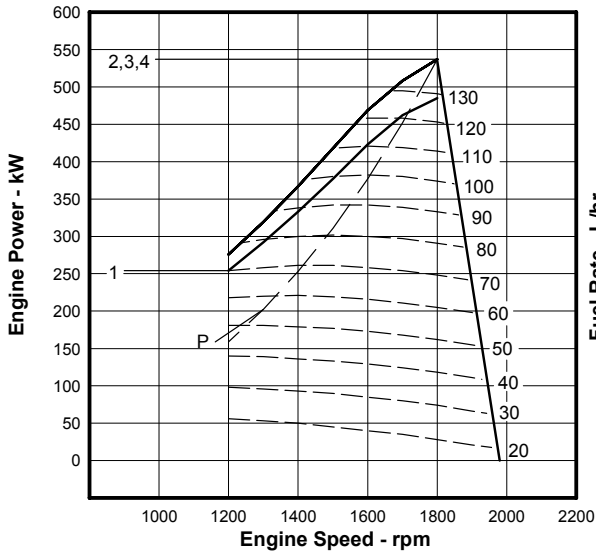
vibration damper and guard, Caterpillar yellow paint, lifting eyes

*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.*

### PERFORMANCE CURVES

B Rating — DM6079-00

IMO Compliant



537 kW

SI Metric

720 bhp

English

**Performance Data**

	Engine Speed rpm	Engine Power kW	BSFC g / kW-h	Fuel Rate L/hr	Boost Press kPa Gauge	Intake Air Flow m <sup>3</sup> /min	Exh Manif Temp °C	Exh Gas Flow m <sup>3</sup> /min
<b>Zone 1</b>	1800	485	220	127.3	115.1	40.3	532	95.4
	1600	423	220	110.9	90.7	32.7	536	80.0
	1500	377	221	99.0	73.9	28.2	536	70.0
	1400	333	223	88.7	59.8	24.4	535	61.4
	1300	292	227	79.1	47.6	21.1	533	53.7
	1200	254	231	70.2	36.9	18.2	530	46.8
<b>Zone 2</b>	1800	537	221	141.6	132.4	43.4	557	104.9
	1600	469	221	123.3	105.7	35.4	561	88.5
	1500	418	221	110.1	86.7	30.4	561	77.3
	1400	367	224	97.7	70.1	26.1	560	67.2
	1300	319	227	86.4	55.4	22.3	558	58.2
	1200	276	232	76.4	43.1	19.1	557	50.6
<b>Zone 3</b>	1800	537	221	141.6	132.4	43.4	557	104.9
	1600	469	221	123.3	105.7	35.4	561	88.5
	1500	418	221	110.1	86.7	30.4	561	77.3
	1400	367	224	97.7	70.1	26.1	560	67.2
	1300	319	227	86.4	55.4	22.3	558	58.2
	1200	276	232	76.4	43.1	19.1	557	50.6
<b>Max Limit</b>	1800	537	221	141.6	132.4	43.4	557	104.9
	1600	469	221	123.3	105.7	35.4	561	88.5
	1500	418	221	110.1	86.7	30.4	561	77.3
	1400	367	224	97.7	70.1	26.1	560	67.2
	1300	319	227	86.4	55.4	22.3	558	58.2
	1200	276	232	76.4	43.1	19.1	557	50.6
<b>Prop Demand</b>	1800	537	221	141.6	132.4	43.4	557	104.9
	1600	377	220	98.9	76.6	30.2	511	72.1
	1500	311	222	82.1	54.7	24.9	493	59.4
	1400	253	225	67.9	38.1	20.8	468	48.9
	1300	202	230	55.4	25.3	17.6	433	40.0
	1200	159	235	44.5	16.0	15.0	393	32.5

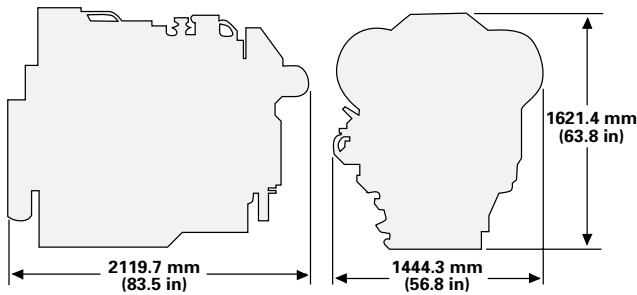
Brake Mean Effective Pressure ..... 1324 kPa  
 Heat Rejection to Coolant (total) ..... 498 kW  
 Heat Rejection to Aftercooler ..... 52 kW  
 Heat Rejection to Exhaust (total) ..... 401 kW  
 Heat Rejection to Atmosphere from Engine ..... 74 kW

**Performance Data**

	Engine Speed rpm	Engine Power hp	BSFC lb/ hp-h	Fuel Rate gph	Boost Press in-hg Gauge	Intake Air Flow cfm	Exh Manif Temp °F	Exh Gas Flow cfm
<b>Zone 1</b>	1800	650	.362	33.6	34.1	1423	990	3369
	1600	567	.362	29.3	26.9	1155	997	2825
	1500	506	.363	26.2	21.9	996	997	2472
	1400	447	.367	23.4	17.7	862	995	2168
	1300	392	.373	20.9	14.1	745	991	1896
	1200	341	.380	18.5	10.9	643	986	1653
<b>Zone 2</b>	1800	720	.363	37.4	39.2	1533	1035	3705
	1600	629	.363	32.6	31.3	1250	1042	3125
	1500	561	.363	29.1	25.7	1074	1042	2730
	1400	492	.368	25.8	20.8	922	1040	2373
	1300	428	.373	22.8	16.4	788	1036	2055
	1200	370	.381	20.2	12.8	675	1035	1787
<b>Zone 3</b>	1800	720	.363	37.4	39.2	1533	1035	3705
	1600	629	.363	32.6	31.3	1250	1042	3125
	1500	561	.363	29.1	25.7	1074	1042	2730
	1400	492	.368	25.8	20.8	922	1040	2373
	1300	428	.373	22.8	16.4	788	1036	2055
	1200	370	.381	20.2	12.8	675	1035	1787
<b>Max Limit</b>	1800	720	.363	37.4	39.2	1533	1035	3705
	1600	629	.363	32.6	31.3	1250	1042	3125
	1500	561	.363	29.1	25.7	1074	1042	2730
	1400	492	.368	25.8	20.8	922	1040	2373
	1300	428	.373	22.8	16.4	788	1036	2055
	1200	370	.381	20.2	12.8	675	1035	1787
<b>Prop Demand</b>	1800	720	.363	37.4	39.2	1533	1035	3705
	1600	506	.362	26.1	22.7	1067	952	2546
	1500	417	.365	21.7	16.2	879	919	2098
	1400	339	.370	17.9	11.3	735	874	1727
	1300	271	.378	14.6	7.5	622	811	1413
	1200	213	.386	11.8	4.7	530	739	1148

Brake Mean Effective Pressure ..... 192 psi  
 Heat Rejection to Coolant (total) ..... 28321 btu/min  
 Heat Rejection to Aftercooler ..... 2957 btu/min  
 Heat Rejection to Exhaust (total) ..... 22805 btu/min  
 Heat Rejection to Atmosphere from Engine ..... 4208 btu/min

## DIMENSIONS



## RATING DEFINITIONS AND CONDITIONS

**B RATING** – Vessels such as midwater trawlers, purse seiners, crew and supply boats, ferries, and towboats where locks, sandbars, and curves dictate frequent slowing, and engine load and speed are constant with some cycling.

**Typical Hours per Year:** 3000 to 5000

**Time at Rated Speed:** up to 80 percent

**Load Factor:** 40-80 percent

**Typical Time at Full Load:** 10 out of 12 hours

**Rated Speed:** 1800 rpm

**Cruise Speed:** 1700 rpm

**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 50°C (122°F) and for sea water temperatures up to and including 42°C (108°F) at sea level.

**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 gal/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.: DM6079-00 (4-4-01)

Materials and specifications are subject to change without notice.

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

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