

**Product News****Cat® C12 ACERT™ Marine Propulsion Engine**

<b>Market</b>	Marine Propulsion
<b>Application</b>	Commercial and Pleasure Craft
<b>Description</b>	The order board for the C12 ACERT™ E rating marine propulsion engine will open on December 15, 2005. The C12 ACERT ratings shown on the next page are EPA Tier II certified and IMO certified. Heat exchanger cooled models are available for both the commercial and pleasure craft markets in the standard configuration, and for the pleasure craft market in the compact configuration.
<b>Availability</b>	Launch Material — December 14, 2005 Order Board Open — December 15, 2005 Production — January 2006 Shipments — February 2006
<b>Pricing Information</b>	See On-Line Price List for C12 MARM effective December 15, 2005

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## C12 ACERT E Ratings

### C12 DITA ACERT Standard Configurations (Pleasure Craft Application)

C12DM41	715 mhp	(705 bhp)	526 bkW	@ 2300 rpm	PQ0948	280-7133	Port
C12DM42	715 mhp	(705 bhp)	526 bkW	@ 2300 rpm	PQ0949	280-7133	Starboard
C12DM37	669 mhp	(660 bhp)	492 bkW	@ 2300 rpm	PQ1164	284-8548	Port
C12DM38	669 mhp	(660 bhp)	492 bkW	@ 2300 rpm	PQ1165	284-8548	Starboard

### C12 DITA ACERT Standard Configurations (Commercial Application)

C12DM43	715 mhp	(705 bhp)	526 bkW	@ 2300 rpm	PQ0983	284-1601	Port
C12DM44	715 mhp	(705 bhp)	526 bkW	@ 2300 rpm	PQ0984	284-1601	Starboard
C12DM19	669 mhp	(660 bhp)	492 bkW	@ 2300 rpm	PQ0313	241-8164	Port
C12DM20	669 mhp	(660 bhp)	492 bkW	@ 2300 rpm	PQ0312	241-8164	Starboard

### C12 DITA ACERT Compact Configurations (Pleasure Craft Application)

C12DM40	715 mhp	(705 bhp)	526 bkW	@ 2300 rpm	PQ0951	280-7134	Port
C12DM39	715 mhp	(705 bhp)	526 bkW	@ 2300 rpm	PQ0950	280-7134	Starboard
C12DM35	669 mhp	(660 bhp)	492 bkW	@ 2300 rpm	PQ0368	247-9907	Port
C12DM36	669 mhp	(660 bhp)	492 bkW	@ 2300 rpm	PQ0369	247-9907	Starboard

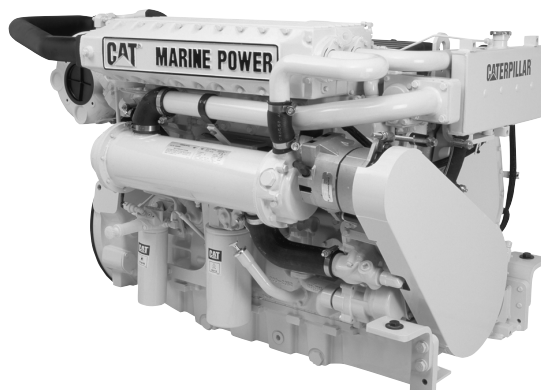
## Specifications

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

Emissions . . . . .	EPA Tier II and IMO Compliant
Displacement . . . . .	12 L (732 cu in)
Bore . . . . .	130 mm (5.1 in)
Stroke . . . . .	150 mm (5.9 in)
Aspiration . . . . .	Turbocharged-Aftercooled
Governor . . . . .	Electronic
Cooling System . . . . .	Heat Exchanger
Engine Weight	
Net Dry (approx) . . . . .	1174 kg (2588 lb)
Length (standard) . . . . .	1573.9 mm (61.96 in)
Length (compact) . . . . .	1329.9 mm (52.36 in)
Width . . . . .	968.6 mm (38.13 in)
Height . . . . .	1008.7 mm (39.71 in)

### Service Publications

Engineering Model . . . . .	E795
Serial Number Prefix . . . . .	C1Z
Parts Book . . . . .	SEBP3554
Installation Guide . . . . .	REHS1187
Service Manual . . . . .	SENR9640
Operation & Maintenance	
Manual . . . . .	SEBU7599
Specifications . . . . .	SENR9642
Systems Operation Testing	
& Adjusting . . . . .	SENR9643
Disassembly & Assembly . . . . .	SENR9644
Schematic . . . . .	RENR8131
Troubleshooting . . . . .	SENR9646



**C12 ACERT™ Marine Propulsion Engine**

# Marine Engine Performance

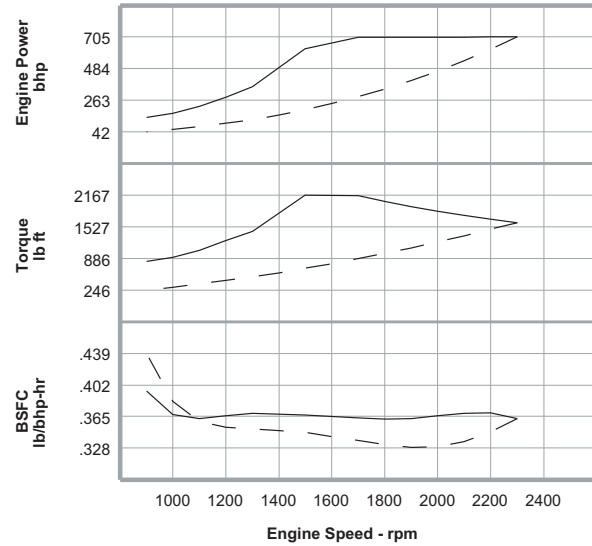
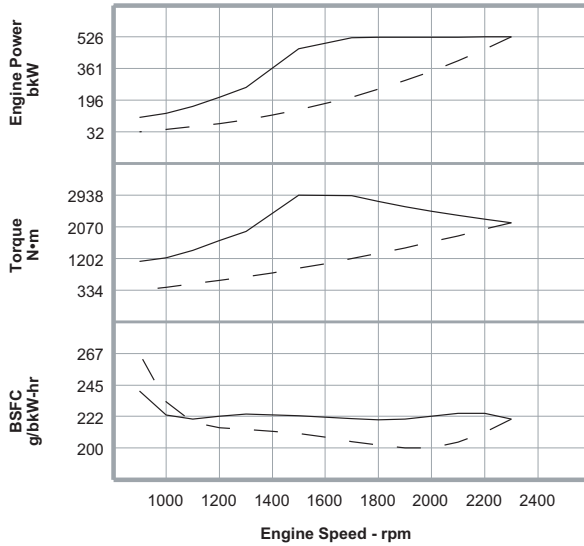
Preliminary

## C12 DITA ACERT

526 kW (705 hp) @ 2300 rpm

E Rating (High Performance) — DM7676-00

EPA Tier II and IMO Compliant



Metric Maximum Power Prop Demand 526 kW

### Preliminary Performance Data

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/bkW-hr	Fuel Rate L/hr
<b>Maximum Power Data</b>	2300	526.0	2184	220.2	138.1
	2200	525.0	2279	224.9	140.7
	2100	523.1	2378	224.5	140.0
	2000	522.0	2493	222.3	138.3
	1900	522.0	2624	220.4	137.1
	1700	521.1	2927	220.8	137.1
	1500	461.5	2938	222.7	122.5
	1300	263.8	1938	223.9	70.4
	1200	211.4	1683	222.2	56.0
	1000	128.3	1225	223.3	34.1
900	105.5	1120	240.5	30.3	
<b>Prop Demand Data</b>	2300	526.0	2184	220.2	138.1
	2200	460.3	1998	210.9	115.7
	2100	400.4	1821	204.0	97.4
	1900	296.5	1490	200.0	70.7
	1800	252.1	1338	202.0	60.7
	1600	177.1	1057	207.7	43.8
	1500	145.9	929	210.4	36.6
	1300	95.0	698	213.0	24.1
	1200	74.7	594	214.2	19.1
	1000	43.2	413	232.9	12.0
900	31.5	334	266.8	10.0	

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

English Maximum Power Prop Demand 705 bhp

### Preliminary Performance Data

	Engine Speed rpm	Engine Power bhp	Engine Torque lb ft	BSFC lb/bhp-hr	Fuel Rate gph
<b>Maximum Power Data</b>	2300	705.4	1611	.362	36.5
	2200	704.0	1681	.370	37.2
	2100	701.5	1754	.369	37.0
	2000	700.0	1839	.365	36.5
	1900	700.0	1935	.362	36.2
	1700	698.8	2159	.363	36.2
	1500	618.9	2167	.366	32.4
	1300	353.8	1429	.368	18.6
	1200	283.5	1241	.365	14.8
	1000	172.1	903	.367	9.0
900	141.5	826	.395	8.0	
<b>Prop Demand Data</b>	2300	705.4	1611	.362	36.5
	2200	617.3	1474	.347	30.6
	2100	536.9	1343	.335	25.7
	1900	397.6	1099	.329	18.7
	1800	338.1	987	.332	16.0
	1600	237.5	780	.341	11.6
	1500	195.7	685	.346	9.7
	1300	127.4	515	.350	6.4
	1200	100.2	438	.352	5.0
	1000	57.9	305	.383	3.2
900	42.2	246	.439	2.6	

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.

# Marine Engine Performance

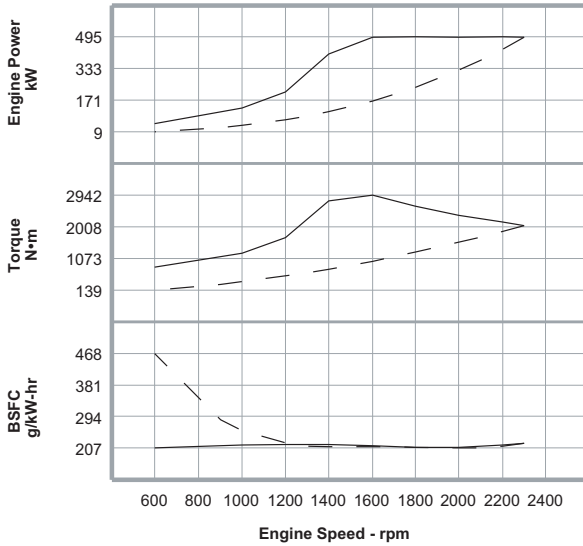
Preliminary

## C12 DITA ACERT

492 bkW (660 bhp) @ 2300 rpm

E Rating (High Performance) — DM7530-01

EPA Tier II and IMO Compliant

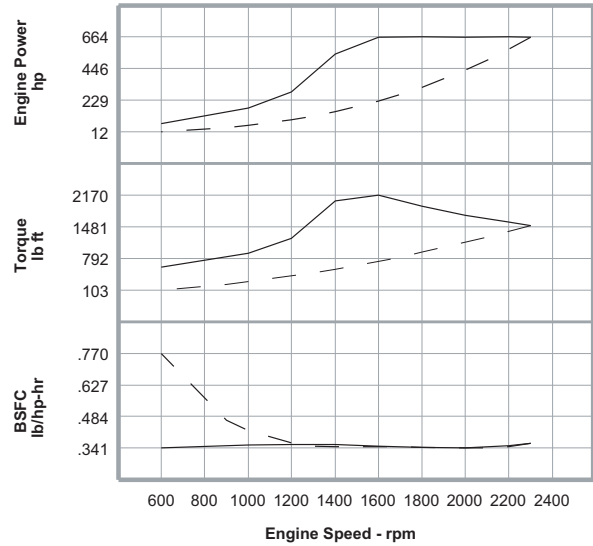


Metric Maximum Power  
Prop Demand 492 kW

### Preliminary 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>	2300	492.0	2043	220.0	129.0
	2200	494.9	2148	214.1	126.3
	2000	492.7	2353	208.0	122.2
	1800	493.8	2620	208.9	123.0
	1600	493.0	2942	212.6	124.9
	1400	406.3	2771	216.1	104.7
	1200	210.4	1675	216.3	54.3
	1000	128.2	1225	214.5	32.8
	600	50.9	810	206.9	12.5
	<b>Prop Demand Data</b>	2300	492.0	2043	220.0
2200		430.6	1869	211.2	108.4
2100		374.5	1703	207.0	92.4
2000		323.5	1545	206.6	79.7
1800		235.8	1251	209.1	58.8
1600		165.6	989	210.7	41.6
1400		111.0	757	210.1	27.8
1300		88.8	653	212.2	22.5
1200		69.9	556	220.8	18.4
900		29.5	313	283.8	10.0
600	8.7	139	468.5	4.9	

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



English Maximum Power  
Prop Demand 660 hp

### Preliminary Performance Data

	Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph
<b>Maximum Power Data</b>	2300	659.8	1507	.362	34.1
	2200	663.7	1584	.352	33.4
	2000	660.7	1735	.342	32.3
	1800	662.2	1932	.343	32.5
	1600	661.1	2170	.350	33.0
	1400	544.9	2044	.355	27.7
	1200	282.2	1235	.356	14.3
	1000	171.9	903	.353	8.7
	600	68.3	597	.340	3.3
	<b>Prop Demand Data</b>	2300	659.8	1507	.362
2200		577.4	1378	.347	28.6
2100		502.2	1256	.340	24.4
2000		433.8	1139	.340	21.1
1800		316.2	923	.344	15.5
1600		222.1	729	.346	11.0
1400		148.9	558	.345	7.3
1300		119.1	482	.349	5.9
1200		93.7	410	.363	4.9
900		39.6	231	.467	2.6
600	11.7	103	.770	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.

## Standard Equipment

### Air Inlet System

Corrosion resistant sea water aftercooler, air cleaner/fumes disposal (closed system), jacket water cooled turbocharger

### Control System

Electronic governing, cold mode start strategy, power compensation for fuel temperature, programmable low idle, electronic diagnostics and fault logging, engine and transmission monitoring (speed, temperature, pressure), fuel/air ratio control

### Cooling System

Thermostat and housing, gear-driven jacket water pump, self-priming, gear-driven sea water pump with rubber impeller, integral heat exchanger/expansion tank with removable tube bundle and replaceable copper-nickel tubes

### Exhaust System

Watercooled exhaust manifold and turbocharger

### Flywheels & Flywheel Housings

SAE No. 1 flywheel, 113 teeth, SAE No. 1 flywheel housing (10 degree slant pad), SAE standard rotation

### Fuel System

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

### Instrumentation

Electric service meter

### Lube System

Crankcase breather, oil cooler, spin-on oil filter, RH service on port, LH service on starboard, center sump oil pan, oil filler, dipstick, RH service on port, LH service on starboard, gear-driven oil pump

### Mounting System

Front support

### Power Take-Offs

Hydraulic pump drive, SAE A, 11 tooth spline, 57 ft-lbs max torque, counterclockwise as viewed from rear of the engine looking into the pump drive and turns 1.41 x engine speed, 345 mm crankshaft pulley, 15.88 mm width single groove

### Protection System

12 or 24 volt electronic shutdown (energized-to-run)

### General

Vibration damper, lifting eyes, RH or LH service options, literature, variable engine wiring, upper rear-facing customer wiring connector and ECAP connection, electronic installation kit (connectors, pins, sockets)

### ISO Certification

Factory-designed systems built at Caterpillar ISO9001:2000 certified facilities

## Optional Attachments

### Air Inlet System

Low profile air inlet line  
Shield (air inlet line)

### Charging System

Battery charger, 10 amp  
Charging alternators — 12V, 105 amp  
Charging alternators, 24V, 60 amp  
Voltmeter gauges, 12V and 24V  
Voltmeter gauge mounting  
Alternator mounting group

### Cooling System

Sea water pump  
Coolant recovery tank  
Flange kit

### Exhaust System

Flexible fitting  
Elbows  
Pipe  
Flange  
Rain cap  
Muffler

### Fuel System

Fuel cooler  
Fuel connections  
Primary fuel filter  
Primary fuel/water separator

### Instrumentation

OEM wiring harness  
Engine to engine harness  
Gauges and instrument panels

### Lube System

Manual sump pumps  
Transmission oil coolers

### Mounting System

Vibration isolation mounting

### Power Take-Offs

Crankshaft pulleys  
Front stub shafts

### Starting System

Air starting motor  
Air pressure regulator  
Air silencer  
Start switches  
Electric starting motors  
Starting aids  
Battery sets — 24V (dry)

### General

Wiring conversion  
Belt guards  
Filter cover kit

### Literature

Optional literature (other languages  
than English)  
Extra literature (English and other languages)

### Decals

Decals for all engines

### Packing

Overseas preservation  
Engine protective cover  
Storage preservation  
Export packing

## Features and Benefits

- IMO and EPA Tier II Compliant
  - Pleasure craft ratings certified to 2006 EPA Marine Tier II Recreational Emissions Standards
  - Commercial ratings certified to 2004 EPA Marine Tier II Commercial Emissions Standards
- Available in standard configurations (pleasure craft and commercial) and compact configurations (pleasure craft)
- Less visible white or black smoke
- Lower compression ratio, resulting in less steady state smoke
- Improved transient response
- Same dimensions as current C12
- Standard Caterpillar warranty
- Parts and service support from worldwide dealer organization