

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

Market	Marine Propulsion
Application	Commercial and Pleasure Craft
Description	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.
Availability	Launch Material — December 14, 2005 Order Board Open — December 15, 2005 Production — January 2006 Shipments — February 2006
Pricing Information	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

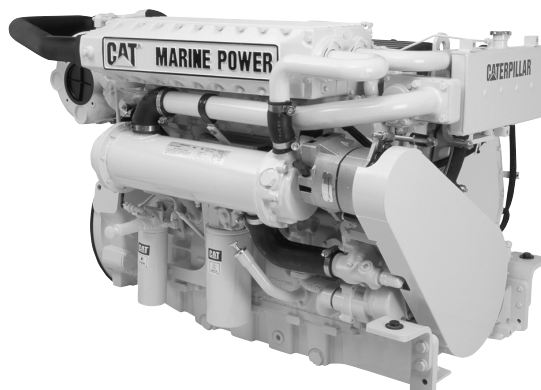
Specifications

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

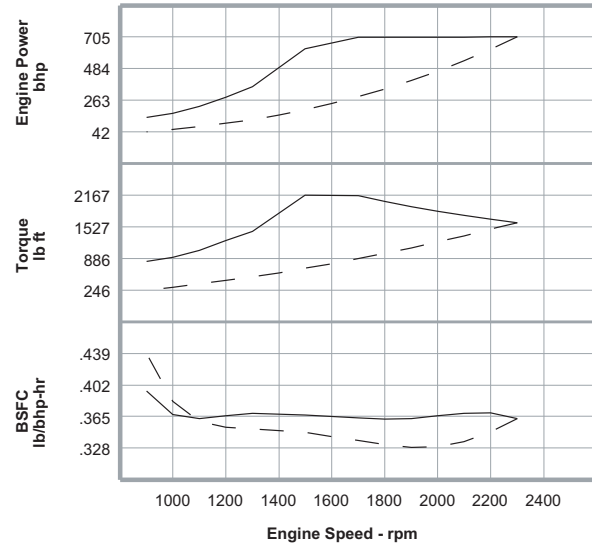
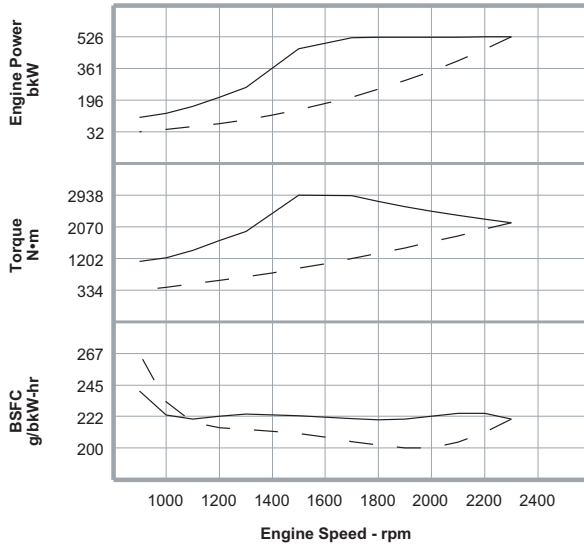
Preliminary

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
Maximum Power Data	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	
Prop Demand Data	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
Maximum Power Data	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	
Prop Demand Data	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

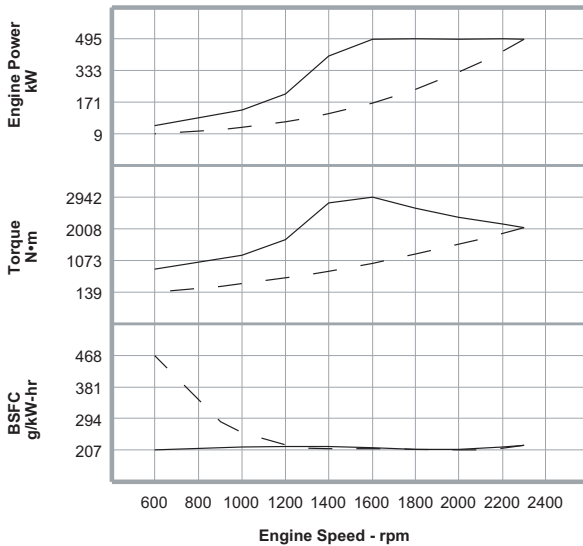
Preliminary

C12 DITA ACERT

492 bkW (660 bhp) @ 2300 rpm

E Rating (High Performance) — DM7530-01

EPA Tier II and IMO Compliant

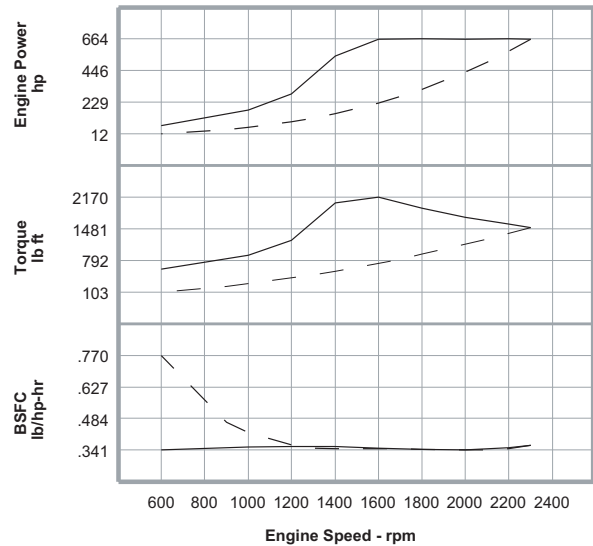


Metric Maximum Power
Prop Demand 492 kW

Preliminary Performance Data

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
Maximum Power Data	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
	Prop Demand Data	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
Maximum Power Data	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
	Prop Demand Data	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