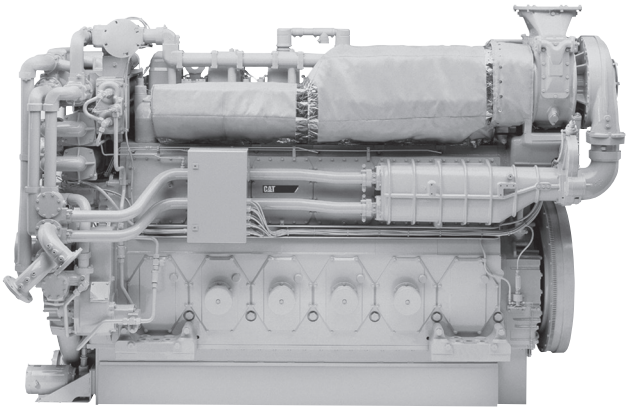
CATERPILLAR®

C280-6 MARINE PROPULSION

2584 mhp
(2548 bhp)
1900 bkW



Shown with
Accessory Equipment

SPECIFICATIONS

In-Line 6, 4-Stroke-Cycle-Diesel

Emissions	IMO II/EPA Tier 2 compliant
Displacement	111 L (6,773 cu. in.)
Low Idle Speed	350 rpm
Rated Speed	900 rpm
Bore	280 mm (11.0 in.)
Stroke	300 mm (11.8 in.)
Compression Ratio	13:1
Aspiration	Turbocharged-Aftercooled
Governor	Electronic
Cooling System	Keel or Heat Exchanger
Weight, Dry	15,682 kg (34,574 lbs)
Refill Capacities	
Cooling System	900-1075 L (238-284 gal)
Lube Oil System	697 L (184 gal)
Oil Change Interval*	1025 hours
Rotation (from flywheel end)	CCW or CW
Serial Number Prefix	SCB

*A new S•O•S℠ analysis must be done to determine actual oil change intervals.

STANDARD ENGINE EQUIPMENT

Air Intake and Exhaust System
Charge air cooler, air inlet shutoff, high flow turbocharger, dry manifold with soft or hard shielding

Basic Engine Arrangement
In-line engine with one-piece grey iron cylinder block, individual cylinder heads with four intake/exhaust valves, right- or left-hand service side available

Control System
Dual ADEM™ A3 electronic engine control unit (ECU) with electronic unit injector fuel system, rigid wiring harness (10 amp, 24 volt power required to drive ECU)

Cooling System
Single or combined system, engine mounted freshwater and seawater pumps, engine coolant water drains

Fuel System
Engine operates on MDO; fuel injection system consists of engine-driven fuel transfer pump and an electronic unit injector for each cylinder, engine-mounted duplex fuel filters, and flexible connections

Lube Oil System
Top-mounted crankcase breather, two centrifugal oil filters with single shutoff, gear-driven pump, duplex oil filter, crankcase explosion relief, oil filler and dipstick

Monitoring, Alarm, and Safety Control System
Alarms and shutdowns provided as required by marine society for unmanned machinery spaces. Marine Monitoring System II [listed as Programmable Logic Control (PLC) in the Price List] or Engine Control Panel are available; systems include temperature, pressure, and speed sensors; optional: oil mist detector or particle detector available

ECU Functions
Key-switch, desired engine speed, programmable low idle, SAE J1939 data link, Cat® data link, Messenger (displays engine data, diagnostics, etc.), diagnostics, general alarm, programmable parameters (system, application, and tattletales), Cat ET service tool interface, remote shutdown, shutdown notify, load feedback, overspeed shutdown, overspeed verify, engine power correction, droop, dual dynamics

General
Four lifting eyes mounted to cylinder heads, Cat yellow paint, parts books and maintenance manuals, shrink wrap

Optional Supplied Equipment
Torsional coupling, fresh water heat exchanger, fuel cooler, expansion tank, emergency pumps and connections, jacket water heater, flexible connections, and anti-vibration isolators

MARINE ENGINE PERFORMANCE

C280-6 DIESEL ENGINE TECHNICAL DATA

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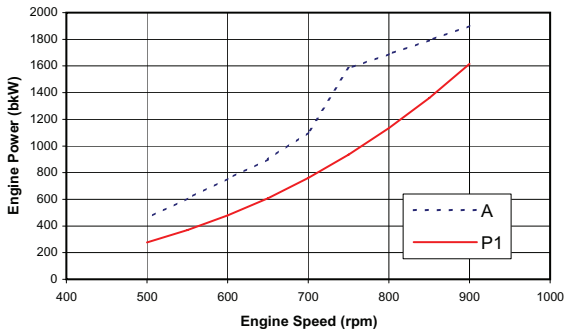
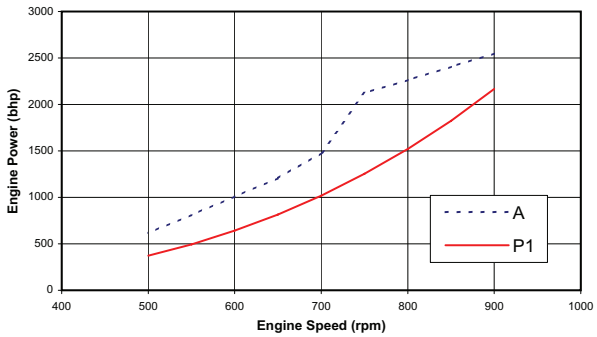
RATED SPEED (RPM):	900	ENGINE RATING:	**Marine MCR**
RATED POWER[1] (bkW):	1900	CERTIFICATION[5]:	IMO II/EPA MARINE TIER II
BMEP @ 100% LOAD (kPa):	2286	TURBOCHARGER PART #:	157-5514
COMPRESSION RATIO:	13:1	COMBUSTION:	DI
AFTERCOOLER WATER (°C):	32	FUEL TYPE:	Distillate
JACKET WATER OUTLET (°C):	90	EXHAUST MANIFOLD:	DRY
IGNITION SYSTEM:	EUI	MEAN PISTON SPEED (m/s):	9
FIRING PRESSURE, MAXIMUM (kPa):	17300		

Engine Performance





ZONE LIMIT DATA

	Engine Speed rpm	Power bkW	Fuel Cons[3] g/ kW-hr	Fuel Rate L/hr	Boost Press kPa Gauge	Air Flow[4] cu m/ Min	Exh Temp to Turbo C	Exh Stack Temp C	Exh Flow cu m/ min
Curve A	900	1900	203	459.8	266	175.1	563	384	382.1
	850	1794	205	438.4	268	167.7	561	386	366.9
	800	1689	205	412.7	247	152.0	579	408	344.2
	750	1583	204	384.9	214	131.8	613	448	316.6
	700	1100	208	272.7	129	87.2	620	474	217.5
	650	900	211	226.4	90	67.3	641	491	172.3
	600	753	216	193.9	67	54.9	650	496	141.8
	550	606	221	159.6	47	44.5	629	478	112.1
	500	460	224	122.9	28	35.1	576	430	82.8

PROPELLER DEMAND DATA

	Engine Speed rpm	Power bkW	Fuel Cons[3] g/ kW-hr	Fuel Rate L/hr	Boost Press kPa Gauge	Air Flow[4] cu m/ Min	Exh Temp to Turbo C	Exh Stack Temp C	Exh Flow cu m/ min
Optimum Load	900	1615	213	409.8	255	168.9	547	378	364.2
(Curve P1)	850	1361	215	347.9	219	143.0	547	393	315.7
	800	1134	211	285.1	158	109.3	551	414	249.4
	750	935	211	235.1	109	83.5	565	431	195.6
	700	760	214	194.0	75	65.5	571	437	155.1
	650	608	218	158.1	51	52.4	557	430	122.8
	600	479	221	125.9	33	42.4	523	403	95.5
	550	369	222	97.4	20	34.6	473	357	72.5
	500	277	223	73.6	11	28.5	412	302	54.4

ZONE LIMIT DATA

	Engine Speed rpm	Power bhp	Fuel Cons[3] lb/ hp-hr	Fuel Rate gal/hr	Boost Press in Hg-Gauge	Air Flow[4] cfm	Exh Temp to Turbo F	Exh Stack Temp F	Exh Flow cfm
Curve A	900	2548	0.334	121.4	79	6184	1045	723	13495
	850	2406	0.338	115.7	79	5921	1042	727	12957
	800	2265	0.338	109.0	73	5369	1074	766	12157
	750	2123	0.336	101.6	63	4654	1135	838	11182
	700	1475	0.342	72.0	38	3079	1148	885	7683
	650	1207	0.347	59.8	27	2377	1186	916	6083
	600	1010	0.356	51.2	20	1940	1202	925	5006
	550	813	0.364	42.2	14	1570	1164	892	3960
	500	617	0.369	32.5	8	1240	1069	806	2924

PROPELLER DEMAND DATA

	Engine Speed rpm	Power bhp	Fuel Cons[3] lb/ hp-hr	Fuel Rate gal/hr	Boost Press in Hg-Gauge	Air Flow[4] cfm	Exh Temp to Turbo F	Exh Stack Temp F	Exh Flow cfm
Optimum Load	900	2166	0.350	108.2	75	5965	1016	712	12863
(Curve P1)	850	1824	0.353	91.8	65	5052	1016	739	11149
	800	1521	0.347	75.3	47	3860	1023	777	8806
	750	1253	0.347	62.1	32	2949	1048	807	6907
	700	1019	0.353	51.2	22	2313	1059	819	5477
	650	816	0.359	41.7	15	1850	1034	805	4335
	600	642	0.363	33.2	10	1497	973	757	3372
	550	494	0.365	25.7	6	1221	884	674	2559
	500	371	0.367	19.4	3	1007	774	575	1921

Heat Rejection @ 100% Load and 25° C Air

Lube Oil Cooler	kW	(Btu/min)	191	(10875)
Jacket Water	kW	(Btu/min)	385	(21930)
AfterCooler	kW	(Btu/min)	536	(30495)
Total Heat Rejection to Raw Water	kW	(Btu/min)	1112	(63300)
Exhaust Gas[2]	kW	(Btu/min)	1379	(78465)
Radiation	kW	(Btu/min)	92	(5235)

Notes

1 Ratings are based on ISO 3046/1 and SAEJ1995 Jan 90 standard reference conditions of 100 kPa, 25° C, and 30% relative humidity at the stated aftercooler water temperature.

2 Exhaust Heat rejection is based on fuel LHV and is not normally recoverable in total

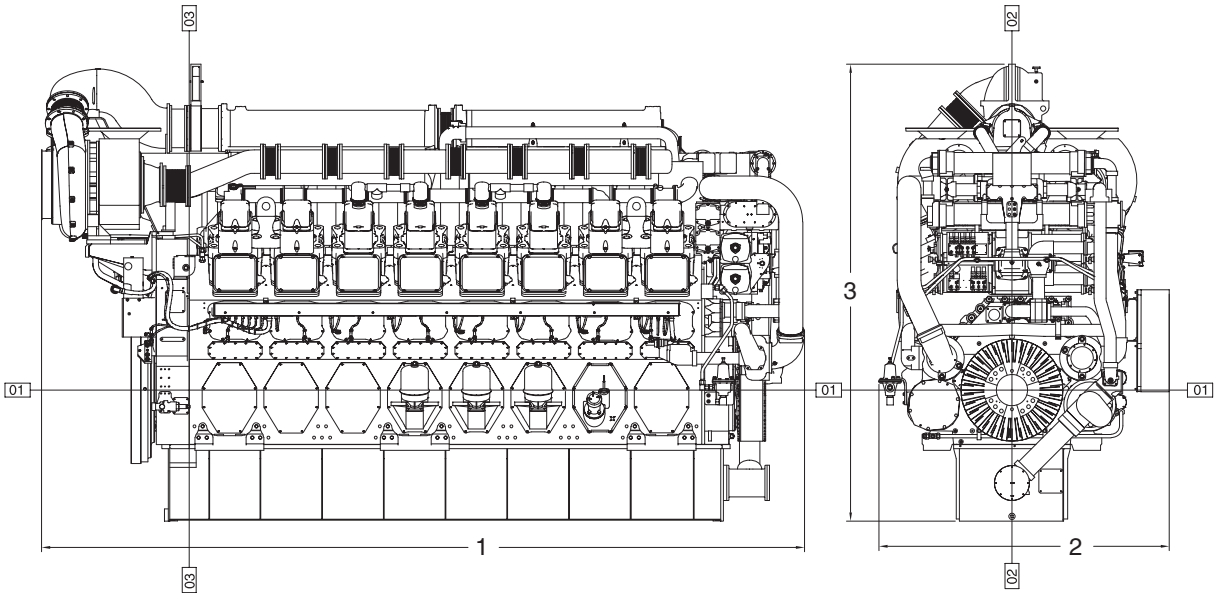
3 At 100% load with JW and Oil pumps, without seawater pump, +/- 3%. Performance and fuel consumption are based on 35 API, 16°C fuel having a lower heating value of 42,780 kJ/kg used at 29°C with a density of 838.9 g/liter.

4 Air flows are shown for 25°C air inlet to the turbocharger and 32°C cooling water to the charge air cooler.

5 This engine's exhaust emissions are in compliance with the INTERNATIONAL MARINE ORGANIZATION'S (IMO) standard as described in REGULATION 13 of ANNEX VI of MARPOL 73/78 and ISO 8178 for measuring HC, CO, PM, and NOx.

DM8391-01 **3/4/10**

ENGINE DIMENSIONS



Engine Dimensions		
(1) Overall Length	4011 mm	157.9 in.
(2) Overall Width	1796 mm	70.7 in.
(3) Overall Height	2734 mm	107.6 in.

Note: Do not use for installation design. See general dimension drawings for detail.

Engine Weights		
Engine Dry Weight	15,682 kg	34,574 lb
Shipped Loose Items		
Torsional Coupling	319 kg	702 lb
Plate-Type Heat Exchanger	400 kg	880 lb
Instrument/Alarm Panel	200 kg	440 lb
Fluids		
Lube Oil	634 kg	1,395 lb
Jacket Water	400 kg	880 lb
Heat Exchanger (FW, SW, LO)	70 kg	154 lb

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C280-6 MARINE PROPULSION

2584 mhp (2548 bhp) 1900 bkW

RATING DEFINITIONS AND CONDITIONS

Maximum Continuous Rating — 8% of the engine operating hours at 100% of rated power, 92% of the engine operating hours at 90% of rated power.

Ratings are based on SAE J1995/ISO3046 standard conditions of 100 kPa (29.61 in. Hg), 25°C (77°F), and 30% relative humidity at the stated charge air cooler water temperature. Ratings also meet classification society maximum temperature requirements of 45°C (113°F) air temperature to the turbocharger and 32°C (90°F) seawater temperature without derate.

Additional ratings may be available for specific customer requirements. Consult your Cat representative for additional information.

Fuel rates are based on 35° API, 16°C (60°F) fuel used at 29°C (85°F) with a density of 838.9 g/liter (7.001 lbs/U.S. gal). Lower Heat Value (LHV) of 42 780 kJ/kg (18,390 Btu/lb). Tolerance is +5%. Includes all engine mounted pumps. BSFC without pumps is 3% less.

Marine Certification — Ratings are marine classification society approved by ABS, BV, CCS, DnV, GL, KR, LRS, NKK, RINA, and RS. These societies have also granted C280 factory line production approval which eliminates requirement for society surveyor witness test.

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.

Power produced at the flywheel will be within standard tolerances up to 49°C (120°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.

TMI Reference No.: DM8391-01

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