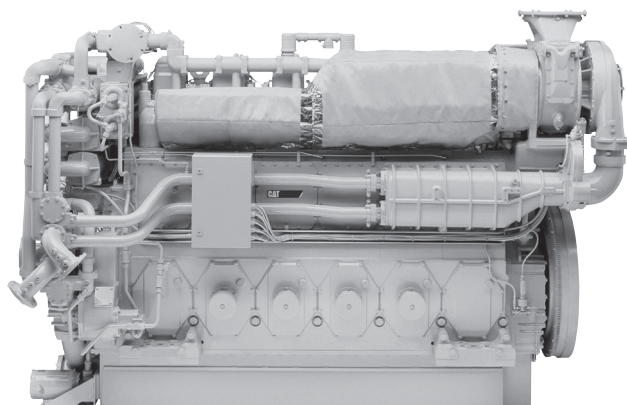




Shown with
Accessory Equipment

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	1000 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•SSM 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

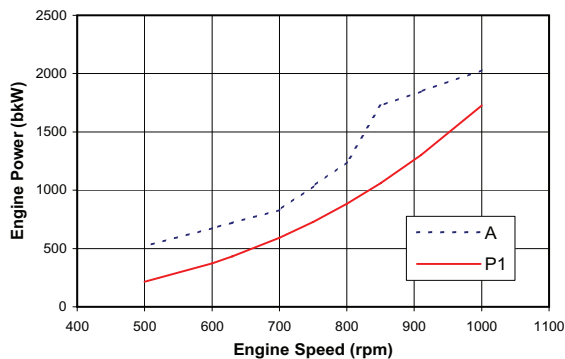
DIESEL ENGINE TECHNICAL DATA



RATED SPEED (RPM): 1000
 RATED POWER¹ (bkW): 2030
 BMEP @ 100% LOAD (kPa): 2198
 COMPRESSION RATIO: 13:1
 AFTERCOOLER WATER (°C): 32
 JACKET WATER OUTLET (°C): 90
 IGNITION SYSTEM: EUI
 FIRING PRESSURE, MAXIMUM (kPa): 17300

ENGINE RATING: **Marine MCR**
 CERTIFICATION⁵: IMO II/EPA MARINE TIER II
 TURBOCHARGER PART #: 189-4427
 COMBUSTION: DI
 FUEL TYPE: Distillate
 EXHAUST MANIFOLD: DRY
 MEAN PISTON SPEED (m/s): 10

Engine Performance

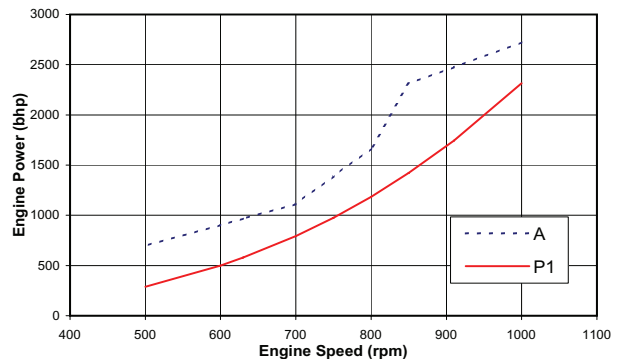


ZONE LIMIT DATA

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
1000	2030	206	498.5	254	191.6	541	379	414.7
910	1847	209	460.2	248	167.1	559	390	368.5
850	1725	203	417.5	216	144.3	554	406	326.4
800	1240	202	298.6	125	99.6	560	442	237.5
750	1035	207	255.4	92	82.7	539	460	202.4
700	830	209	206.8	66	65.8	524	461	161.4
630	722	211	181.6	55	55.7	524	472	138.8
600	675	215	173.0	51	52.3	523	476	131.2
500	520	226	140.1	37	46.4	505	478	116.3

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
1000	1726	213	438.2	223	168.8	519	372	361.4
910	1301	206	319.4	165	124.1	516	394	274.6
850	1060	214	270.4	110	96.2	514	423	222.9
800	884	212	223.3	78	77.6	502	432	182.3
750	728	210	182.3	56	65.0	481	427	151.4
700	592	223	157.4	43	54.9	465	417	126.1
630	432	217	111.6	28	43.0	417	386	94.2
600	373	223	99.1	18	39.7	387	366	84.1
500	216	232	59.7	12	36.3	321	298	68.0



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
1000	2722	0.339	131.6	75	6765	1006	714	14645
910	2477	0.344	121.5	73	5901	1038	734	13013
850	2314	0.334	110.2	64	5096	1029	763	11528
800	1663	0.333	78.8	37	3517	1040	828	8387
750	1388	0.341	67.4	27	2921	1002	860	7148
700	1113	0.344	54.6	20	2325	975	862	5700
630	968	0.347	47.9	16	1967	975	882	4902
600	905	0.354	45.7	15	1848	973	889	4632
500	697	0.372	37.0	11	1639	941	892	4107

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
1000	2315	0.351	115.7	66	5960	966	702	12764
910	1744	0.339	84.3	49	4381	961	741	9699
850	1421	0.352	71.4	33	3397	957	793	7870
800	1185	0.349	59.0	23	2742	936	810	6438
750	976	0.346	48.1	17	2295	898	801	5346
700	794	0.367	41.6	13	1937	869	783	4452
630	579	0.357	29.5	8	1520	783	727	3325
600	500	0.367	26.2	5	1401	729	691	2968
500	289	0.382	15.8	4	1281	610	568	2403

Heat Rejection @ 100% Load and 25° C Air

Lube Oil Cooler	kW (Btu/min)	212 (12063)
Jacket Water	kW (Btu/min)	402 (22874)
AfterCooler	kW (Btu/min)	613 (34880)
Total Heat Rejection to Raw Water	kW (Btu/min)	1227 (69816)
Exhaust Gas ²	kW (Btu/min)	1228 (69873)
Radiation	kW (Btu/min)	99 (5633)

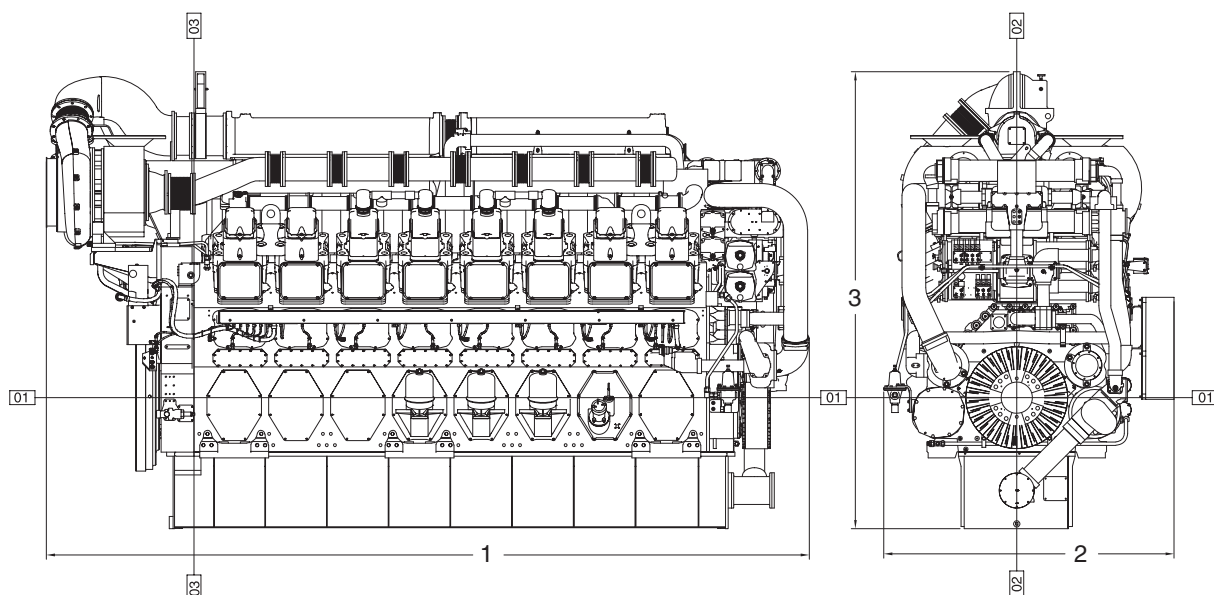
Notes

- 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.
- Exhaust Heat rejection is based on fuel LHV and is not normally recoverable in total
- 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.
- Air flows are shown for 25°C air inlet to the turbocharger and 32°C cooling water to the charge air cooler.
- 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.

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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

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.

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