CATERPILLAR®

C18 ACERT™ MARINE AUXILIARY/GENERATOR SET ENGINE

465 bkW
624 (bhp)

PRIME **60 Hz, 1800 rpm**

Image is a representation only, and may not show optional attachments.

SPECIFICATIONS

I-6, 4-Stroke-Cycle-Diesel

Emissions . . . . . EPA Tier 2 compliant, IMO certified
Displacement . . . . . 18.1 L (1106 cu. in.)
Rated Engine Speed . . . . . 1800 rpm
Bore . . . . . 145 mm (5.71 in.)
Stroke. . . . . 183 mm (7.2 in.)
Aspiration . . . . . Turbocharged-Aftercooled
Governor . . . . . Electronic (A4)
Cooling System . . . . . Keel or Heat Exchanger
Weight, Net Dry (approx) . . 1802-2070 kg (3974-4565 lbs)
Refill Capacity
  Cooling System . . . . . 45 L (12 gal)
  Lube Oil System . . . . . 49 L (13 gal)
Oil Change Interval . . . . . 250 hr
Rotation (from flywheel end) . . . . . Counterclockwise
Flywheel and flywheel housing . . . . . SAE No. 0
Flywheel Teeth. 136
Max. Exhaust Backpressure . . . . . 10 kPa (40 in. water)

STANDARD EQUIPMENT

Air Inlet System
Corrosion-resistant sea water aftercooler core, air cleaner/fumes disposal (closed system), jacket water cooled turbocharger, turbocharger inlet OD straight connection

Control System
Electronic governing (A4 ECU), electronic throttle position sensor, programmable low idle, electronic diagnostics and fault logging, fuel/air ratio control

Cooling System
Gear-driven jacket water pump, block heater, 1500W, 120V AC current; gear-driven, bronze impeller, sea water pump; separate circuit keel cooling or titanium plate heat exchanger (with expansion tank and coolant recovery system)

Exhaust System
Watercooled exhaust manifold and turbocharger, ID round-flanged outlet

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

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

Mounting System
Front support — adjustable

Power Take-Offs
Hydraulic pump drive, SAE A, 11 tooth spline, 46 ft-lbs. max. torque, counterclockwise as viewed from the front of the engine looking into the drive, turning 1.41 times engine speed; crankshaft pulley, 292 mm (11.5 in) two-groove, 15.88 mm (.63 in) wide

Protection System
Shutdown — electronic, 12 or 24V

General
Torsional vibration damper, lifting eyes, variable engine wiring, RH or LH service options, literature, upper rear-facing customer wiring connector, service tool connection, electronic installation kit

ISO Certification
Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities.

OPTIONAL ATTACHMENTS

Air Inlet System
Aftercooler condensate drain

Charging System
Battery charger, 10 amp; charging alternators, 24V, 60 amp, RH or LH; ammeter gauge, 24V

Exhaust System
Dry elbows, watercooled elbows, flexible fitting, exhaust outlet flange

Fuel System
Fuel cooler, duplex fuel filter, primary fuel/water separator

Instrumentation
Wiring for multiple stations of Marine Power Display (MPD); gauges and instrument panels; wiring group (MPD); digital tachometer, magnetic pickup; MPD system

Lube System
Manual sump pumps, duplex oil filters, deep sump oil pan

Power Take-Offs
Crankshaft pulleys and damper, stub shafts

Starting System
Air starting motor, air start accessories (air pressure regulator and air start silencer), electric starting motors, jacket water heater — 240V, battery sets — 24V (dry)

General
Bilge pump drive, damper guards, tool set, wiring harness removal, filter cover kit, tool set

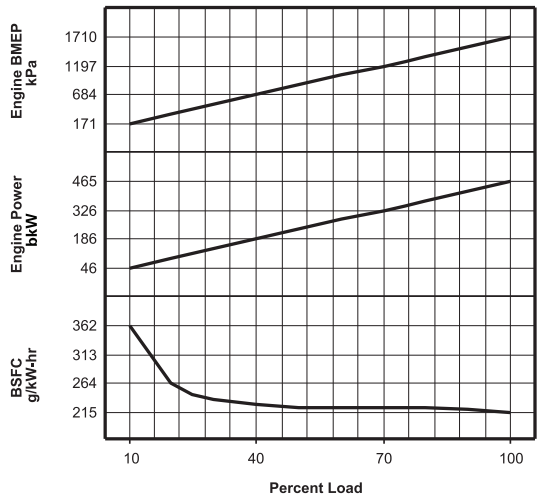
Literature
Optional literature (other languages than English), extra literature (English and other languages)

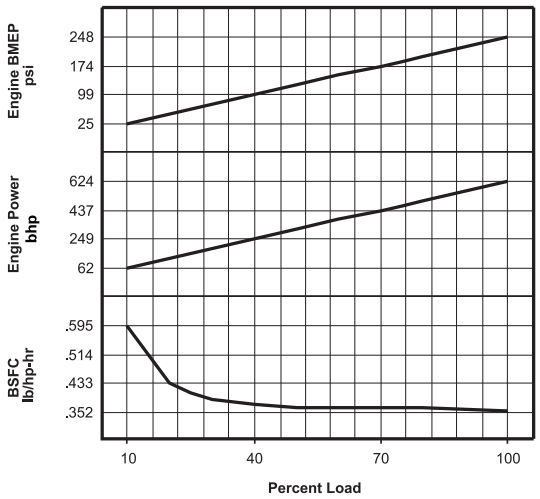
Packing
Overseas preservation, engine protective cover, storage preservation, export packing

PERFORMANCE DATA

465 bkW (624 bhp) @ 1800 rpm
MA Rating — DM9676-00

IMO Tier 2 Certified





Engine Power bkW	Percent Load	Engine BMEP kPa	BSFC g/kW-hr	Fuel Rate L/hr
465.0	100	1710	215	119.1
418.5	90	1539	219	109.1
372.0	80	1368	222	98.5
348.8	75	1282	222	92.4
325.5	70	1197	222	86.3
279.0	60	1026	222	74.0
232.5	50	855	223	61.9
186.0	40	684	227	50.3
139.5	30	513	236	39.3
116.3	25	427	246	34.0
93.0	20	342	263	29.2
46.5	10	171	362	20.1

Engine Power bkW	Intake Manifold Temp °C	Intake Manifold Pressure kPa	Intake Air Flow m³/min	Exh Manifold Temp °C	Exh Stk Temp °C	Exh Gas Flow m³/min
465.0	56.4	166.7	35.30	600.4	450.3	90.20
418.5	55.3	153.7	33.70	583.7	442.1	84.90
372.0	54.0	137.2	31.60	566.1	433.7	78.60
348.8	53.3	125.5	30.10	554.7	428.4	74.20
325.5	52.5	113.7	28.50	541.8	422.1	69.70
279.0	50.8	90.2	25.50	511.2	406.5	60.80
232.5	48.5	67.9	22.50	471.2	383.8	52.10
186.0	45.6	48.6	20.00	423.0	352.1	44.10
139.5	42.4	31.9	17.90	370.4	314.2	36.80
116.3	40.6	25.0	17.00	343.0	293.3	33.60
93.0	38.9	19.6	16.30	315.3	271.3	30.90
46.5	35.1	11.8	15.40	257.6	223.4	26.40

Heat Rejection Data

Engine Power bkW	Percent Load	Rej to JW kW	Rej to Atmos kW	Rej to Exh kW	From Oil Clr kW
465.0	100	327.0	35.9	368.0	63.7
418.5	90	305.0	32.8	342.0	58.3
372.0	80	281.0	29.6	313.0	52.6
348.8	75	266.0	27.8	295.0	49.3
325.5	70	251.0	25.9	276.0	46.0
279.0	60	220.0	22.2	238.0	39.4
232.5	50	189.0	18.6	199.0	33.0
186.0	40	159.0	15.1	163.0	26.8
139.5	30	130.0	11.8	129.0	20.9
116.3	25	117.0	10.2	114.0	18.1
93.0	20	103.0	8.7	101.0	15.5
46.5	10	82.0	6.5	75.0	10.7

Engine Power bhp	Percent Load	Engine BMEP psi	BSFC lb/hp-hr	Fuel Rate gph
623.6	100	248	.353	31.5
561.2	90	223	.360	28.8
498.9	80	198	.365	26.0
467.7	75	186	.365	24.4
436.5	70	174	.365	22.8
374.1	60	149	.366	19.5
311.8	50	124	.367	16.4
249.4	40	99	.373	13.3
187.1	30	74	.388	10.4
156.0	25	62	.404	9.0
124.7	20	50	.433	7.7
62.4	10	25	.595	5.3

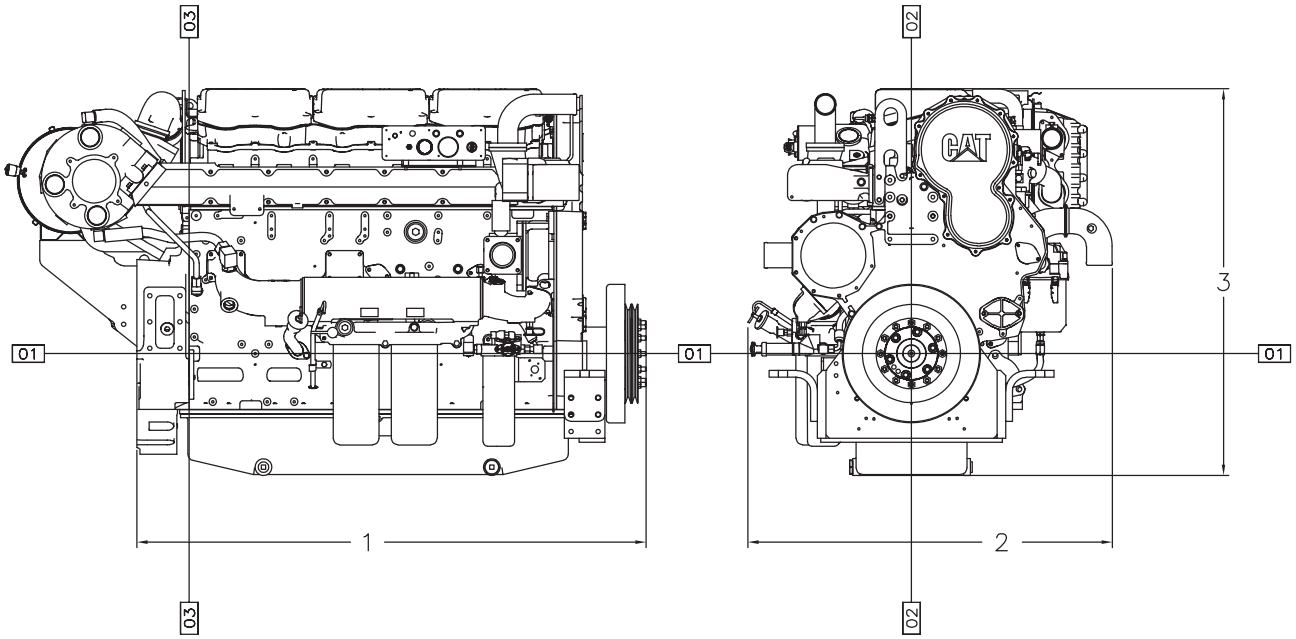
Engine Power bhp	Intake Manifold Temp °F	Intake Manifold Pressure in-hg	Intake Air Flow cfm	Exh Manifold Temp °F	Exh Stk Temp °F	Exh Gas Flow cfm
623.6	133.5	49.4	1246.61	1112.7	842.5	3185.39
561.2	131.5	45.5	1190.11	1082.7	827.8	2998.22
498.9	129.2	40.6	1115.95	1051.0	812.7	2775.74
467.7	127.9	37.2	1062.97	1030.5	803.1	2620.35
436.5	126.5	33.7	1006.47	1007.2	791.8	2461.44
374.1	123.4	26.7	900.52	952.2	763.7	2147.13
311.8	119.3	20.1	794.58	880.2	722.8	1839.90
249.4	114.1	14.4	706.29	793.4	665.8	1557.38
187.1	108.3	9.4	632.13	698.7	597.6	1299.58
156.0	105.1	7.4	600.35	649.4	559.9	1186.57
124.7	102.0	5.8	575.63	599.5	520.3	1091.22
62.4	95.2	3.5	543.85	495.7	434.1	932.31

Heat Rejection Data

Engine Power bhp	Percent Load	Rej to JW Btu/min	Rej to Atmos Btu/min	Rej to Exh Btu/min	From Oil Clr Btu/min
623.6	100	18596.5	2041.6	20928.1	3622.6
561.2	90	17345.3	1865.3	19449.5	3315.5
498.9	80	15980.4	1683.3	17800.3	2991.4
467.7	75	15127.4	1581.0	16776.6	2803.7
436.5	70	14274.3	1472.9	15696.1	2616.0
374.1	60	12511.4	1262.5	13535.0	2240.7
311.8	50	10748.4	1057.8	11317.1	1876.7
249.4	40	9042.3	858.7	9269.8	1524.1
187.1	30	7393.1	671.1	7336.2	1188.6
156.0	25	6653.8	580.1	6483.2	1029.3
124.7	20	5857.6	494.8	5743.9	881.5
62.4	10	4663.3	369.7	4265.2	608.5

For most current information, please refer to TMI.

DIMENSIONS



Heat Exchanger-Cooled Engine Dimensions (approximate)		
(1) Length (flywheel housing)	1506 mm	59.23 in
(2) Width	1078 mm	42.44 in
(3) Height	1145 mm	45.08 in
Weight, Net Dry (approx)	1802-2070 kg	3974-4565 lb

Note: Do not use for installation design.

Keel-cooled dimensions in process at time of print.

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465 bkW (624 bhp)

RATING CONDITIONS

Power at declared engine speed is in accordance with ISO3046-1:2002E. Caterpillar maintains ISO9001:1994/QS-9000 approved engine test facilities to assure accurate calibration of test equipment. Electronically controlled engines are set at the factory at the advertised power corrected to standard ambient conditions. The published fuel consumption rates are in accordance with ISO3046-1:2002E.

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 g/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.

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.

U.S. Sourced
LEHM8148-00 (2-08)