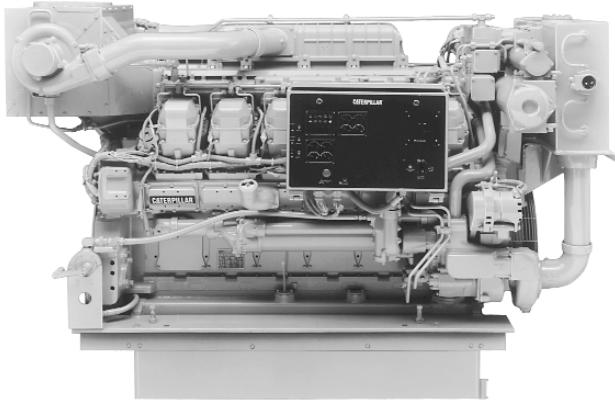




Marine Engine

3512B

970 bkW @ 1200 rpm
1300 bhp @ 1200 rpm



Shown with
Accessory Equipment

SPECIFICATIONS

V-12, 4-Stroke-Cycle-Diesel

Emissions	IMO compliant
Bore—mm (in)	170 (6.7)
Stroke—mm (in)	190 (7.5)
Displacement—L (cu in)	51.8 (3,158)
Rotation (from flywheel end)	ccw or cw
Compression Ratio	14.0:1
Capacity for Liquids—L (U.S. gal)	
Cooling System	289.3 (76.4)
Lube Oil System (refill)	613 (162)
Oil Change Interval — hrs	1000
Minimum Lube Oil Grade (required)	CF-4
Engine Weight, Net Dry	
(approx) — kg (lb)	5554 (12,244)

STANDARD ENGINE EQUIPMENT

Air Inlet System

regular duty air cleaners, dual turbochargers, 152 mm (6 in) OD straight connection, corrosion resistant coated separate circuit aftercooler core

Control System

dual Advanced Diesel Engine Management (ADEM II) modules with electronically controlled unit injectors

Cooling System

auxiliary fresh water pump on SCAC engines, non-self-priming centrifugal auxiliary sea water pump for heat exchanger engines only, expansion tank, gear-driven centrifugal jacket water pump, oil cooler, keel cooling connections for keel cooled engines, thermostats and housing with 92° C (198° F) full open temperature

Exhaust System

dry gas-tight exhaust manifolds with thermo-laminated heat shields, dual turbochargers with watercooled bearings and thermo-laminated heat shields, vertical exhaust outlet, 203 mm (8 in) ID round flanged outlet

Flywheel and Flywheel Housings

SAE No. 00 flywheel (183 teeth) and SAE No. 00 flywheel housing

Fuel System

electronically controlled unit injectors, RH fuel filter with service indicators, fuel transfer pump

Instruments

RH electronic instrument panel with analog gauges and digital display of data for: oil and fuel pressure, oil and fuel filter differential, system DC voltage, exhaust and water temperature, air inlet restriction; digital display only for: tachometer, service meter, fuel consumption (total and instantaneous); start/stop switch

Lube System

top mounted crankcase breather, deep sump oil pan, RH oil filler and dipstick, RH oil filter, gear type oil pump

Mounting System

ledge type engine length rails, 203 x 203 mm (8 x 8 in)

Power Take-Offs

accessory drive on standard rotation engines: lower RH, lower LH; on opposite rotation engines: upper and lower RH and upper and lower LH; two-sided front housing

Protection System

ADEM II Electronic Monitoring System with customer programmable alarm, shutdown, and deration strategies; emergency stop pushbutton

General

front and rear lifting eyes, Caterpillar yellow paint, vibration damper and guard

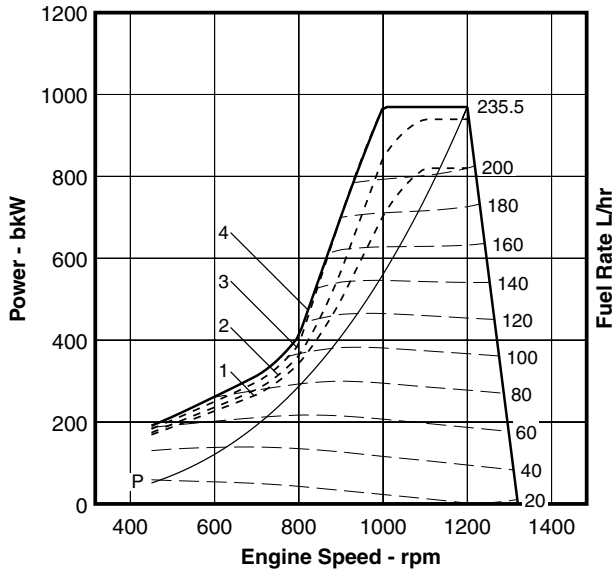
Power produced at the flywheel will be within standard tolerances up to 50° C (122° F) combustion air temperature measured at the air cleaner inlet, and fuel temperature up to 52° C (125° F) measured at the fuel filter base. Power rated in accordance with NMMA procedure as crankshaft power. Reduce crankshaft power by 3% for propeller shaft power.



PERFORMANCE CURVES

C Rating — DM4633-00

IMO Compliant — Aftercooler Temperature 60° C (140° F)

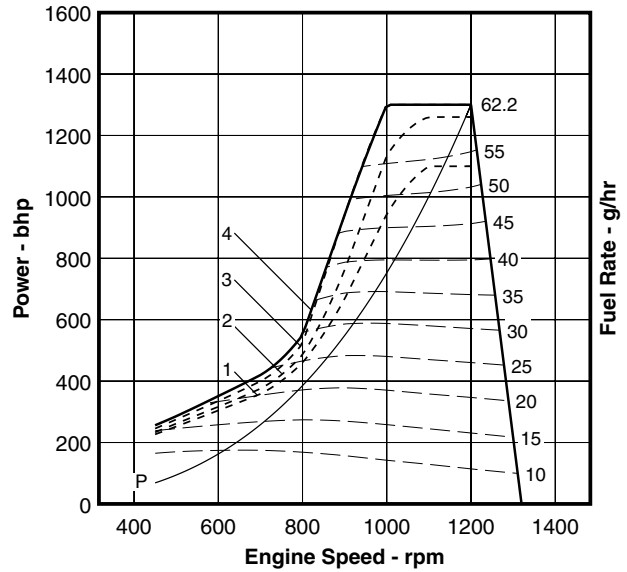


970 kW

SI Metric

Performance Data

	Engine Speed rpm	Engine Power kW	BSFC g/kW-h	Fuel Rate L/h	Boost Press kPa Gauge	Intake Air Flow m³/min	Exh Manif Temp °C	Exh Gas Flow m³/min
Zone	1200	820.0	203	198.5	197.6	74.9	554	176.9
Limit	1000	704.0	212	178.2	165.3	57.3	625	147.0
Curve: 1	800	343.0	225	92.1	49.3	25.2	625	70.6
	600	227.0	253	68.4	20.2	15.5	628	2.3
	450	169.0	270	54.4	13.2	11.3	629	27.4
Zone	1200	939.5	203	227.6	227.6	82.2	585	199.2
Limit	1000	846.0	211	212.8	211.3	67.5	645	173.2
Curve: 2	800	362.0	225	97.3	52.7	25.8	646	73.4
	600	236.0	255	71.7	21.9	15.8	648	8.4
	450	174.0	271	56.3	14.0	11.3	646	33.4
Zone	1200	969.5	204	235.5	235.3	84.0	593	205.4
Limit	1000	969.5	211	243.6	249.1	75.6	672	195.8
Curve: 3	800	389.0	226	104.8	57.6	26.7	676	77.4
	600	250.0	258	76.8	24.7	16.2	679	25.0
	450	183.0	273	59.6	15.4	11.5	678	44.2
Zone	1200	969.5	204	235.5	235.3	84.0	593	205.4
Limit	1000	969.5	211	243.6	249.1	75.6	672	195.8
Curve: 4	800	410.0	227	110.7	62.1	27.5	698	68.0
	600	262.0	260	81.1	27.0	16.6	706	39.3
	450	191.0	275	62.6	16.6	11.7	706	53.8
Prop	1200	969.5	204	235.5	235.3	84.0	593	205.4
Demand	1100	746.8	211	187.6	184.9	67.0	587	162.7
Curve: P	1000	561.1	214	143.3	116.3	46.3	597	119.1
	900	409.0	218	106.3	66.3	31.4	587	86.1
	800	287.3	226	77.3	39.1	23.5	564	62.4
	700	192.4	236	54.0	17.6	17.2	492	42.3
	600	121.2	248	35.9	5.2	13.1	381	27.8
	500	70.1	276	23.1	1.2	10.9	292	20.6
	450	51.1	301	18.3	1.0	10.1	257	18.0



1300 hp

English

Performance Data

	Engine Speed rpm	Engine Power hp	BSFC lb/hp-h	Fuel Rate gph	Boost Press in.Hg Gauge	Intake Air Flow cfm	Exh Manif Temp °F	Exh Gas Flow cfm
Zone	1200	1100	.334	52.4	58.5	2643	1029	6242
Limit	1000	944	.349	47.1	49.0	2022	1157	5187
Curve: 1	800	460	.370	24.3	14.6	889	1158	2491
	600	304	.416	18.1	6.0	547	1162	81
	450	227	.444	14.4	3.9	399	1164	967
Zone	1200	1260	.334	60.1	67.4	2901	1084	7029
Limit	1000	1135	.347	56.2	62.6	2382	1193	6112
Curve: 2	800	485	.371	25.7	15.6	910	1195	2590
	600	316	.419	18.9	6.5	558	1198	296
	450	233	.446	14.9	4.1	399	1196	1179
Zone	1200	1300	.335	62.2	69.7	2964	1099	7248
Limit	1000	1300	.347	64.4	73.8	2668	1241	6909
Curve: 3	800	522	.371	27.7	17.1	942	1248	2731
	600	335	.424	20.3	7.3	572	1255	882
	450	245	.449	15.7	4.6	406	1252	1560
Zone	1200	1300	.335	62.2	69.7	2964	1099	7248
Limit	1000	1300	.347	64.4	73.8	2668	1241	6909
Curve: 4	800	550	.372	29.2	18.4	970	1288	2400
	600	351	.427	21.4	8.0	586	1303	1387
	450	256	.452	16.5	4.9	413	1303	1898
Prop	1200	1300	.335	62.2	69.7	2964	1099	7248
Demand	1100	1001	.346	49.6	54.8	2364	1088	5741
Curve: P	1000	752	.352	37.9	34.4	1634	1106	4203
	900	548	.358	28.1	19.6	1108	1089	3038
	800	385	.371	20.4	11.6	829	1048	2202
	700	258	.387	14.3	5.2	607	917	1493
	600	163	.408	9.5	1.5	462	718	981
	500	94	.454	6.1	0.4	385	558	727
	450	69	.495	4.8	0.3	356	495	635

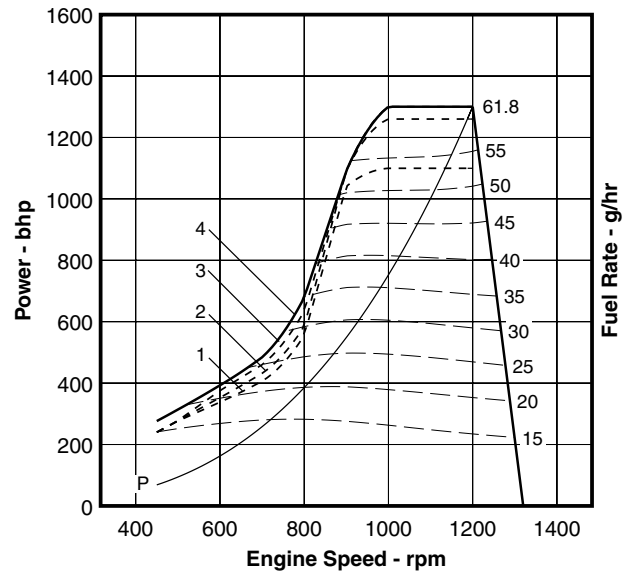
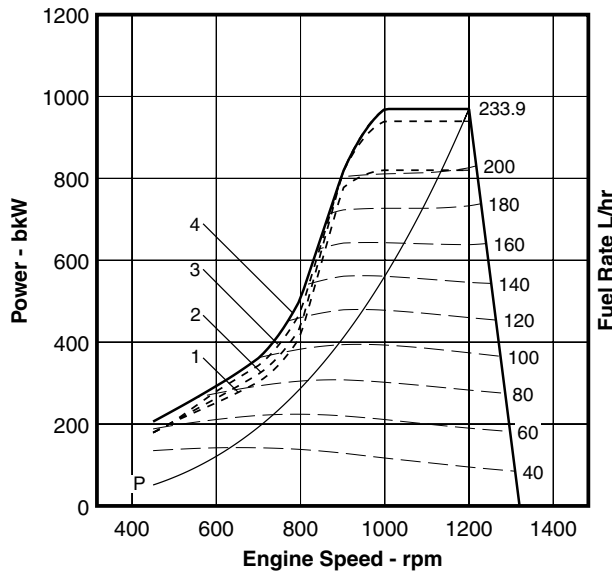
Brake Mean Effective Pressure 1873 kPa
 Heat Rejection to Coolant (total) 335 kW
 Heat Rejection to Aftercooler 215 kW
 Heat Rejection to Exhaust (total) 864 kW
 Heat Radiation to Atmosphere From Engine 116 kW

Brake Mean Effective Pressure 272 psi
 Heat Rejection to Coolant (total) 19051 Btu/min
 Heat Rejection to Aftercooler 12227 Btu/min
 Heat Rejection to Exhaust (total) 49135 Btu/min
 Heat Radiation to Atmosphere From Engine 6597 Btu/min

PERFORMANCE CURVES

C Rating — DM4632-00

IMO Compliant — Aftercooler Temperature 30° C (86° F)



970 kW

SI Metric

1300 hp

English

Performance Data

Performance Data

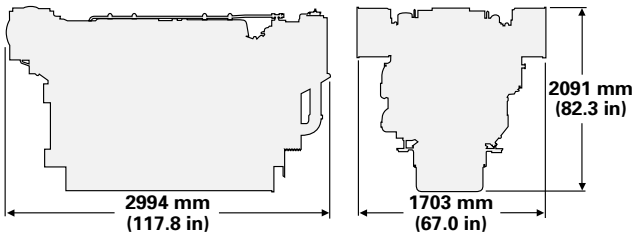
	Engine Speed rpm	Engine Power kW	BSFC g/kW-h	Fuel Rate L/h	Boost Press kPa Gauge	Intake Air Flow m ³ /min	Exh Manif Temp °C	Exh Gas Flow m ³ /min
Zone	1200	820.0	202	197.0	189.1	77.3	523	171.9
Limit	1000	820.0	207	202.0	196.5	67.7	594	169.4
Curve: 1	800	414.0	216	106.5	62.5	29.9	624	85.7
	600	252.0	243	73.0	25.3	16.2	635	45.8
	450	179.0	270	57.7	15.7	12.5	612	37.6
Zone	1200	939.5	202	226.0	217.3	84.3	555	193.6
Limit	1000	939.5	207	231.3	231.5	75.3	619	191.5
Curve: 2	800	436.0	216	112.5	67.5	30.8	643	89.2
	600	263.0	244	76.6	27.7	16.6	660	47.5
	450	179.0	270	57.7	15.7	12.5	612	37.6
Zone	1200	969.5	202	233.9	224.2	86.0	564	199.6
Limit	1000	969.5	207	238.8	240.0	77.1	627	197.1
Curve: 3	800	473.0	217	122.5	76.4	32.4	675	95.1
	600	280.0	245	81.9	31.4	17.1	698	50.1
	450	179.0	270	57.7	15.7	12.5	612	37.6
Zone	1200	969.5	202	233.9	224.2	86.0	564	199.6
Limit	1000	969.5	207	238.8	240.0	77.1	627	197.1
Curve: 4	800	506.0	218	131.3	85.1	34.0	701	100.5
	600	293.0	248	86.7	34.3	17.5	728	52.1
	450	206.0	281	69.0	21.0	13.4	707	44.4
Prop Demand	1200	969.5	202	233.9	224.2	86.0	564	199.6
	1100	746.8	207	184.5	180.5	69.3	547	160.8
Curve: P	1000	561.1	210	140.2	113.9	48.4	547	119.9
	900	409.0	212	103.4	65.9	34.4	528	89.2
	800	287.3	219	74.9	38.5	25.6	513	65.7
	700	192.4	229	52.5	17.1	18.2	448	44.1
	600	121.2	245	35.3	4.6	13.2	347	27.2
	500	70.1	276	23.1	0.6	10.9	266	19.4
	450	51.1	302	18.4	1.0	10.4	234	17.7

	Engine Speed rpm	Engine Power hp	BSFC lb/hp-h	Fuel Rate gph	Boost Press in.Hg Gauge	Intake Air Flow cfm	Exh Manif Temp °F	Exh Gas Flow cfm
Zone	1200	1100	.331	52.0	56.0	2728	974	6066
Limit	1000	1100	.340	53.4	58.2	2389	1101	5978
Curve: 1	800	555	.355	28.1	18.5	1055	1156	3024
	600	338	.399	19.3	7.5	572	1175	1616
	450	240	.445	15.2	4.6	441	1134	1327
Zone	1200	1260	.332	59.7	64.3	2975	1032	6832
Limit	1000	1260	.340	61.1	68.6	2657	1146	6758
Curve: 2	800	585	.356	29.7	20.0	1087	1190	3148
	600	353	.401	20.2	8.2	586	1219	1676
	450	240	.445	15.2	4.6	441	1134	1327
Zone	1200	1300	.333	61.8	66.4	3035	1046	7043
Limit	1000	1300	.340	63.1	71.1	2721	1161	6955
Curve: 3	800	634	.357	32.4	22.6	1143	1248	3356
	600	375	.403	21.6	9.3	603	1289	1768
	450	240	.445	15.2	4.6	441	1134	1327
Zone	1200	1300	.333	61.8	66.4	3035	1046	7043
Limit	1000	1300	.340	63.1	71.1	2721	1161	6955
Curve: 4	800	679	.358	34.7	25.2	1200	1294	3546
	600	393	.408	22.9	10.2	618	1342	1838
	450	276	.462	18.2	6.2	473	1304	1567
Prop Demand	1200	1300	.333	61.8	66.4	3035	1046	7043
	1100	1001	.341	48.7	53.5	2445	1017	5674
Curve: P	1000	752	.345	37.0	33.7	1708	1017	4231
	900	548	.349	27.3	19.5	1214	982	3148
	800	385	.360	19.8	11.4	903	956	2318
	700	258	.376	13.9	5.1	642	839	1556
	600	163	.402	9.3	1.4	466	656	960
	500	94	.454	6.1	0.2	385	511	685
	450	69	.497	4.9	0.3	367	453	625

Brake Mean Effective Pressure 1873 kPa
 Heat Rejection to Coolant (total) 333 kW
 Heat Rejection to Aftercooler 267 kW
 Heat Rejection to Exhaust (total) 804 kW
 Heat Radiation to Atmosphere From Engine 108 kW

Brake Mean Effective Pressure 272 psi
 Heat Rejection to Coolant (total) 18937 Btu/min
 Heat Rejection to Aftercooler 15184 Btu/min
 Heat Rejection to Exhaust (total) 45723 Btu/min
 Heat Radiation to Atmosphere From Engine 6142 Btu/min

DIMENSIONS



RATING DEFINITIONS AND CONDITIONS

C RATING – Vessels such as ferries, harbor tugs, fishing boats moving at higher speeds out and back (e.g. lobster, crayfish, and tuna), offshore service boats, and also displacement hull yachts and short trip coastal freighters where engine load and speed are cyclical.

RATINGS are based on SAE J1228/ISO8665 standard conditions of 100 kPa (29.61 in Hg), 25° C (77° F), and 30% relative humidity. These ratings also apply at ISO3046/1, DIN6271/3, and BS5514 conditions of 100 kPa (29.61 in Hg), 27° C (81° F), and 60% relative humidity. Ratings are valid for air cleaner inlet temperatures up to and including 50° C (122° F) and for sea water temperatures up to and including 42° C (108° F) at sea level.

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/liter (7.001 lbs/U.S. gal). Fuel consumption shown with all oil, fuel, and water pumps, engine driven. For a “without pumps” condition, deduct approximately 0.5% for each pump not engine driven.

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.

TMI Reference No.: DM4633-00, DM4632-00
Materials and specifications are subject to change without notice.

The International System of Units (SI) is used in this publication.