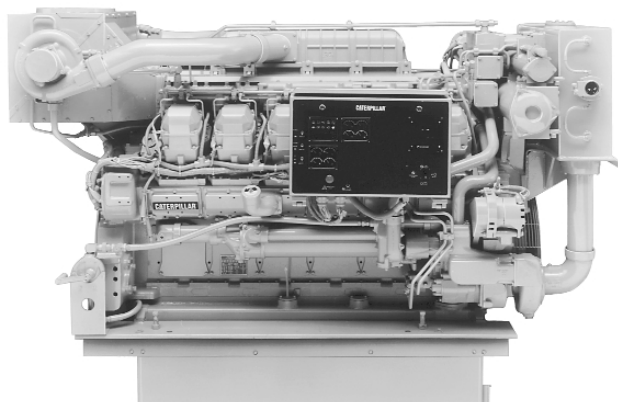




Marine Engine

3512B

1052 bkW @ 1800 rpm
1410 bhp @ 1800 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, 305 mm (12 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

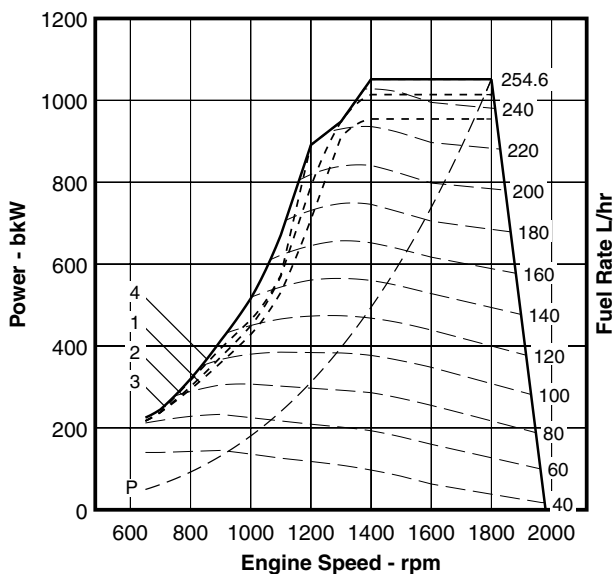
Power produced at the flywheel will be within standard tolerances up to 50° C (122° F) combustion air temperature measured at the air cleaner inlet, and fuel temperature up to 52° C (125° F) measured at the fuel filter base. Power rated in accordance with NMMA procedure as crankshaft power. Reduce crankshaft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



PERFORMANCE CURVES

C Rating — DM4541-00

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



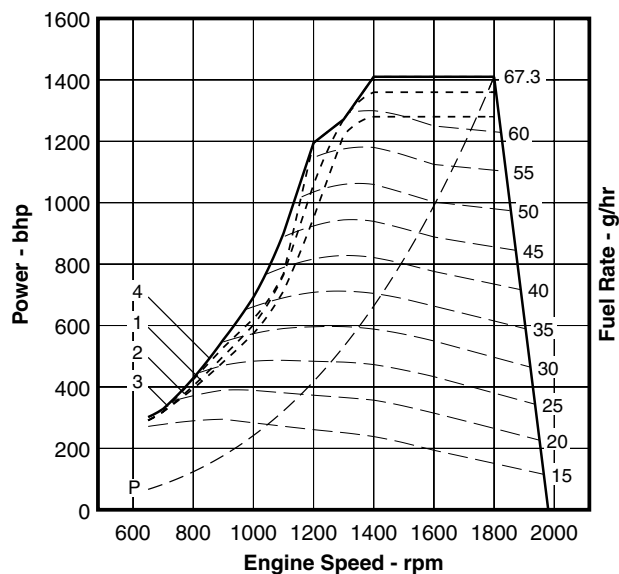
1052 kW

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 Limit	1800	954.5	206	234.6	189.7	108.5	486	220.7
Curve: 1	1600	954.5	203	230.5	182.2	94.2	527	206.7
	1400	954.5	198	224.9	161.9	77.1	564	186.0
	1200	709.0	207	175.1	101.1	50.3	625	136.2
	1000	428.0	222	113.4	44.5	29.8	626	81.8
	650	217.0	239	61.8	13.4	15.1	553	37.1
Zone Limit	1800	1014.0	204	246.7	199.1	111.7	494	228.4
Curve: 2	1600	1014.0	201	242.4	193.0	97.7	533	214.8
	1400	1014.0	197	237.6	175.0	80.6	572	195.0
	1200	790.0	207	194.5	118.4	54.3	645	148.8
	1000	449.0	223	119.6	48.3	30.6	645	85.5
	650	217.0	239	61.8	13.4	15.1	553	37.1
Zone Limit	1800	1051.5	203	254.6	205.6	113.8	500	233.6
Curve: 3	1600	1051.5	200	250.2	199.7	100.0	538	219.9
	1400	1051.5	196	246.0	183.3	82.8	577	200.8
	1200	891.0	206	218.3	139.9	59.6	665	164.4
	1000	464.0	224	124.1	51.2	31.2	658	88.2
	650	217.0	239	61.8	13.4	15.1	553	37.1
Zone Limit	1800	1051.5	203	254.6	205.6	113.8	500	233.6
Curve: 4	1600	1051.5	200	250.2	199.7	100.0	538	219.9
	1400	1051.5	196	246.0	183.3	82.8	577	200.8
	1200	891.0	205	218.0	139.9	59.6	665	164.4
	1000	516.0	226	138.8	62.2	33.4	699	97.9
	650	225.0	242	65.0	14.4	15.3	577	38.6
Prop Demand	1800	1051.5	203	254.6	205.6	113.8	500	233.6
Curve: P	1600	738.5	211	185.9	139.8	80.6	502	176.9
	1400	494.7	214	126.3	73.2	51.9	474	118.0
	1200	311.6	224	83.0	34.5	34.1	442	76.7
	1000	180.3	233	50.0	14.1	23.6	353	45.6
	650	49.5	329	19.4	1.7	13.7	213	20.2

Brake Mean Effective Pressure1355 kPa
 Heat Rejection to Coolant (total)455 kW
 Heat Rejection to Aftercooler255 kW
 Heat Rejection to Exhaust (total)848 kW
 Heat Radiation to Atmosphere From Engine93 kW



1410 hp

English

Performance Data

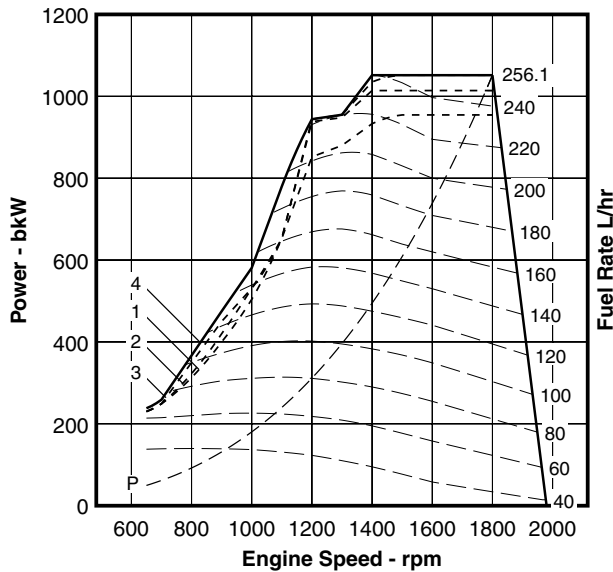
	Engine Speed rpm	Engine Power hp	BSFC lb/hp-h	Fuel Rate gph	Boost Press in.Hg. Gauge	Intake Air Flow cfm	Exh Manif Temp °F	Exh Gas Flow cfm
Zone Limit	1800	1280	.339	62.0	56.2	3829	907	7788
Curve: 1	1600	1280	.333	60.9	54.0	3324	980	7294
	1400	1280	.325	59.4	47.9	2721	1047	6563
	1200	951	.341	46.3	29.9	1775	1157	4806
	1000	574	.365	30.0	13.2	1052	1159	2887
	650	291	.393	16.3	4.0	533	1028	1309
Zone Limit	1800	1360	.336	65.2	59.0	3942	921	8060
Curve: 2	1600	1360	.330	64.0	57.2	3448	992	7580
	1400	1360	.323	62.8	51.8	2844	1062	6881
	1200	1059	.339	51.4	35.1	1916	1193	5251
	1000	602	.367	31.6	14.3	1080	1194	3017
	650	291	.393	16.3	4.0	533	1028	1309
Zone Limit	1800	1410	.334	67.3	60.9	4016	931	8243
Curve: 3	1600	1410	.328	66.1	59.1	3529	1000	7760
	1400	1410	.323	65.0	54.3	2922	1071	7086
	1200	1195	.338	57.7	41.4	2103	1229	5801
	1000	622	.369	32.8	15.2	1101	1217	3112
	650	291	.393	16.3	4.0	533	1028	1309
Zone Limit	1800	1410	.334	67.3	60.9	4016	931	8243
Curve: 4	1600	1410	.328	66.1	59.1	3529	1000	7760
	1400	1410	.323	65.0	54.3	2922	1071	7086
	1200	1195	.337	57.6	41.4	2103	1229	5801
	1000	692	.371	36.7	18.4	1179	1291	3455
	650	302	.398	17.2	4.3	540	1071	1362
Prop Demand	1800	1410	.334	67.3	60.9	4016	931	8243
Curve: P	1600	990	.347	49.1	41.4	2844	936	6242
	1400	663	.352	33.4	21.7	1831	885	4164
	1200	418	.368	21.9	10.2	1203	827	2707
	1000	242	.383	13.2	4.2	833	668	1609
	650	66	.540	5.1	0.5	483	415	713

Brake Mean Effective Pressure197 psi
 Heat Rejection to Coolant (total)25875 Btu/min
 Heat Rejection to Aftercooler14502 Btu/min
 Heat Rejection to Exhaust (total)48225 Btu/min
 Heat Radiation to Atmosphere From Engine5289 Btu/min

PERFORMANCE CURVES

C Rating — DM4540-00

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



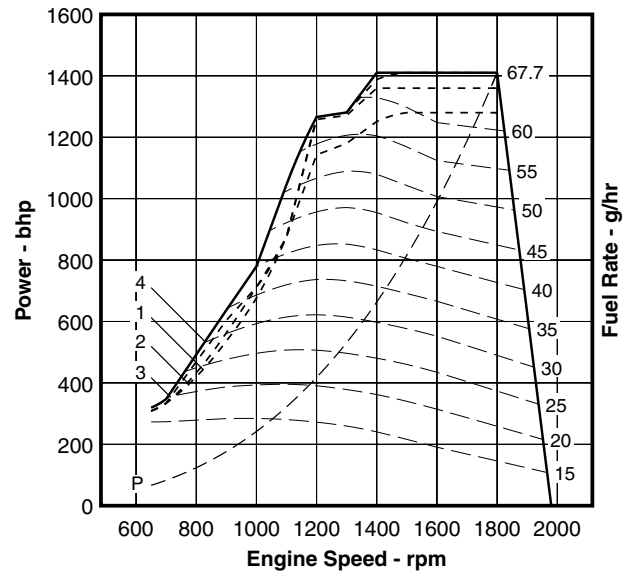
1052 kW

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 m ³ /min	Exh Manif Temp °C	Exh Gas Flow m ³ /min
Zone	1800	954.5	207	235.6	183.3	112.0	461	219.4
Limit	1600	954.5	202	229.8	180.0	99.4	489	208.3
Curve: 1	1400	933.0	194	216.2	158.3	80.2	515	179.3
	1200	852.0	200	202.8	131.1	61.7	601	156.8
	1000	504.0	217	130.4	54.6	33.5	625	94.3
	650	230.0	237	65.0	12.4	15.6	542	40.5
Zone	1800	1014.0	205	248.0	192.0	114.9	470	227.2
Limit	1600	1014.0	200	241.5	189.7	102.7	496	215.3
Curve: 2	1400	1014.0	193	232.9	175.6	85.0	524	190.0
	1200	938.0	199	222.5	149.4	66.4	615	170.2
	1000	531.0	218	137.8	60.3	34.8	643	99.3
	650	230.0	237	65.0	12.4	15.6	542	40.5
Zone	1800	1051.5	204	256.1	197.8	116.9	476	232.5
Limit	1600	1051.5	199	248.8	195.8	104.7	500	219.7
Curve: 3	1400	1035.0	192	237.2	180.3	86.3	526	193.0
	1200	944.0	199	223.6	150.6	66.7	616	171.1
	1000	531.0	218	138.0	60.3	34.8	643	99.3
	650	230.0	237	65.0	12.4	15.6	542	40.5
Zone	1800	1051.5	204	256.1	197.8	116.9	476	232.5
Limit	1600	1051.5	199	248.8	195.8	104.7	500	219.7
Curve: 4	1400	1051.5	192	240.9	184.0	87.4	528	195.6
	1200	944.0	199	223.5	150.6	66.7	616	171.1
	1000	581.0	219	151.7	71.8	37.3	675	108.4
	650	238.0	239	67.8	13.4	15.8	562	41.9
Prop Demand	1800	1051.5	204	256.1	197.8	116.9	476	232.5
Curve: P	1600	738.5	211	185.4	137.7	85.1	462	177.0
	1400	494.7	211	124.5	72.2	54.2	436	117.5
	1200	311.6	216	80.2	34.8	35.5	401	74.5
	1000	180.3	231	49.6	15.1	24.2	328	46.3
	650	49.5	337	19.9	1.7	14.0	200	20.8

Brake Mean Effective Pressure1355 kPa
 Heat Rejection to Coolant (total)434 kW
 Heat Rejection to Aftercooler331 kW
 Heat Rejection to Exhaust (total)811 kW
 Heat Radiation to Atmosphere From Engine88 kW



1410 hp

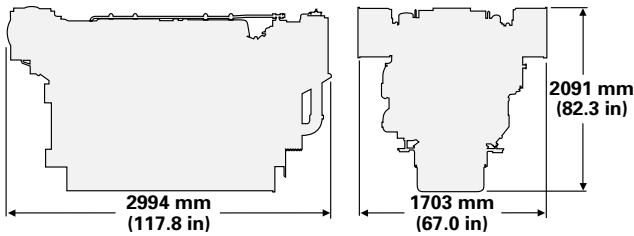
English

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	1800	1280	.340	62.2	54.3	3952	862	7742
Limit	1600	1280	.332	60.7	53.3	3508	913	7350
Curve: 1	1400	1251	.320	57.1	46.9	2830	959	6327
	1200	1143	.328	53.6	38.8	2177	1113	5533
	1000	676	.357	34.4	16.2	1182	1157	3328
	650	308	.390	17.2	3.7	550	1008	1429
Zone	1800	1360	.337	65.5	56.9	4055	878	8017
Limit	1600	1360	.328	63.8	56.2	3624	925	7597
Curve: 2	1400	1360	.317	61.5	52.0	2999	975	6705
	1200	1258	.327	58.8	44.2	2343	1138	6006
	1000	712	.358	36.4	17.9	1228	1189	3504
	650	308	.390	17.2	3.7	550	1008	1429
Zone	1800	1410	.336	67.7	58.6	4125	889	8204
Limit	1600	1410	.326	65.7	58.0	3695	933	7753
Curve: 3	1400	1388	.316	62.7	53.4	3045	979	6811
	1200	1266	.327	59.1	44.6	2354	1140	6038
	1000	712	.359	36.5	17.9	1228	1189	3504
	650	308	.390	17.2	3.7	550	1008	1429
Zone	1800	1410	.336	67.7	58.6	4125	889	8204
Limit	1600	1410	.326	65.7	58.0	3695	933	7753
Curve: 4	1400	1410	.316	63.6	54.5	3084	983	6902
	1200	1266	.326	59.0	44.6	2354	1140	6038
	1000	779	.360	40.1	21.3	1316	1248	3825
	650	319	.393	17.9	4.0	558	1043	1479
Prop Demand	1800	1410	.336	67.7	58.6	4125	889	8204
Curve: P	1600	990	.346	49.0	40.8	3003	863	6246
	1400	663	.347	32.9	21.4	1913	817	4146
	1200	418	.355	21.2	10.3	1253	755	2629
	1000	242	.379	13.1	4.5	854	623	1634
	650	66	.554	5.3	0.5	494	392	734

Brake Mean Effective Pressure197 psi
 Heat Rejection to Coolant (total)24681 Btu/min
 Heat Rejection to Aftercooler18824 Btu/min
 Heat Rejection to Exhaust (total)46121 Btu/min
 Heat Radiation to Atmosphere From Engine5004 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.