

**MARINE ENGINE PERFORMANCE DATA [9WR01285]****JULY 05, 2018**For Help Desk Phone Numbers [Click here](#)

Performance Number: DM6122

Change Level: 02

Sales Model: 3406EDITA

Engine Power: 800 HP

Manifold Type: W/C

Turbo Quantity: 1

Application Type: M PROP ENG

Rating Type: E RATING (HIGH PERFORMANCE)

Combustion: DI

Speed: 2,300 RPM

Governor Type:

Engine App: MP

Engine Rating: MP

Certification: IMO - 2000 - 2006

EPA MAR-EX 2004 - 2007

Aspr: TA

After Cooler: SCAC

After Cooler Temp(F): --

Turbo Arrangement:

Strategy:

**General Performance Data :Maximum Limit**

ENGINE SPEED RPM	ENGINE POWER BHP	ENGINE TORQUE LB.FT	ENGINE BMEP PSI	FUEL BSFC LB/BHP-HR	FUEL RATE GPH	INTAKE MFLD TEMP DEG F	INTAKE MFLD P IN-HG	INTAKE AIR FLOW CFM	EXH MFLD TEMP DEG F	EXH STACK TEMP DEG F	EXH GAS FLOW CFM
2,300	800	1,826.94	308.21	0.35	40.55	107.6	72.64	1,716.29	1,168.52	749.3	4,068.25
2,200	800	1,909.54	322.28	0.35	40.47	110.84	74.92	1,695.11	1,178.42	762.26	4,064.72
2,100	800	2,000.26	337.51	0.35	40.34	113	78.03	1,695.11	1,175.9	754.88	4,015.28
2,000	799	2,099.1	354.19	0.35	40.23	112.82	81.82	1,691.57	1,181.48	751.82	4,015.28
1,900	782	2,160.31	364.63	0.35	39.2	110.48	82.38	1,631.54	1,186.34	759.02	3,902.27
1,800	761	2,221.53	374.78	0.35	37.8	107.6	81.2	1,539.72	1,206.5	788.18	3,768.08
1,700	707	2,183.18	368.26	0.34	34.53	105.08	70.69	1,338.43	1,204.16	810.86	3,372.55
1,600	564	1,851.28	312.42	0.34	27.21	95.72	46.02	967.62	1,203.26	868.28	2,521.47
1,500	396	1,385.14	233.8	0.34	19.23	87.98	24.13	646.26	1,201.28	919.22	1,748.08
1,400	327	1,225.09	206.68	0.35	16.11	85.1	17.32	522.66	1,202	932.54	1,444.37
1,300	282	1,140.27	192.47	0.35	14.16	83.12	13.3	441.43	1,202.18	938.66	1,228.95
1,200	248	1,083.48	182.9	0.36	12.63	81.5	10.45	377.87	1,202.54	942.8	1,048.85
1,100	220	1,051.76	177.53	0.36	11.39	80.96	8.77	331.96	1,201.82	951.98	932.31
1,000	195	1,025.95	173.18	0.37	10.28	81.32	7.52	296.64	1,202.18	962.06	833.43

ENGINE SPEED RPM	ENGINE POWER BHP	ENGINE TORQUE LB.FT	ENGINE BMEP PSI	FUEL BSFC LB/BHP-HR	FUEL RATE GPH	INTAKE MFLD TEMP DEG F	INTAKE MFLD P IN-HG	INTAKE AIR FLOW CFM	EXH MFLD TEMP DEG F	EXH STACK TEMP DEG F	EXH GAS FLOW CFM
2,300	800	1,827.67	308.36	0.35	40.58	107.6	72.7	1,716.29	1,169.24		4,071.79
2,200	700	1,672.05	282.1	0.34	33.97	104	65	1,557.38	1,039.28		3,453.78
2,100	609	1,523.8	257.16	0.33	28.9	98.96	54.31	1,341.96	977.36		2,916.99
2,000	526	1,382.19	233.22	0.33	24.83	96.08	44.33	1,147.73	966.02		2,532.06
1,900	451	1,247.21	210.45	0.33	21.37	93.38	34.77	960.56	968.72		2,171.85
1,800	384	1,119.62	188.84	0.34	18.36	91.04	26.12	783.99	979.88		1,832.83
1,700	323	998.66	168.54	0.34	15.72	87.98	19.13	649.79	990.86		1,550.32
1,600	269	884.33	149.25	0.35	13.37	85.64	13.44	543.85	980.06		1,303.11
1,500	222	777.39	131.12	0.35	11.2	84.2	9.06	462.62	955.4		1,091.22
1,400	181	677.08	114.29	0.36	9.22	82.76	5.92	395.52	889.34		896.99
1,300	145	584.15	98.48	0.36	7.48	81.32	3.67	342.55	803.66		731.01
1,200	114	497.85	83.98	0.37	5.94	80.06	2.19	300.17	714.38		596.82
1,100	88	418.2	70.49	0.37	4.68	79.7	1.04	264.86	620.06		490.87
1,000	66	345.18	58.31	0.39	3.62	80.6	0.21	233.08	538.88		406.12

General Performance Data :Max Power Curve M

ENGINE SPEED RPM	ENGINE POWER BHP	ENGINE TORQUE LB.FT	ENGINE BMEP PSI	FUEL BSFC LB/BHP-HR	FUEL RATE GPH	INTAKE MFLD TEMP DEG F	INTAKE MFLD P IN-HG	INTAKE AIR FLOW CFM	EXH MFLD TEMP DEG F	EXH STACK TEMP DEG F	EXH GAS FLOW CFM
2,300	800	1,826.94	308.21	0.35	40.55	107.6	72.64	1,716.29	1,168.52	749.3	4,068.25
2,200	800	1,909.54	322.28	0.35	40.44	110.84	74.92	1,695.11	1,178.42	762.26	4,064.72
2,100	800	2,000.26	337.51	0.35	40.37	113	78.03	1,695.11	1,175.9	755.06	4,018.81
2,000	800	2,100.57	354.48	0.35	40.34	112.82	81.91	1,691.57	1,182.2	752.18	4,018.81
1,900	800	2,211.2	373.19	0.35	40.34	111.74	84.81	1,663.32	1,207.4	771.62	4,015.28
1,800	800	2,334.38	393.93	0.35	40.44	109.4	85.82	1,596.22	1,253.48	819.86	4,004.69
1,700	800	2,471.56	416.99	0.36	40.63	111.92	85.94	1,522.06	1,290.56	860.72	3,987.03
1,600	800	2,624.24	442.81	0.36	40.79	118.22	91.36	1,507.94	1,338.26	911.84	4,089.44
1,500	751	2,630.14	443.82	0.35	38.07	120.74	88.72	1,394.93	1,356.26	952.7	3,859.9
1,400	606	2,274.64	383.78	0.35	30.43	97.34	53.01	925.25	1,432.76	1,144.22	2,789.86
1,300	470	1,897	320.1	0.35	23.62	86.72	34.35	670.98	1,466.42	1,219.82	2,147.13
1,200	329	1,438.98	242.8	0.36	17.04	82.4	19.19	466.15	1,385.78	1,128.56	1,469.09
1,100	293	1,396.94	235.69	0.38	15.88	82.04	16.32	402.59	1,408.28	1,161.32	1,299.58
1,000	255	1,340.15	226.12	0.4	14.61	82.22	13.62	346.08	1,404.32	1,173.56	1,130.07

Engine Heat Rejection Data :Maximum Limit										
ENGINE SPEED RPM	ENGINE POWER BHP	REJ TO JW BTU/MN	REJ TO ATMOS BTU/MN	REJ TO EXHAUST BTU/MN	EXH RCOV TO 350F BTU/MN	FROM OIL CLR BTU/MN	FROM AFT CLR BTU/MN	WORK ENERGY BTU/MN	LHV ENERGY BTU/MN	HHV ENERGY BTU/MN
2,300	800	17,970.9	2,815.1	28,491.8	13,648.8	4,669.0	10,179.7	33,894.4	87,636.5	93,323.5
2,200	800	18,255.2	3,065.3	28,150.6	13,648.8	4,669.0	9,895.4	33,894.4	87,636.5	93,323.5
2,100	800	18,312.1	3,372.4	27,638.8	13,250.7	4,652.0	9,781.6	33,894.4	87,295.3	92,982.3
2,000	799	17,800.3	3,702.2	26,899.4	12,795.7	4,612.1	9,895.4	33,894.4	86,556.0	92,186.1
1,900	782	17,629.7	3,963.8	26,387.6	12,625.1	4,532.5	9,497.3	33,155.1	85,077.3	90,650.6
1,800	761	16,947.2	4,003.6	24,567.8	11,999.5	4,333.5	8,871.7	32,302.1	81,323.9	86,612.8
1,700	707	15,923.6	3,491.8	20,586.9	10,066.0	3,844.4	6,938.1	29,970.4	72,224.8	76,888.1
1,600	564	14,786.2	2,741.1	17,288.4	8,871.7	3,122.2	3,753.4	23,942.2	58,632.9	62,500.0
1,500	396	12,682.0	2,058.7	14,956.8	8,189.3	2,405.6	1,592.4	16,776.6	45,154.7	48,055.1
1,400	327	10,293.5	1,626.5	11,374.0	6,255.7	1,910.8	1,023.7	13,819.4	35,884.9	38,216.6
1,300	282	9,099.2	1,450.2	9,781.6	5,345.8	1,654.9	739.3	11,942.7	31,051.0	33,041.4
1,200	248	8,303.0	1,336.4	8,871.7	4,890.8	1,478.6	511.8	10,520.9	27,695.6	29,515.5
1,100	220	7,563.7	1,262.5	8,018.6	4,435.9	1,330.8	398.1	9,326.7	24,965.9	26,615.1
1,000	195	6,938.1	1,205.6	7,393.1	4,094.6	1,205.6	341.2	8,303.0	22,634.2	24,112.8

**EMISSIONS DATA**

IMO - 2000 - 2006 \*\*\*\*\* M2

Gaseous emissions data measurements are consistent with those described in REGULATION 13 of ANNEX VI of MARPOL 73/78 and ISO 8178 for measuring HC, CO, PM, and NOx.

This engine conforms to INTERNATIONAL MARINE ORGANIZATION'S (IMO) YB compression-ignition emission regulations.

EPA MAR-EX 2004 - 2007 \*\*\*\*\* L3

Gaseous emissions data measurements are consistent with those described in EPA 40 CFR PART 94.103 and ISO 8178 for measuring HC, CO, PM, and NOx.

This engine conforms to US EPA MARINE RECREATIONAL compression-ignition emission regulations for engines with a swept displacement per cylinder equal to or greater than 1.2 L/cyl but less than 2.5 L/cyl.

LOCALITY	AGENCY/LEVEL	MAX LIMITS - g/kW-hr		
U.S. (incl Calif)	EPA/TIER-2	CO:5.0	HC + NOx:7.2	PM:0.2

REFERENCE EXHAUST STACK DIAMETER	5 IN
WET EXHAUST MASS	7,885.9 LB/HR
WET EXHAUST FLOW (748.40 F STACK TEMP )	4,075.32 CFM
WET EXHAUST FLOW RATE ( 32 DEG F AND 29.98 IN HG )	1,629.00 STD CFM
DRY EXHAUST FLOW RATE ( 32 DEG F AND 29.98 IN HG )	1,492.75 STD CFM
FUEL FLOW RATE	40 GAL/HR

**RATED SPEED "Potential site variation"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BHP	TOTAL NOX (AS NO2) LB/HR	TOTAL CO LB/HR	TOTAL HC LB/HR	OXYGEN IN EXHAUST PERCENT
2,300	100	800	11.8300	2.6300	.1900	8.9000
2,300	75	600	10.0400	.9100	.2500	11.1000
2,300	50	400	7.5100	.4200	.2200	12.2000
2,300	25	200	3.4900	.6500	.1500	13.9000
2,300	10	80	.6400	1.0100	.1100	15.3000

**RATED SPEED "Nominal Data"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BHP	TOTAL NOX (AS NO2) LB/HR	TOTAL CO LB/HR	TOTAL HC LB/HR	TOTAL CO2 LB/HR	OXYGEN IN EXHAUST PERCENT
2,300	100	800	9.7800	1.4100	.1000	895.4	8.9000
2,300	75	600	8.2900	.4900	.1300	647.4	11.1000
2,300	50	400	6.2100	.2300	.1200	438.2	12.2000
2,300	25	200	2.8800	.3500	.0800	252	13.9000
2,300	10	80	.5300	.5400	.0600	147.9	15.3000

## The powers listed above and all the Powers displayed are Corrected Powers

Identification Reference and Notes			
Engine Arrangement:	2558709	Lube Oil Press @ Rated Spd(PSI):	74.4
Effective Serial No:	9WR03600	Piston Speed @ Rated Eng SPD(FT/Min):	2,500.0
Primary Engine Test Spec:	0K6674	Max Operating Altitude(FT):	--
Performance Parm Ref:	TM0015	PEEC Elect Control Module Ref	
Performance Data Ref:	DM6122	PEEC Personality Cont Mod Ref	
Aux Coolant Pump Perf Ref:			
Cooling System Perf Ref:		Turbocharger Model	UTW8136-1.19 VOW
Certification Ref:	IMO EPA MAR EXEMPT	Fuel Injector	
Certification Year:	2000	Timing-Static (DEG):	--
Compression Ratio:	14.7	Timing-Static Advance (DEG):	--
Combustion System:	DI	Timing-Static (MM):	--
Aftercooler Temperature (F):	--	Unit Injector Timing (MM):	--
Crankcase Blowby Rate(CFH):	--	Torque Rise (percent)	--
Fuel Rate (Rated RPM) No Load(Gal/HR):	--	Peak Torque Speed RPM	--
Lube Oil Press @ Low Idle Spd(PSI):	28.3	Peak Torque (LB.FT):	--

**Reference**  
**Number: DM6122**

THIS CURVE IS ALSO APPLICABLE TO TEST SPEC 0K7037 (LH).  
IMO - 20002006M2EPA MAR-EX 20042007L3

**Parameters**  
Reference: TM0015

**MARINE PROP - ALL EXCEPT 3600**

**LIMIT DEFINITIONS FOR USE WITH A, B AND C RATED ENGINES:**  
ZONE 1 - FOR CONTINUOUS OPERATION, INCLUDING DREDGE ENGINES, WITHOUT INTERRUPTION OR LOAD CYCLING ON OR UNDER CURVE 1.

ZONE 1-2 - OPERATION LIMITED TO 4 HOUR PERIOD AT FULL POWER FOLLOWED BY A 1 HOUR PERIOD ON OR UNDER CURVE 1.

ZONE 2-3 - OPERATION LIMITED TO 1 HOUR PERIOD AT FULL POWER FOLLOWED BY A 1 HOUR PERIOD ON OR UNDER CURVE 1.

MAX LIMIT CURVE - OPERATION LIMITED TO 5 MINUTE PERIOD AT FULL POWER FOLLOWED BY A 2 HOUR PERIOD ON OR UNDER CURVE 1.

CURVE P - POWER CURVE P REPRESENTS THE POWER DEMAND OF A TYPICAL FIXED PITCH PROPELLER, SHAFT POWER MAY BE ASSUMED TO BE 97 PERCENT OF THE BRAKE ENGINE POWER SHOWN.

MAX POWER DATA CURVE M - MAXIMUM POWER ENGINE IS CAPABLE OF PRODUCING.

**TOLERANCES:**

Power	+/- 3%
Exhaust stack temperature	+/- 8%
Inlet airflow	+/- 5%
Intake manifold pressure-gage	+/- 10%
Exhaust flow	+/- 6%
Specific fuel consumption	+/- 3%
Fuel rate	+/- 5%
Heat rejection	+/- 5%

**CONDITIONS:**

ENGINE PERFORMANCE IS CORRECTED TO INLET AIR STANDARD CONDITIONS OF 99 KPA (29.31 IN HG) DRY BAROMETER AND 25 DEG C (77 DEG F). THESE VALUES CORRESPOND TO THE STANDARD ATMOSPHERIC PRESSURE AND TEMPERATURE AS SHOWN IN SAE J1228. ALSO INCLUDED IS A CORRECTION TO STANDARD FUEL GRAVITY OF 35 DEGREES API HAVING A LOWER HEATING VALUE OF 42,780 KJ/KG (18,390 BTU/LB) WHEN USED AT 29 DEG C (84.2 DEG F) WHERE THE DENSITY IS 838.9 G/L (7.002 LB/GAL).

THE CORRECTED PERFORMANCE VALUES SHOWN FOR CATERPILLAR ENGINES WILL APPROXIMATE THE VALUES OBTAINED WHEN THE OBSERVED PERFORMANCE DATA IS CORRECTED TO SAE J1228, ISO 3046-2 & 8665 & 2288 & 9249 & 1585, EEC 80/1269 AND DIN 70020 STANDARD REFERENCE CONDITIONS.

ENGINES ARE EQUIPPED WITH STANDARD ACCESSORIES; LUBE OIL, FUEL PUMP AND JACKET WATER PUMP. THE POWER REQUIRED TO DRIVE AUXILIARIES MUST BE DEDUCTED FROM THE GROSS OUTPUT TO ARRIVE AT THE NET POWER AVAILABLE FOR THE EXTERNAL (FLYWHEEL) LOAD. TYPICAL AUXILIARIES INCLUDE COOLING FANS, AIR COMPRESSORS AND CHARGING ALTERNATORS.

RATINGS MUST BE REDUCED TO COMPENSATE FOR ALTITUDE AND/OR AMBIENT TEMPERATURE CONDITIONS ACCORDING TO THE APPLICABLE DATA SHOWN ON THE PERFORMANCE DATA SET.

**ALTITUDE:**

ALTITUDE CAPABILITY - THE RECOMMENDED REDUCED POWER VALUES FOR SUSTAINED ENGINE OPERATION AT SPECIFIC ALTITUDE LEVELS AND AMBIENT TEMPERATURES.

COLUMN "N" DATA - THE FLYWHEEL POWER OUTPUT AT NORMAL AMBIENT TEMPERATURE.

AMBIENT TEMPERATURE - TO BE MEASURED AT THE AIR CLEANER AIR INLET DURING NORMAL ENGINE OPERATION.

NORMAL TEMPERATURE - THE NORMAL TEMPERATURE AT VARIOUS SPECIFIC ALTITUDE LEVELS FOUND ON TM2001.

**SOUND DEFINITIONS:**

Sound Power : [DM8702](#)

Sound Pressure : [TM7080](#)

Date Released : 03/21/12

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