

# MARINE ENGINE PERFORMANCE DATA

## [REA02228]

OCTOBER 03, 2023

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Performance Number: DM7298

Change Level: 01 

<b>Sales Model:</b> 3412DDITA	<b>Combustion:</b> DI	<b>Aspr:</b> TA
<b>Engine Power:</b> 632.0 KW	<b>Speed:</b> 1,800 RPM	<b>After Cooler:</b> JWAC
<b>Manifold Type:</b> W/C	<b>Governor Type:</b>	<b>After Cooler Temp(C):</b> --
<b>Turbo Quantity:</b> 2	<b>Engine App:</b> MP	<b>Turbo Arrangement:</b>
<b>Application Type:</b> M PROP ENG	<b>Engine Rating:</b> MP	<b>Strategy:</b>
<b>Rating Type:</b> B RATING (HEAVY DUTY)	<b>Certification:</b> IMO - 2000 - 2006 EPA MAR-T1 2004 - 2010	

### General Performance Data : Curve 1: Zone 1

ENGINE SPEED RPM	ENGINE POWER BKW	ENGINE TORQUE N.M	ENGINE BMEP KPA	FUEL BSFC G/BKW-HR	FUEL RATE LPH	INTAKE MFLD TEMP DEG C	INTAKE MFLD P KPA	INTAKE AIR FLOW M3/MIN	EXH MFLD TEMP DEG C	EXH STACK TEMP DEG C	EXH GAS FLOW M3/MIN
1800	559.0	2,966	1,161	209.200	139.4	83.9	132.8	50.7	491.1	348.0	111.5
1700	561.3	3,153	1,234	208.900	139.8	84.1	130.6	48.0	509.5	365.5	108.8
1600	547.3	3,266	1,279	209.000	136.4	83.4	121.4	43.9	525.6	383.5	102.5
1500	520.4	3,313	1,297	209.500	130.0	82.5	109.6	39.4	540.1	401.5	94.7
1400	459.9	3,137	1,228	210.000	115.2	81.0	87.2	33.1	540.3	411.7	80.7
1300	404.5	2,971	1,163	211.200	101.8	80.1	69.9	27.9	540.0	420.4	69.0
1200	353.8	2,815	1,102	213.100	89.9	79.4	56.1	23.5	540.2	427.7	59.0
1100	304.9	2,647	1,036	215.300	78.2	78.9	45.0	20.0	539.8	429.1	50.5
1000	249.1	2,378	931	217.100	64.4	78.3	32.5	16.6	515.7	412.4	40.9
900	204.2	2,166	848	219.100	53.3	78.0	23.3	13.8	491.0	394.8	32.9
600	122.0	1,941	760	232.500	33.8	77.2	12.9	7.8	434.6	324.0	16.7

### General Performance Data : Curve 2: Zone 1-2

ENGINE SPEED RPM	ENGINE POWER BKW	ENGINE TORQUE N.M	ENGINE BMEP KPA	FUEL BSFC G/BKW-HR	FUEL RATE LPH	INTAKE MFLD TEMP DEG C	INTAKE MFLD P KPA	INTAKE AIR FLOW M3/MIN	EXH MFLD TEMP DEG C	EXH STACK TEMP DEG C	EXH GAS FLOW M3/MIN
1800	632.0	3,353	1,313	212.500	160.1	86.3	158.8	55.9	525.2	366.0	126.7
1700	631.9	3,549	1,389	212.600	160.1	85.7	155.2	52.9	542.7	383.4	123.4
1600	616.4	3,679	1,440	212.500	156.1	84.7	145.6	48.8	558.6	401.6	117.1
1500	568.6	3,620	1,417	212.200	143.8	83.4	125.8	42.6	565.0	415.8	104.4
1400	501.5	3,421	1,339	212.200	126.8	81.8	100.5	35.5	565.1	427.0	88.5
1300	439.9	3,231	1,265	212.800	111.6	80.7	80.4	29.7	565.1	436.9	75.4
1200	381.0	3,032	1,187	214.000	97.2	79.8	63.4	24.7	565.1	445.4	63.6
1100	291.2	2,528	990	215.300	74.7	78.7	41.5	19.5	522.9	416.6	48.3
1000	252.8	2,414	945	216.900	65.4	78.4	33.4	16.7	521.6	416.8	41.5
900	204.2	2,166	848	219.300	53.4	78.0	23.3	13.8	491.0	394.8	32.9
600	122.0	1,941	760	232.500	33.8	77.2	12.9	7.8	434.6	324.0	16.7

**General Performance Data :Maximum Limit**

ENGINE SPEED RPM	ENGINE POWER BKW	ENGINE TORQUE N.M	ENGINE BMEP KPA	FUEL BSFC G/BKW-HR	FUEL RATE LPH	INTAKE MFLD TEMP DEG C	INTAKE MFLD P KPA	INTAKE AIR FLOW M3/MIN	EXH MFLD TEMP DEG C	EXH STACK TEMP DEG C	EXH GAS FLOW M3/MIN
1800	632.0	3,353	1,313	212.500	160.1	86.3	158.8	55.9	525.2	366.0	126.7
1700	631.9	3,549	1,389	212.600	160.1	85.7	155.2	52.9	542.7	383.4	123.4
1600	616.4	3,679	1,440	212.500	156.1	84.7	145.6	48.8	558.6	401.6	117.1
1500	568.6	3,620	1,417	212.200	143.8	83.4	125.8	42.6	565.0	415.8	104.4
1400	501.5	3,421	1,339	212.200	126.8	81.8	100.5	35.5	565.1	427.0	88.5
1300	439.9	3,231	1,265	212.800	111.6	80.7	80.4	29.7	565.1	436.9	75.4
1200	381.0	3,032	1,187	214.000	97.2	79.8	63.4	24.7	565.1	445.4	63.6
1100	291.2	2,528	990	215.300	74.7	78.7	41.5	19.5	522.9	416.6	48.3
1000	252.8	2,414	945	216.900	65.4	78.4	33.4	16.7	521.6	416.8	41.5
900	204.2	2,166	848	219.300	53.4	78.0	23.3	13.8	491.0	394.8	32.9
600	122.0	1,941	760	232.500	33.8	77.2	12.9	7.8	434.6	324.0	16.7

**General Performance Data :Prop Demand Curve P**

ENGINE SPEED RPM	ENGINE POWER BKW	ENGINE TORQUE N.M	ENGINE BMEP KPA	FUEL BSFC G/BKW-HR	FUEL RATE LPH	INTAKE MFLD TEMP DEG C	INTAKE MFLD P KPA	INTAKE AIR FLOW M3/MIN	EXH MFLD TEMP DEG C	EXH STACK TEMP DEG C	EXH GAS FLOW M3/MIN
1800	632.0	3,353	1,313	212.500	160.1	86.3	158.8	55.9	525.2	366.0	126.7
1700	532.4	2,991	1,171	207.600	131.7	83.4	120.8	45.9	495.8	358.1	103.0
1600	443.9	2,649	1,037	205.700	108.8	81.5	88.8	37.4	473.5	353.6	83.1
1500	365.7	2,328	911	206.400	90.0	80.1	63.7	30.6	453.5	348.4	67.3
1400	297.4	2,028	794	207.700	73.6	79.1	44.8	25.3	429.2	336.9	54.6
1300	238.1	1,749	685	208.900	59.3	78.5	31.2	21.1	396.5	317.2	44.3
1200	187.3	1,490	583	210.400	47.0	77.9	21.2	17.9	359.4	292.3	36.0
1100	144.2	1,252	490	213.300	36.7	77.5	13.8	15.4	322.1	266.0	29.4
1000	108.4	1,035	405	218.600	28.2	77.2	8.6	13.2	284.5	238.8	23.7
900	79.0	838	328	227.300	21.4	76.8	5.2	11.2	248.2	210.7	19.0
600	23.4	373	146	276.000	7.7	75.7	0.4	6.3	153.6	133.9	8.9

**General Performance Data :Max Power Curve M**

ENGINE SPEED RPM	ENGINE POWER BKW	ENGINE TORQUE N.M	ENGINE BMEP KPA	FUEL BSFC G/BKW-HR	FUEL RATE LPH	INTAKE MFLD TEMP DEG C	INTAKE MFLD P KPA	INTAKE AIR FLOW M3/MIN	EXH MFLD TEMP DEG C	EXH STACK TEMP DEG C	EXH GAS FLOW M3/MIN
1800	632.0	3,353	1,313	212.500	160.1	86.3	158.8	55.9	525.2	366.0	126.7
1700	631.9	3,549	1,389	212.400	160.0	85.7	155.2	52.9	542.7	383.4	123.4
1600	616.4	3,679	1,440	212.700	156.3	84.7	145.6	48.8	558.6	401.6	117.1
1500	591.3	3,764	1,474	213.600	150.5	83.9	133.6	44.1	576.6	422.4	109.0
1400	572.3	3,904	1,528	215.500	147.0	83.5	125.3	39.8	604.0	449.5	102.8
1300	541.2	3,975	1,556	217.400	140.3	82.8	113.3	35.2	631.5	478.6	94.8
1200	494.2	3,933	1,540	217.800	128.3	81.9	97.5	30.3	656.4	506.7	84.8
1100	291.2	2,528	990	217.100	75.4	78.7	41.5	19.5	522.9	416.6	48.3
1000	252.8	2,414	945	217.000	65.4	78.4	33.4	16.7	521.6	416.8	41.5
900	204.2	2,166	848	218.600	53.2	78.0	23.3	13.8	491.0	394.8	32.9
600	122.0	1,941	760	232.500	33.8	77.2	12.9	7.8	434.6	324.0	16.7

**Engine Heat Rejection Data :Maximum Limit**

ENGINE SPEED RPM	ENGINE POWER BKW	REJ TO JW KW	REJ TO ATMOS KW	REJ TO EXHAUST KW	EXH RCOV TO 177C KW	FROM OIL CLR KW	FROM AFT CLR KW	WORK ENERGY KW	LHV ENERGY KW	HHV ENERGY KW
1800	632.0	522.0	44.0	517.0	232.0	86.0	75.0	632.0	1,610.0	1,715.0
1700	631.9	551.0	43.0	499.0	230.0	86.0	70.0	632.0	1,619.0	1,725.0
1600	616.4	551.0	42.0	446.0	209.0	83.0	60.0	616.0	1,555.0	1,656.0
1500	568.6	522.0	43.0	392.0	185.0	76.0	42.0	569.0	1,432.0	1,526.0
1400	501.5	479.0	41.0	346.0	165.0	68.0	24.0	501.0	1,284.0	1,367.0
1300	439.9	387.0	42.0	329.0	163.0	60.0	13.0	440.0	1,124.0	1,197.0
1200	381.0	302.0	42.0	297.0	151.0	51.0	5.0	381.0	959.0	1,022.0
1100	291.2	239.0	38.0	280.0	142.0	42.0	-3.0	291.0	796.0	848.0
1000	252.8	189.0	34.0	221.0	111.0	35.0	-4.0	253.0	655.0	697.0
900	204.2	148.0	30.0	193.0	94.0	29.0	-6.0	204.0	541.0	576.0
600	122.0	83.0	28.0	130.0	54.0	18.0	-5.0	122.0	340.0	363.0

**EMISSIONS DATA**

IMO - 2000 - 2006 \*\*\*\*\* L1

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 compression-ignition emission regulations.

LOCALITY AGENCY/LEVEL

U. S. (incl Calif) EPA/TIER-1

EPA MAR-T1 2004 - 2010 \*\*\*\*\* L1

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 compression-ignition emission regulations.

LOCALITY AGENCY/LEVEL

U. S. (incl Calif) EPA/TIER-1

REFERENCE EXHAUST STACK DIAMETER	203 MM
WET EXHAUST MASS	4,118.0 KG/HR
WET EXHAUST FLOW (366.00 C STACK TEMP)	126.80 M3/MIN
WET EXHAUST FLOW RATE ( 0 DEG C AND 101.2 KPA)	54.17 M3/MIN
DRY EXHAUST FLOW RATE ( 0 DEG C AND 101.2 KPA)	48.57 M3/MIN
FUEL FLOW RATE	160 L/HR

**RATED SPEED "Potential site variation"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BKW	TOTAL NOX (AS NO2) G/HR	TOTAL CO G/HR	TOTAL HC G/HR	PART MATTER G/HR	OXYGEN IN EXHAUST PERCENT
1800	100	632.0	5,241.00	388.00	106.00	134.10	10.9000
1800	75	474.0	4,863.00	310.00	86.00	75.30	11.9000
1800	50	316.0	3,934.00	304.00	79.00	62.00	13.1000
1800	25	158.0	2,187.00	281.00	53.00	43.30	15.3000
1800	10	63.2	1,227.00	391.00	80.00	38.00	17.3000

**RATED SPEED "Potential site variation"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BKW	TOTAL NOX (AS NO2) mg/norm cu M @ %5 O2	TOTAL CO mg/norm cu M @ %5 O2	TOTAL HC mg/norm cu M @ %5 O2	PART MATTER mg/norm cu M @ %5 O2	OXYGEN IN EXHAUST PERCENT
1800	100	632.0	3,164.3	231.5	58.1	66.400	10.9000
1800	75	474.0	3,989.4	252.8	65.2	51.900	11.9000
1800	50	316.0	4,776.4	368.6	89.9	64.600	13.1000
1800	25	158.0	4,965.1	675.5	122.3	88.800	15.3000
1800	10	63.2	5,889.7	2,752.7	570.2	211.100	17.3000

**RATED SPEED "Potential site variation"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BKW	TOTAL NOX (AS NO2) PPM @ %5 O2	TOTAL CO PPM @ %5 O2	TOTAL HC PPM @ %5 O2	OXYGEN IN EXHAUST PERCENT
1800	100	632.0	1,269	169	94	10.9000
1800	75	474.0	1,625	186	104	11.9000
1800	50	316.0	1,930	266	140	13.1000
1800	25	158.0	1,849	425	163	15.3000
1800	10	63.2	1,766	1,012	422	17.3000

**RATED SPEED "Potential site variation"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BKW	TOTAL NOX (AS NO2) G/HP-HR	TOTAL CO G/HP-HR	TOTAL HC G/HP-HR	PART MATTER G/HP-HR	OXYGEN IN EXHAUST PERCENT
1800	100	632.0	6.18	0.46	0.13	0.158	10.9000
1800	75	474.0	7.65	0.49	0.14	0.119	11.9000
1800	50	316.0	9.28	0.72	0.19	0.146	13.1000
1800	25	158.0	10.32	1.33	0.25	0.204	15.3000
1800	10	63.2	14.48	4.62	0.94	0.449	17.3000

**RATED SPEED "Nominal Data"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BKW	TOTAL NOX (AS NO2) G/HR	TOTAL CO G/HR	TOTAL HC G/HR	TOTAL CO2 KG/HR	PART MATTER G/HR	OXYGEN IN EXHAUST PERCENT
1800	100	632.0	4,332.00	207.00	56.00	401.0	68.80	10.9000
1800	75	474.0	4,019.00	166.00	45.00	297.0	38.60	11.9000
1800	50	316.0	3,251.00	163.00	42.00	204.8	31.80	13.1000
1800	25	158.0	1,808.00	150.00	28.00	116.8	22.20	15.3000
1800	10	63.2	1,014.00	209.00	42.00	67.8	19.50	17.3000

**RATED SPEED "Nominal Data"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BKW	TOTAL NOX (AS NO2) mg/norm cu M @ %5 O2	TOTAL CO mg/norm cu M @ %5 O2	TOTAL HC mg/norm cu M @ %5 O2	PART MATTER mg/norm cu M @ %5 O2	OXYGEN IN EXHAUST PERCENT
1800	100	632.0	2,615.1	123.8	30.7	34.0	10.9000
1800	75	474.0	3,297.0	135.2	34.5	26.6	11.9000
1800	50	316.0	3,947.5	197.1	47.5	33.1	13.1000
1800	25	158.0	4,103.4	361.2	64.7	45.5	15.3000
1800	10	63.2	4,867.5	1,472.0	301.7	108.3	17.3000

**RATED SPEED "Nominal Data"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BKW	TOTAL NOX (AS NO2) PPM @ %5 O2	TOTAL CO PPM @ %5 O2	TOTAL HC PPM @ %5 O2	OXYGEN IN EXHAUST PERCENT
1800	100	632.0	1,049	90	50	10.9000
1800	75	474.0	1,343	100	55	11.9000
1800	50	316.0	1,595	142	74	13.1000
1800	25	158.0	1,528	227	86	15.3000
1800	10	63.2	1,459	541	223	17.3000

**RATED SPEED "Nominal Data"**

ENGINE SPEED RPM	PERCENT LOAD	ENGINE POWER BKW	TOTAL NOX (AS NO2) G/HP-HR	TOTAL CO G/HP-HR	TOTAL HC G/HP-HR	PART MATTER G/HP-HR	OXYGEN IN EXHAUST PERCENT
1800	100	632.0	5.11	0.25	0.07	0.08	10.9000
1800	75	474.0	6.32	0.26	0.07	0.06	11.9000
1800	50	316.0	7.67	0.38	0.10	0.08	13.1000
1800	25	158.0	8.53	0.71	0.13	0.10	15.3000
1800	10	63.2	11.97	2.47	0.50	0.23	17.3000

**Altitude Capability Data(Corrected Power Altitude Capability)**

Ambient Operating Temp. Altitude	10 C	20 C	30 C	40 C	50 C	NORMAL
0 M	632 kw	632 kw	632 kw	632 kw	632 kw	632 kw
300 M	632 kw	632 kw	632 kw	632 kw	632 kw	632 kw
500 M	632 kw	632 kw	632 kw	632 kw	632 kw	632 kw
1,000 M	632 kw	632 kw	632 kw	632 kw	617 kw	632 kw
1,500 M	632 kw	632 kw	619 kw	599 kw	580 kw	632 kw
2,000 M	623 kw	601 kw	582 kw	563 kw	546 kw	607 kw
2,500 M	585 kw	565 kw	546 kw	529 kw	513 kw	577 kw
3,000 M	549 kw	531 kw	513 kw	497 kw	481 kw	547 kw
3,500 M	515 kw	498 kw	481 kw	466 kw	451 kw	520 kw
4,000 M	483 kw	467 kw	451 kw	437 kw	423 kw	493 kw
4,500 M	452 kw	437 kw	422 kw	409 kw	396 kw	467 kw

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

**Identification Reference and Notes**

Engine Arrangement:	2388191	Lube Oil Press @ Rated Spd(KPA):	--
Effective Serial No:	REA00001	Piston Speed @ Rated Eng SPD(M/Sec):	9.1
Primary Engine Test Spec:	0K5589	Max Operating Altitude(M):	1,600.0
Performance Parm Ref:	TM0015	PEEC Elect Control Module Ref	
Performance Data Ref:	DM7298	PEEC Personality Cont Mod Ref	
Aux Coolant Pump Perf Ref:			
Cooling System Perf Ref:		Turbocharger Model	S410W021-1.04 VOW
Certification Ref:	IMO -	Fuel Injector	
Certification Year:	2000	Timing-Static (DEG):	--
Compression Ratio:	15.0	Timing-Static Advance (DEG):	--
Combustion System:	DI	Timing-Static (MM):	--
Aftercooler Temperature (C):	--	Unit Injector Timing (MM):	--
Crankcase Blowby Rate(M3/H):	--	Torque Rise (percent)	--
Fuel Rate (Rated RPM) No Load(L/HR):	--	Peak Torque Speed RPM	--
Lube Oil Press @ Low Idle Spd(KPA):	--	Peak Torque (NM):	--

**Reference  
Number: DM7298**

IMO - 20002006L1EPA MAR-T1 20042010L1IM0 -

**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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Caterpillar Confidential: **Green**  
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