



GEN SET PACKAGE PERFORMANCE DATA  
25Z

JUNE 2013

Performance Number: TM

Sales Model: 3516-DITA Combustion: DI \_\_\_\_\_ Aspr \_\_\_\_\_

Engine Power:

1400 W/F 1435 W/O F Speed: 1,800 RPM After Cooler: JWAC  
EKW EKW  
2,018 HP

Manifold Type: DRY Governor Type: WDWRD After Cooler Temp(F): 180

Turbo Quantity: 4 Engine App: GP Turbo Arrangement: Parallel

Hertz: 60 Application Type: PACKAGE-DIE Engine Rating: PGS Strategy:

Rating Type: STANDBY Certification:

General Performance Data

GEN W/F EKW	PERCENT LOAD	ENGINE POWER BHP	ENGINE BMEP PSI	FUEL BSFC LB/BHP	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	
1,400		2017	210.74		0.35	100.97	197.96	53.66	4,788.67	1,106.42	912.56	12,745.08
1,260	90	1818	190		0.35	91.85	194.72	47.44	4,509.69	1,065.02	893.3	11,819.83
1,120	80	1620	169.41		0.36	82.61	191.66	41.28	4,230.7	1,024.16	867.92	10,866.33
1,050	75	1522	159.11		0.36	78.06	189.68	38.23	4,071.79	1,003.64	855.32	10,368.4
980	70	1424	148.81		0.36	73.52	187.52	35.24	3,909.34	982.58	842.18	9,866.93
840	60	1229	128.51		0.37	64.51	182.12	29.49	3,591.5	939.38	814.64	8,856.93
700	50	1035	108.2		0.38	55.48	174.56	24.02	3,277.2	893.48	780.26	7,832.8
560	40	845	88.33	0.39	46.52	164.66	19.16	2,966.43		841.1	731.12	6,815.74
420	30	652	68.02		0.4	37.41	154.76	14.69	2,655.67	779.72	672.98	5,781.02
350	25	554	57.87		0.41	32.81	149.9	12.62	2,496.75	745.16	640.4	5,261.89
280	20	455	47.57		0.44	28.42	148.64	10.75	2,330.77	702.14	606.38	4,767.48
140	10	255	26.69	0.54	19.79	149.54		7.4	1,998.81	602.06	531.68	3,799.86

Engine Heat Rejection Data

GEN W/F E KW	PERCENT LOAD	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	
1,400		100	46,917.6	7,791.2	90,707.5	50,500.4	11,544.6	10,919.0	85,532.3	216,731.1	230,834.8
1,260		90	42,424.9	7,677.4	82,518.2	45,780.2	10,464.1	8,473.6	77,115.5	197,111.0	209,963.6
1,120		80	37,989.1	7,563.7	74,442.7	40,718.8	9,440.4	6,312.6	68,698.8	177,263.4	188,864.9
1,050		75	35,771.2	7,506.8	70,461.8	38,159.7	8,928.6	5,345.8	64,547.3	167,538.7	178,457.7
980		70	33,610.1	7,506.8	66,480.9	35,657.4	8,416.7	4,435.9	60,395.8	157,813.9	168,107.4
840		60	29,344.9	7,393.1	58,576.0	30,766.6	7,393.1	2,843.5	52,149.7	138,421.3	147,463.6
700		50	25,193.4	7,279.3	50,784.8	25,818.9	6,369.4	1,535.5	43,903.6	119,028.7	126,819.8
560	40	21,098.7	7,165.6	43,164.2	20,586.9	5,345.8		455.0	35,828.0	99,806.6	106,346.7
420		30	17,004.1	7,051.9	35,429.9	15,468.6	4,379.0	-341.2	27,638.8	80,243.4	85,532.3
350		25	14,956.8	7,051.9	31,505.9	12,966.3	3,867.1	-682.4	23,487.3	70,404.9	75,011.4
280		20	12,909.5	6,995.0	27,695.6	10,634.7	3,355.3	-909.9	19,278.9	60,964.5	64,945.4
140		10	8,871.7	6,881.3	19,961.3	6,369.4	2,331.7	-1,194.3	10,805.3	42,481.8	45,268.4

EXHAUST Sound Data: 4.92 FEET

GEN W/F E KW	PERCENT LOAD	OVERALL SOUND DB(A)	OBCF 63 HZ DB	OBCF 125 HZ DB	OBCF 250 HZ DB	OBCF 500 HZ DB	OBCF 1000 HZ DB	OBCF 2000 HZ DB	OBCF 4000 HZ DB	OBCF 8000 HZ DB
1,400	100	113	104	118	114	106	105	106	106	104
1,260	90	112	103	117	113	105	104	105	105	103
1,120	80	112	102	117	113	105	103	104	104	102
1,050	75	111	101	116	112	104	103	104	104	102
980	70	111	101	116	112	104	102	104	103	101
840	60	110	100	115	111	103	101	103	102	100
700	50	109	99	114	110	102	100	102	101	99
560	40	108	98	113	109	101	99	100	100	98
420	30	106	97	111	107	99	98	99	99	97
350	25	106	96	111	107	99	97	98	98	96
280	20	105	95	110	106	98	96	98	97	96
140	10	103	93	108	104	96	94	96	96	94

EXHAUST Sound Data: 22.97 FEET

GEN W/F E KW	PERCENT LOAD	OVERALL SOUND DB(A)	OBCF	OBCF	OBCF	OBCF	OBCF	OBCF	OBCF	OBCF
			63HZ DB	125HZ DB	250HZ DB	500HZ DB	1000HZ DB	2000HZ DB	4000HZ DB	8000HZ DB
1,400	100	100	91	108	102	94	92	93	92	90
1,260	90	99	91	107	101	93	91	92	92	89
1,120	80	98	90	106	100	92	90	91	91	88
1,050	75	98	89	106	100	91	90	90	90	88
980	70	97	89	105	100	91	89	90	90	87
840	60	96	88	104	99	90	88	89	89	86
700	50	95	87	103	98	89	87	88	88	85
560	40	94	86	102	96	88	86	87	87	84
420	30	93	84	101	95	87	85	86	86	83
350	25	92	84	100	94	86	84	85	85	82
280	20	91	83	99	94	85	83	84	84	81
140	10	90	81	98	92	83	82	82	82	79

EXHAUST Sound Data: 49.21 FEET

GEN W/F E KW	PERCENT LOAD	OVERALL SOUND DB(A)	OBCF	OBCF	OBCF	OBCF	OBCF	OBCF	OBCF	OBCF
			63HZ DB	125HZ DB	250HZ DB	500HZ DB	1000HZ DB	2000HZ DB	4000HZ DB	8000HZ DB
1,400	100	93	85	101	96	87	85	86	86	83
1,260	90	92	84	100	95	86	84	85	85	82
1,120	80	92	83	100	94	85	84	84	84	81
1,050	75	91	83	99	93	85	83	84	84	81
980	70	91	82	99	93	84	83	83	83	81
840	60	90	81	98	92	83	82	82	82	80
700	50	89	80	97	91	82	81	81	81	79
560	40	88	79	96	90	81	80	80	80	77
420	30	86	78	94	89	80	78	79	79	76
350	25	86	77	94	88	79	78	78	78	75
280	20	85	76	93	87	78	77	78	77	75
140	10	83	74	91	85	77	75	76	76	73

MECHANICAL Sound Data: 3.28 FEET

GEN W/F E KW	PERCENT LOAD	OVERALL SOUND DB(A)	OBCF	OBCF	OBCF	OBCF	OBCF	OBCF	OBCF	OBCF
			63HZ DB	125HZ DB	250HZ DB	500HZ DB	1000HZ DB	2000HZ DB	4000HZ DB	8000HZ DB
1,400	100	111	113	123	114	105	101	101	99	103
1,260	90	111	113	123	114	105	101	101	99	103
1,120	80	111	113	123	114	105	101	101	99	103
1,050	75	111	113	123	114	105	101	101	99	103
980	70	111	113	123	114	105	101	101	99	103
840	60	111	113	123	114	105	101	101	99	103
700	50	111	113	123	114	105	101	101	99	103
560	40	111	113	123	114	105	101	101	99	103
420	30	111	113	123	114	105	101	101	99	103
350	25	111	113	123	114	105	101	101	99	103
280	20	111	113	123	114	105	101	101	99	103
140	10	111	113	123	113	105	100	99	97	101

MECHANICAL Sound Data: 22.97 FEET

GEN W/F E KW	PERCENT LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCJ 8000HZ DB
1,400	100	98	100	109	100	92	89	90	87	91
1,260	90	98	100	109	100	92	89	90	87	91
1,120	80	98	100	109	100	92	89	90	87	91
1,050	75	98	100	109	100	92	89	90	87	91
980	70	98	100	109	100	92	89	90	87	91
840	60	98	100	109	100	92	89	90	87	91
700	50	98	100	109	100	92	89	90	87	91
560	40	98	100	109	100	92	89	90	87	91
420	30	98	100	109	100	92	89	90	87	91
350	25	98	100	109	100	92	89	90	87	91
280	20	98	100	109	100	92	89	90	87	91
140	10	97	100	109	100	92	88	88	85	90

MECHANICAL Sound Data: 49.21 FEET

GEN W/F E KW	PERCENT LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
1,400	100	92	94	103	94	86	84	84	82	86
1,260	90	92	94	103	94	86	84	84	82	86
1,120	80	92	94	103	94	86	84	84	82	86
1,050	75	92	94	103	94	86	84	84	82	86
980	70	92	94	103	94	86	84	84	82	86
840	60	92	94	103	94	86	84	84	82	86
700	50	92	94	103	94	86	84	84	82	86
560	40	92	94	103	94	86	84	84	82	86
420	30	92	94	103	94	86	84	84	82	86
350	25	92	94	103	94	86	84	84	82	86
280	20	92	94	103	94	86	84	84	82	86
140	10	91	94	103	94	86	82	82	80	84

EMISSIONS DATA

Certification:

To properly apply this data you must refer to performance parameter DM1176 for additional information...

REFERENCE EXHAUST STACK DIAMETER	12 IN
WET EXHAUST MASS	21,794.9 LB/HR
WET EXHAUST FLOW (912.20 F STACK TEMP )	12,755.67 CFM
WET EXHAUST FLOW RATE ( 32 DEG F AND 29.98 IN HG )	4,579.00 STD CFM
DRY EXHAUST FLOW RATE ( 32 DEG F AND 29.98 IN HG )	4,195.39 STD CFM
FUEL	FLOW RATE 100 GAL/HR

RATED SPEED "Potential site variation"

GEN PWR E KW	PERCENT LOAD	ENGINE POWER BHP	TOTAL NOX (AS NO2) LB/HR	TOTAL CO LB/HR	TOTAL HC LB/HR	TOTAL CO2 LB/HR	PART MATTER LB/HR	OXYGEN IN EXHAUST PERCENT	DRY SMOKE OPACITY PERCENT	BOSCH SMOKE NUMBER
1,400	100			2017	68.9700	8.9200	1.1200	.5300	10.5000	4.4000 1.3300
1,050	75			1522	56.8500	5.8700	1.2500	.5200	11.4000	3.3000 1.3100
700	50			1035	39.4300	3.8900	1.1300	.5000	12.4000	2.7000 1.3100
350	25			554	20.9500	3.4800	1.0000	.4800	14.1000	2.7000 1.2900
140	10			255	12.1300	6.9100	1.1700	.6200	16.2000	3.9000 1.2900

RATED SPEED "Nominal Data"

GEN PWR E KW	PERCENT LOAD	ENGINE POWER BHP	TOTAL NOX (AS NO2) LB/HR	TOTAL CO LB/HR	TOTAL HC LB/HR	TOTAL CO2 LB/HR	PART MATTER LB/HR	OXYGEN IN EXHAUST PERCENT	DRY SMOKE OPACITY PERCENT	BOSCH SMOKE NUMBER
1,400	100			2017	57.4800	4.9600				.8500 2,131.4
.3800	10.5000	4.4000	1.3300							
1,050	75			1522	47.3700	3.2600				.9400 1,638.6
.3700	11.4000	3.3000	1.3100							
700	50			1035	32.8600	2.1600				.8500 1,163.6
.3600	12.4000	2.7000	1.3100							
350	25			554	17.4600	1.9400	.7500			687.7
.3400	14.1000	2.7000	1.2900							
140	10			255	10.1100	3.8400				.8800 409
.4400	16.2000	3.9000	1.2900							

Altitude Capability Data(Corrected Power Altitude Capability)

Ambient Operating Temp.	50 F	68 F	86 F	104 F	122 F	NORMA
Altitude						
0 F	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24
984.25 F	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24
1,640.42 F	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24
3,280.84 F	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24
4,921.26 F	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24
6,561.68 F	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24
8,202.1 F	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,018.24 hp	2,002.14 hp	2,018.24
9,842.52 F	2,018.24 hp	2,018.24 hp	2,003.48 hp	1,939.11 hp	1,880.11 hp	2,018.24
10,498.69 F	2,018.24 hp	2,018.24 hp	1,952.53 hp	1,890.84 hp	1,831.83 hp	2,018.24

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

Identification Reference and Notes

Engine Arrangement:	6I2939 Lube Oil Press @ Rated Spd(PSI):	55.8
Effective Serial No:	25Z Piston Speed @ Rated Eng SPD (FT/Min):	2,244.1
Primary Engine Test Spec:	2T4703 Max Operating Altitude(FT):	11,643.7
Performance Parm Ref:	TM5739 PEEC Elect Control Module Ref	
Performance Data Ref:	TM9338 PEEC Personality Cont Mod Ref	
Aux Coolant Pump Perf Ref:		
Cooling System Perf Ref:	TD3099 Turbocharger Model	TV8302-1.39
Certification Ref:	Fuel Injector	1113718
Certification Year:	Timing-Static (DEG):	
Compression Ratio:	13.0 Timing-Static Advance (DEG):	-
Combustion System:	DI Timing-Static (MM):	--
Aftercooler Temperature (F):	180 Unit Injector Timing (MM):	86.6
Crankcase Blowby Rate(CFH):	1,010.0 Torque Rise (percent)	-
Fuel Rate (Rated RPM) No Load (Gal/HR):		-
Lube Oil Press @ Low Idle Spd(PSI):	20.0 Peak Torque (LB.FT):	--

Reference  
Number: TM9338

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Parameters  
Reference: TM5739

## GEN SET - PACKAGED - DIESEL

### TOLERANCES:

AMBIENT AIR CONDITIONS AND FUEL USED WILL AFFECT THESE VALUES. EACH OF THE VALUES MAY VARY IN ACCORDANCE WITH THE FOLLOWING TOLERANCES.

Power	+/-	3%
Exhaust Stack Temperature	+/-	8%
Generator Power	+/-	5%
Inlet Airflow	+/-	5%
Intake Manifold Pressure-gage	+/-	10%
Exhaust Flow	+/-	6%
Specific Fuel Consumption	+/-	3%
Fuel Rate	+/-	5%
Heat Rejection	+/-	5%
Heat Rejection - Exhaust Only	+/-	10%

### T4i Tolerance Exceptions

C15: Power Tolerance +4% , -0%

C27: Power Tolerance +0% , -4%

### CONDITIONS:

ENGINE PERFORMANCE IS CORRECTED TO INLET AIR STANDARD CONDITIONS OF 99 KPA (29.31 IN HG) AND 25 DEG C (77 DEG F).

THESE VALUES CORRESPOND TO THE STANDARD ATMOSPHERIC PRESSURE AND TEMPERATURE IN ACCORDANCE WITH SAE J1349. 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 J1349, ISO 3046-2 & 8665 & 2288 & 9249 & 1585, EEC 80/1269 AND DIN70020 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 IS FOUND ON TM2001.

THE GENERATOR POWER CURVE TABULAR DATA REPRESENTS THE NET ELECTRICAL POWER OUTPUT OF THE GENERATOR.

**GENERATOR SET RATINGS****EMERGENCY STANDBY POWER (ESP)**

OUTPUT AVAILABLE WITH VARYING LOAD FOR THE DURATION OF AN EMERGENCY OUTAGE. AVERAGE POWER OUTPUT IS 70% OF THE ESP RATING. TYPICAL OPERATION IS 50 HOURS PER YEAR, WITH MAXIMUM EXPECTED USAGE OF 200 HOURS PER YEAR.

**STANDBY POWER RATING**

OUTPUT AVAILABLE WITH VARYING LOAD FOR THE DURATION OF AN EMERGENCY OUTAGE. AVERAGE POWER OUTPUT IS 70% OF THE STANDBY POWER RATING. TYPICAL OPERATION IS 200 HOURS PER YEAR, WITH MAXIMUM EXPECTED USAGE OF 500 HOURS PER YEAR.

**PRIME POWER RATING**

OUTPUT AVAILABLE WITH VARYING LOAD FOR AN UNLIMITED TIME. AVERAGE POWER OUTPUT IS 70% OF THE PRIME POWER RATING. TYPICAL PEAK DEMAND IS 100% OF PRIME RATED KW WITH 10% OVERLOAD CAPABILITY FOR EMERGENCY USE FOR A MAXIMUM OF 1 HOUR IN 12. OVERLOAD OPERATION CANNOT EXCEED 25 HOURS PER YEAR.

**[CONTINUOUS](#) POWER RATING**

OUTPUT AVAILABLE WITH NON-VARYING LOAD FOR AN UNLIMITED TIME. AVERAGE POWER OUTPUT IS 70-100% OF THE CONTINUOUS POWER RATING. TYPICAL PEAK DEMAND IS 100% OF CONTINUOUS RATED KW FOR 100% OF OPERATING HOURS.

**SOUND DEFINITIONS:**

Sound Power : [DM8702](#)

Sound Pressure : [TM7080](#)