



GEN SET PACKAGE PERFORMANCE DATA [6HN00429]

SEPTEMBER 30, 2020

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Performance Number: DM1394

Change Level: ▼

Sales Model: 3516BDITA

Combustion: DI

Aspr: TA

Engine Power:

2000 W/F EKW 2060 W/O F EKW
2,876 HP

Speed: 1,800 RPM

After Cooler: SCAC

Manifold Type: DRY

Governor Type: ADEM

After Cooler Temp(F): 140

Turbo Quantity: 4

Engine App: GP

Turbo Arrangement: Parallel

Hertz: 60

Application Type: PACKAGE-DIE

Engine Rating: PGS

Strategy: Emissions Strategy

Rating Type: STANDBY

Certification: N-C 1970 - 2100

General Performance Data

GEN W/F EKW	PERCENT LOAD	ENGINE POWER BHP	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
2,000	100	2848	297.62	0.36	145.4	186.44	81.61	6,173.01	1,245.38	962.78	17,053.47
1,800	90	2565	268.03	0.35	129.58	181.04	75.51	5,918.74	1,162.04	893.12	15,513.75
1,600	80	2286	238.88	0.35	114.33	175.28	67.73	5,565.6	1,089.68	838.4	13,981.09
1,500	75	2146	224.23	0.35	106.99	172.22	63.4	5,360.77	1,057.82	815	13,211.23
1,400	70	2007	209.73	0.35	99.78	169.34	58.93	5,138.29	1,028.12	794.48	12,441.37
1,200	60	1730	180.72	0.35	86.36	163.94	49.69	4,647.42	978.08	771.8	11,028.78
1,000	50	1454	151.86	0.35	73.39	159.26	40.45	4,138.88	928.4	750.02	9,637.38
800	40	1183	123.57	0.36	60.89	155.48	31.45	3,619.76	874.58	728.06	8,277.77
600	30	908	94.86	0.37	48.42	152.06	22.57	3,086.5	804.92	701.96	6,904.02
500	25	769	80.35	0.38	42.21	150.62	18.18	2,818.11	764.42	687.38	6,215.39
400	20	629	65.7	0.4	36.03	149.36	14.1	2,567.38	717.98	665.42	5,544.41
200	10	346	36.26	0.48	23.88	147.02	8.03	2,207.17	594.5	569.66	4,357.83

General Performance Data 2

GEN W/F EKW	PERCENT LOAD	ENGINE POWER BHP	COMPRESS OUT PRESS IN- HG	COMPRESS OUT TEMP DEG F
2,000	100	2848	84.28	468.5
1,800	90	2565	78.03	436.28
1,600	80	2286	70.18	401.9
1,500	75	2146	65.89	384.62
1,400	70	2007	61.42	366.98
1,200	60	1730	51.94	331.52
1,000	50	1454	42.5	295.16
800	40	1183	33.26	256.64
600	30	908	24.11	215.96
500	25	769	19.57	195.26
400	20	629	15.34	175.64
200	10	346	9.09	143.42

Engine Heat Rejection Data

GEN W/F EKW	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
2,000	100	45,609.6	9,042.3	126,023.7	71,712.9	15,582.3	30,823.5	120,734.8	311,988.2	332,347.6
1,800	90	41,970.0	8,189.3	110,384.4	60,338.9	13,933.1	26,615.1	108,792.1	277,866.2	295,950.8
1,600	80	38,387.2	7,506.8	96,565.0	50,614.2	12,283.9	22,349.9	96,906.3	245,734.8	261,772.1
1,500	75	36,624.2	7,279.3	90,252.5	46,235.2	11,487.7	20,245.7	90,991.8	230,379.9	245,393.5
1,400	70	34,861.2	7,051.9	84,167.4	42,254.3	10,691.5	18,141.5	85,134.2	215,252.5	229,299.4
1,200	60	31,278.4	6,596.9	72,736.6	36,112.4	9,269.8	14,046.9	73,362.1	185,964.5	198,077.8
1,000	50	27,695.6	6,198.8	61,931.3	30,368.5	7,848.0	10,293.5	61,646.9	157,529.6	167,823.0
800	40	24,112.8	5,800.7	51,865.3	24,965.9	6,540.0	6,995.0	50,159.2	130,402.6	138,933.1
600	30	20,359.4	5,459.5	41,970.0	19,733.8	5,175.2	4,151.5	38,500.9	103,673.8	110,441.3
500	25	18,425.8	5,232.0	37,079.2	17,174.7	4,549.6	2,957.2	32,643.3	90,423.1	96,337.6
400	20	16,435.4	5,061.4	32,302.1	14,558.7	3,867.1	1,819.8	26,672.0	77,229.3	82,290.7
200	10	12,227.0	4,663.3	22,861.7	8,587.3	2,559.1	113.7	14,672.4	51,182.9	54,538.2

EXHAUST Sound Data: 4.92 FEET

GEN W/F EKW	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
2,000	100	116	107	121	117	109	108	109	109	107
1,800	90	115	106	120	116	108	107	108	108	106
1,600	80	114	105	119	115	107	106	107	107	105
1,500	75	114	104	119	115	107	105	107	106	105
1,400	70	113	104	118	114	106	105	106	106	104
1,200	60	112	102	117	113	105	104	105	105	103
1,000	50	111	101	116	112	104	102	104	103	102
800	40	110	100	115	111	103	101	102	102	100
600	30	108	98	113	109	101	99	101	101	99
500	25	107	97	112	108	100	99	100	100	98
400	20	106	96	111	107	99	98	99	99	97
200	10	104	94	109	105	97	95	97	97	95

EXHAUST Sound Data: 22.97 FEET

GEN W/F EKW	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
2,000	100	103	94	111	105	97	95	96	96	93
1,800	90	102	93	110	104	96	94	95	95	92
1,600	80	101	92	109	103	95	93	94	94	91
1,500	75	100	92	108	103	94	92	93	93	90
1,400	70	100	91	108	102	93	92	93	92	90
1,200	60	99	90	107	101	92	91	91	91	89
1,000	50	97	89	105	100	91	89	90	90	87
800	40	96	88	104	98	90	88	89	89	86
600	30	95	86	103	97	88	87	87	87	84
500	25	94	85	102	96	87	86	86	86	84
400	20	93	84	101	95	86	85	85	85	83
200	10	91	82	99	93	84	83	83	83	80

EXHAUST Sound Data: 49.21 FEET

GEN W/F EKW	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
2,000	100	96	88	104	99	90	88	89	89	86
1,800	90	95	87	103	98	89	87	88	88	85
1,600	80	94	86	102	97	88	86	87	87	84
1,500	75	94	85	102	96	87	86	87	86	84
1,400	70	93	85	101	95	87	85	86	86	83
1,200	60	92	84	100	94	86	84	85	85	82
1,000	50	91	82	99	93	84	83	84	83	81
800	40	90	81	98	92	83	82	82	82	79
600	30	88	79	96	90	82	80	81	81	78
500	25	87	79	95	89	81	79	80	80	77
400	20	86	78	94	88	80	78	79	79	76
200	10	84	75	92	86	77	76	77	76	74

MECHANICAL Sound Data: 3.28 FEET

GEN W/F EKW	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
2,000	100	111	113	123	114	105	101	101	99	103
1,800	90	111	113	123	114	105	101	101	99	103
1,600	80	111	113	123	114	105	101	101	99	103
1,500	75	111	113	123	114	105	101	101	99	103
1,400	70	111	113	123	114	105	101	101	99	103
1,200	60	111	113	123	114	105	101	101	99	103
1,000	50	111	113	123	114	105	101	101	99	103
800	40	111	113	123	114	105	101	101	99	103
600	30	111	113	123	114	105	101	101	99	103
500	25	111	113	123	114	105	101	101	99	103
400	20	111	113	123	114	105	101	101	99	103
200	10	111	113	123	114	105	101	101	99	103

MECHANICAL Sound Data: 22.97 FEET

GEN W/F EKW	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
2,000	100	98	100	109	100	92	89	90	87	91
1,800	90	98	100	109	100	92	89	90	87	91
1,600	80	98	100	109	100	92	89	90	87	91
1,500	75	98	100	109	100	92	89	90	87	91
1,400	70	98	100	109	100	92	89	90	87	91
1,200	60	98	100	109	100	92	89	90	87	91
1,000	50	98	100	109	100	92	89	90	87	91
800	40	98	100	109	100	92	89	90	87	91
600	30	98	100	109	100	92	89	90	87	91
500	25	98	100	109	100	92	89	90	87	91
400	20	98	100	109	100	92	89	90	87	91
200	10	98	100	109	100	92	89	90	87	91

MECHANICAL Sound Data: 49.21 FEET

GEN W/F EKW	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
2,000	100	92	94	103	94	86	84	84	82	86
1,800	90	92	94	103	94	86	84	84	82	86
1,600	80	92	94	103	94	86	84	84	82	86
1,500	75	92	94	103	94	86	84	84	82	86
1,400	70	92	94	103	94	86	84	84	82	86
1,200	60	92	94	103	94	86	84	84	82	86
1,000	50	92	94	103	94	86	84	84	82	86
800	40	92	94	103	94	86	84	84	82	86
600	30	92	94	103	94	86	84	84	82	86
500	25	92	94	103	94	86	84	84	82	86
400	20	92	94	103	94	86	84	84	82	86
200	10	92	94	103	94	86	84	84	82	86

EMISSIONS DATA

N-C 1970 - 2100 ***** N1

Non-Certified: This engine rating is not emission certified by any domestic or foreign agency.

REFERENCE EXHAUST STACK DIAMETER	12 IN
WET EXHAUST MASS	28,175.0 LB/HR
WET EXHAUST FLOW (962.60 F STACK TEMP)	17,067.59 CFM
WET EXHAUST FLOW RATE (32 DEG F AND 29.98 IN HG)	5,882.00 STD CFM
DRY EXHAUST FLOW RATE (32 DEG F AND 29.98 IN HG)	5,389.02 STD CFM
FUEL FLOW RATE	145 GAL/HR

RATED SPEED "Potential site variation"

GEN PWR EKW	PERCENT LOAD	ENGINE POWER BHP	TOTAL NOX (AS NO2) LB/HR	TOTAL CO LB/HR	TOTAL HC LB/HR	PART MATTER LB/HR	OXYGEN IN EXHAUST PERCENT	DRY SMOKE OPACITY PERCENT	BOSCH SMOKE NUMBER
2,000	100	2848	38.8300	6.9400	.8600	1.1000	9.9000	2.6000	1.2800
1,500	75	2146	31.2600	3.0700	1.6900	.7100	11.7000	1.9000	1.2800
1,000	50	1454	20.3600	2.6400	1.2000	.7700	12.7000	2.7000	1.2800
500	25	769	12.4100	2.5300	.8500	.6600	14.1000	4.0000	1.2900
200	10	346	8.8600	2.8600	.7600	.5900	16.1000	4.9000	1.3400

RATED SPEED "Nominal Data"

GEN PWR EKW	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
2,000	100	2848	32.3600	3.8600	.6400	3,233.5	.7900	9.9000	2.6000	1.2800
1,500	75	2146	26.0500	1.7100	1.2700	2,374.5	.5100	11.7000	1.9000	1.2800
1,000	50	1454	16.9600	1.4600	.9000	1,626.5	.5500	12.7000	2.7000	1.2800
500	25	769	10.3400	1.4100	.6400	934.6	.4700	14.1000	4.0000	1.2900
200	10	346	7.3800	1.5900	.5700	531.4	.4200	16.1000	4.9000	1.3400

Altitude Capability Data(Corrected Power Altitude Capability)

Ambient Operating Temp. Altitude	50 F	68 F	86 F	104 F	122 F	NORMAL
0 FT	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,876.49 hp
984.25 FT	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,876.49 hp
1,640.42 FT	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,876.49 hp
3,280.84 FT	2,876.49 hp	2,876.49 hp	2,876.49 hp	2,804.07 hp	2,716.91 hp	2,876.49 hp
4,921.26 FT	2,876.49 hp	2,817.48 hp	2,724.95 hp	2,637.79 hp	2,555.98 hp	2,812.12 hp
6,561.68 FT	2,743.73 hp	2,649.86 hp	2,562.69 hp	2,479.55 hp	2,403.11 hp	2,673.99 hp
8,202.1 FT	2,577.44 hp	2,488.93 hp	2,407.13 hp	2,330.69 hp	2,258.28 hp	2,539.89 hp
9,842.52 FT	2,419.2 hp	2,337.4 hp	2,259.62 hp	2,187.2 hp	2,120.15 hp	2,411.15 hp
10,498.69 FT	2,358.85 hp	2,278.39 hp	2,203.3 hp	2,132.22 hp	2,066.51 hp	2,361.54 hp

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

Identification Reference and Notes

Engine Arrangement:	1169866	Lube Oil Press @ Rated Spd(PSI):	55.8
Effective Serial No:	6HN01960	Piston Speed @ Rated Eng SPD(FT/Min):	2,244.1
Primary Engine Test Spec:	2T8240	Max Operating Altitude(FT):	4,176.5
Performance Parm Ref:	TM5739	PEEC Elect Control Module Ref	
Performance Data Ref:	DM1394	PEEC Personality Cont Mod Ref	
Aux Coolant Pump Perf Ref:			
Cooling System Perf Ref:		Turbocharger Model	BTV8501-1.23
Certification Ref:		Fuel Injector	2563663
Certification Year:		Timing-Static (DEG):	--
Compression Ratio:	14.0	Timing-Static Advance (DEG):	--
Combustion System:	DI	Timing-Static (MM):	--
Aftercooler Temperature (F):	140	Unit Injector Timing (MM):	64.3
Crankcase Blowby Rate(CFH):	2,874.6	Torque Rise (percent)	--
Fuel Rate (Rated RPM) No Load(Gal/HR):	14.5	Peak Torque Speed RPM	--
Lube Oil Press @ Low Idle Spd(PSI):	20.0	Peak Torque (LB.FT):	--

Reference
Number: DM1394

N-C 19702100N1

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 EKW 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 EKW FOR 100% OF OPERATING HOURS.

SOUND DEFINITIONS:

Sound Power : [DM8702](#)
Sound Pressure : [TM7080](#)

Date Released : 03/14/12

Caterpillar Confidential: **Green**

Content Owner: Commercial Processes Division

Web Master(s): [PSG Web Based Systems Support](#)

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