

GEN SET PACKAGE PERFORMANCE DATA [DM8168]

SEPTEMBER 21, 2009

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Performance Number: DM8168

Change Level: 01

Sales Model: C9 DITA **Combustion:** DI **Aspr:** TA
Engine Power:
 300 W/F 319 W/O F
 EKW EKW **Speed:** 1,800 RPM **After Cooler:** ATAAC
 480 HP
Manifold Type: DRY **Governor Type:** ELEC **After Cooler Temp(F):** 120
Turbo Quantity: 1 **Engine App:** GP **Turbo Arrangement:**
Hertz: 60 **Application Type:** PACKAGE-DIE **Engine Rating:** PGS **Strategy:**
Rating Type: STANDBY **Certification:** EPA TIER-3 2005 - ----

General Performance Data 1

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
300	100	480	392.91	0.33	22.75	122.72	82.71	907.59	1,252.4	931.1	2,461.43
270	90	430	352.3	0.33	20.5	121.1	78.86	886.4	1,182.92	879.8	2,302.52
240	80	384	314.01	0.34	18.54	121.46	75.07	861.68	1,123.16	841.82	2,168.32
225	75	361	295.45	0.34	17.62	121.64	73.12	847.55	1,096.7	827.06	2,104.76
210	70	339	277.32	0.35	16.8	121.64	71.13	833.43	1,074.56	818.06	2,044.72
180	60	296	242.07	0.36	15.16	121.64	66.57	798.11	1,031.36	801.14	1,924.65
150	50	253	207.55	0.37	13.55	121.64	61.21	755.73	989.24	784.94	1,808.11
120	40	213	173.9	0.39	11.81	121.64	53.1	688.64	947.48	769.28	1,645.67
90	30	170	139.53	0.4	9.8	121.64	42.73	603.88	901.58	753.44	1,423.18
75	25	149	121.83	0.41	8.74	121.64	36.96	554.44	876.92	745.34	1,296.05
60	20	127	103.99	0.42	7.61	121.64	30.77	501.47	851	737.06	1,158.32
30	10	82	67.44	0.44	5.2	121.46	17.74	391.99	721.58	649.4	844.02

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
300	100	6,881.3	2,456.8	17,572.8	9,895.4	2,616.0	5,055.7	20,359.4	49,135.6	52,320.3
270	90	6,255.7	2,092.8	15,923.6	8,701.1	2,354.4	4,606.5	18,255.2	44,244.8	47,145.1
240	80	5,743.9	1,871.0	14,558.7	7,791.2	2,126.9	4,151.5	16,264.8	39,979.5	42,595.5
225	75	5,516.4	1,774.3	13,990.0	7,393.1	2,024.6	3,929.7	15,298.0	38,045.9	40,491.4
210	70	5,288.9	1,666.3	13,478.2	7,108.7	1,927.9	3,730.7	14,388.1	36,226.1	38,557.8
180	60	4,890.8	1,518.4	12,511.4	6,540.0	1,740.2	3,326.9	12,511.4	32,700.2	34,804.4
150	50	4,549.6	1,421.8	11,487.7	5,971.3	1,558.2	2,923.1	10,748.4	29,231.1	31,164.7
120	40	4,208.4	1,359.2	10,179.7	5,232.0	1,353.5	2,343.0	8,985.4	25,420.8	27,126.9
90	30	3,810.3	1,177.2	8,587.3	4,379.0	1,126.0	1,649.2	7,222.5	21,098.7	22,463.6
75	25	3,582.8	1,052.1	7,791.2	3,924.0	1,000.9	1,302.3	6,312.6	18,767.1	20,018.2
60	20	3,241.6	864.4	6,938.1	3,469.1	870.1	966.8	5,402.6	16,321.7	17,402.2
30	10	2,616.0	762.1	4,606.5	2,047.3	591.5	375.3	3,469.1	11,146.5	11,885.8

EMISSIONS DATA

EPA TIER-3 2005 - ---- ***** D4
 Gaseous emissions data measurements are consistent with those described in
 40 CFR, EU 97/68/EC, ECE Regulation No. 96 and ISO 8178 for measuring
 HC, CO, PM, and NOx.

Gaseous emissions values are WEIGHTED CYCLE AVERAGES and are in compliance
 with the following non-road regulations:

LOCALITY	AGENCY/LEVEL	MAX LIMITS - g/kW-hr			
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U. S. (incl Calif)	EPA/TIER-3	CO:3.5	NOx + HC:4.0	PM:0.2	
Europe	EU/Stage-II	CO:3.5	HC:1.0	NOx:6.0	PM:0.2

REFERENCE EXHAUST STACK DIAMETER	--
WET EXHAUST MASS	4,157.9 LB/HR
WET EXHAUST FLOW (930.20 F STACK TEMP)	2,461.79 CFM
WET EXHAUST FLOW RATE (32 DEG F AND 29.98 IN HG)	865.00 STD CFM
DRY EXHAUST FLOW RATE (32 DEG F AND 29.98 IN HG)	792.46 STD CFM
FUEL FLOW RATE	23 GAL/HR

RATED SPEED "Not to exceed data"

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
300	100	480	5.2700	.4900	.1300	.0700	9.1000
225	75	361	2.6500	.3700	.1400	.0600	11.1000
150	50	253	1.3500	.5300	.2000	.1400	12.6000
75	25	149	.7100	.4500	.1900	.0900	13.7000
30	10	82	.5300	.4200	.1700	.0600	15.0000

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
300	100	480	4.3500	.2600	.0700	500.3	.0300	9.1000
225	75	361	2.1900	.2000	.0700	388.2	.0300	11.1000
150	50	253	1.1100	.2800	.1100	297.3	.0700	12.6000
75	25	149	.5900	.2400	.1000	188.9	.0500	13.7000
30	10	82	.4400	.2300	.0900	111.6	.0300	15.0000

Altitude Capability Data(Corrected Power Altitude Capability)

Ambient Operating Temp.	50 F	68 F	86 F	104 F	122 F	NORMAL
Altitude						
0 F	480.09 hp	480.09 hp	480.09 hp	480.09 hp	480.09 hp	480.09 hp
984.25 F	480.09 hp	480.09 hp	480.09 hp	480.09 hp	480.09 hp	480.09 hp
1,640.42 F	480.09 hp	480.09 hp	480.09 hp	480.09 hp	469.36 hp	480.09 hp
3,280.84 F	480.09 hp	480.09 hp	470.7 hp	455.95 hp	441.2 hp	480.09 hp
4,921.26 F	473.38 hp	457.29 hp	442.54 hp	427.79 hp	415.72 hp	457.29 hp
6,561.68 F	445.22 hp	430.47 hp	415.72 hp	402.31 hp	390.24 hp	434.49 hp
8,202.1 F	418.4 hp	403.65 hp	391.58 hp	378.17 hp	366.1 hp	413.03 hp
9,842.52 F	392.92 hp	379.51 hp	367.44 hp	355.37 hp	344.64 hp	391.58 hp
11,482.94 F	368.78 hp	356.71 hp	344.64 hp	333.91 hp	323.19 hp	371.46 hp
13,123.36 F	345.98 hp	333.91 hp	323.19 hp	312.46 hp	303.07 hp	352.69 hp
14,763.78 F	323.19 hp	312.46 hp	301.73 hp	292.34 hp	282.96 hp	333.91 hp

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

Identification Reference and Notes

Engine Arrangement:	2531644	Lube Oil Press @ Rated Spd(PSI):	45.3
Effective Serial No:	S9L00001	Piston Speed @ Rated Eng SPD (FT/Min):	1,592.5
Primary Engine Test Spec:	0K6616	Max Operating Altitude(FT):	3,280.8
Performance Parm Ref:	TM5739	PEEC Elect Control Module Ref	
Performance Data Ref:	DM8168	PEEC Personality Cont Mod Ref	
Aux Coolant Pump Perf Ref:			
Cooling System Perf Ref:		Turbocharger Model	S310-1.25 VTF
Certification Ref:	EPA TIER 3	Fuel Injector	
Certification Year:	2005	Timing-Static (DEG):	--
Compression Ratio:	16.1	Timing-Static Advance (DEG):	--
Combustion System:	DI	Timing-Static (MM):	--
Aftercooler Temperature (F):	120	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):	42.5	Peak Torque (LB/FT):	--

Reference
Number: DM8168 THIS PERFORMANCE DATA IS ALSO APPLICABLE TO
 ENGINE ARRANGEMENT 2591809 AND TEST SPEC 0K6795.
 EPA TIER-3 2005----D4

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.

ENGINE POWER	+/-	3%
EXHAUST STACK TEMPERATURE	+/-	8%
GENERATOR POWER	+/-	5%
INLET AIR FLOW	+/-	5%
INTAKE MANIFOLD PRESSURE - GAGE	+/-	10%
EXHAUST FLOW	+/-	6%
SPECIFIC FUEL CONSUMPTION	+/-	3%
FUEL RATE	+/-	5%
HEAT REJECTION	+/-	5%
HEAT REJECTION EXHAUST ONLY	+/-	10%

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.

GEN SET - PACKAGED - DIESEL
 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.

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