For Help Desk Phone Numbers Click here

Performance Number: TM4731 **Change Level:** 01

Sales Model: 3412 DIT **Combustion:** DI **Aspr:** T

Engine Power:
515 W/O F EKW **Speed:** 1,800 RPM **After Cooler:**
744 HP

Manifold Type: DRY **Governor Type:** HYDRA **After Cooler Temp(F):** --

Turbo Quantity: **Engine App:** GS **Turbo Arrangement:**

Hertz: 60 **Application Type:** GEN SET-DIE **Engine Rating:** GS **Strategy:**

Rating Type: STANDBY **Certification:**

General Performance Data

GEN PWR 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
515	100	744	198.41	0.37	39.36	284.36	39.5	1,387.87	1,334.3	1,119.56	4,258.95
463.5	90	667	177.96	0.37	34.84	262.04	33.02	1,288.99	1,266.08	1,070.78	3,831.65
412	80	592	157.95	0.37	30.88	239.54	27.33	1,193.64	1,200.74	1,022.9	3,432.59
386.3	75	555	148.09	0.37	29.06	229.46	24.73	1,147.73	1,168.52	1,001.12	3,256.02
360.5	70	518	138.22	0.37	27.29	219.56	22.24	1,105.35	1,135.22	979.52	3,082.97
309	60	445	118.79	0.37	23.75	200.3	17.59	1,020.59	1,062.68	928.04	2,743.95
257.5	50	373	99.5	0.38	20.29	182.12	13.41	942.9	978.62	861.44	2,411.99
206	40	302	80.64	0.39	16.99	165.2	9.71	875.8	883.22	784.22	2,097.69
154.5	30	230	61.35	0.42	13.74	150.26	6.34	812.24	770.54	692.78	1,801.05
128.8	25	193	51.49	0.44	12.1	143.42	4.8	783.99	709.34	641.66	1,656.26
103	20	155	41.48	0.47	10.46	137.12	3.35	759.27	644.9	587.12	1,515
51.5	10	79	21.03	0.63	7.13	127.04	0.77	709.83	508.64	467.42	1,250.14

EMISSIONS DATA

Certification:

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

REFERENCE EXHAUST STACK DIAMETER	--
WET EXHAUST MASS	--
WET EXHAUST FLOW (-- STACK TEMP)	--
WET EXHAUST FLOW RATE (32 DEG F AND 29.98 IN HG)	--
DRY EXHAUST FLOW RATE (32 DEG F AND 29.98 IN HG)	--
FUEL FLOW RATE	--

Altitude Capability Data(Corrected Power Altitude Capability)

Ambient Operating Temp. / Altitude	50 F	68 F	86 F	104 F	122 F	NORMAL
0 FT	744.27 hp	744.27 hp	744.27 hp	744.27 hp	744.27 hp	744.27 hp
984.25 FT	744.27 hp	744.27 hp	744.27 hp	744.27 hp	729.51 hp	744.27 hp
1,640.42 FT	744.27 hp	744.27 hp	744.27 hp	734.88 hp	712.08 hp	744.27 hp
3,280.84 FT	744.27 hp	738.9 hp	714.76 hp	691.97 hp	670.51 hp	729.51 hp
4,921.26 FT	720.13 hp	695.99 hp	673.19 hp	651.74 hp	631.62 hp	694.65 hp
6,561.68 FT	677.22 hp	654.42 hp	632.96 hp	612.85 hp	592.73 hp	659.78 hp
8,202.1 FT	635.64 hp	614.19 hp	594.07 hp	575.3 hp	557.86 hp	627.6 hp
9,842.52 FT	596.75 hp	576.64 hp	557.86 hp	540.43 hp	523 hp	595.41 hp
10,498.69 FT	582 hp	561.89 hp	544.45 hp	527.02 hp	509.59 hp	583.34 hp

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

Identification Reference and Notes

Engine Arrangement:	1W9603	**Lube Oil Press @ Rated Spd(PSI):**	68.5
Effective Serial No:	81Z05023	**Piston Speed @ Rated Eng SPD(FT/Min):**	1,773.6
Primary Engine Test Spec:	0T6186	**Max Operating Altitude(FT):**	2,624.7
Performance Parm Ref:	TM5738	**PEEC Elect Control Module Ref**	
Performance Data Ref:	TM4731	**PEEC Personality Cont Mod Ref**	
Aux Coolant Pump Perf Ref:			
Cooling System Perf Ref:		**Turbocharger Model**	TV9102-2.00 VO
Certification Ref:		**Fuel Injector**	4W7018
Certification Year:		**Timing-Static (DEG):**	30.00
Compression Ratio:	14.5	**Timing-Static Advance (DEG):**	4.80
Combustion System:	DI	**Timing-Static (MM):**	404.01
Aftercooler Temperature (F):	--	**Unit Injector Timing (MM):**	--
Crankcase Blowby Rate(CFH):	--	**Torque Rise (percent)**	--
Fuel Rate (Rated RPM) No Load(Gal/HR):	3.8	**Peak Torque Speed RPM**	--
Lube Oil Press @ Low Idle Spd(PSI):	66.9	**Peak Torque (LB.FT):**	--

Reference Number: TM4731

Parameters Reference: TM5738

THIS INFO WAS UPDATED AND RERUN 03-JAN-2001
FOR HISTORICAL PURPOSES.

GEN SET - 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 J1995. 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 J1995, 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