GEN SET PERFORMANCE DATA [1TS00724]

DECEMBER 07, 2020

For Help Desk Phone Numbers Click here

Performance Number: DM6116

Change Level: 00

Sales Model: 3408CDITA
Combustion: DI
Aspr: TA
Engine Power: 370 W/F EKW 385 W/O F EKW 410.0 KW
Speed: 1,800 RPM
After Cooler: JWAC
Manifold Type: W/C
Governor Type: HYDRA
After Cooler Temp(C): --
Turbo Quantity: 1
Engine App: GS
Turbo Arrangement:
Hertz: 60
Application Type: MAR AUX ENG
Engine Rating: MA
Strategy:
Rating Type: PRIME
Certification: 2000 IMO

General Performance Data

GEN PWR EKW	PERCENT LOAD	ENGINE POWER BKW	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
385.0	100	410.0	1,516	215.700	105.4	100.7	165.3	32.9	562.2	371.3	73.9
346.5	90	371.9	1,376	215.000	95.3	95.5	144.3	30.1	542.0	362.7	66.8
308.0	80	332.4	1,229	215.500	85.4	91.7	123.4	27.4	524.5	360.2	60.5
288.8	75	312.2	1,155	216.100	80.4	90.1	112.5	26.0	514.8	357.4	57.2
269.5	70	291.3	1,077	216.800	75.3	88.6	101.2	24.7	503.4	352.2	53.8
231.0	60	249.6	923	218.900	65.1	85.5	79.0	22.1	478.7	340.6	47.2
192.5	50	207.9	769	222.500	55.1	82.2	58.7	19.6	450.8	327.1	40.9
154.0	40	168.0	621	228.800	45.8	79.4	41.6	17.4	418.9	309.3	35.2
115.5	30	127.3	471	242.000	36.7	77.5	27.4	15.6	376.0	279.8	29.8
96.3	25	106.6	394	253.300	32.2	76.7	21.1	14.8	350.8	262.0	27.3
77.0	20	85.7	317	270.800	27.7	75.9	15.4	14.1	322.8	242.1	24.9
38.5	10	43.3	160	360.100	18.6	74.3	5.4	12.9	257.2	196.7	20.7

Engine Heat Rejection Data

GEN PWR EKW	PERCENT LOAD	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
385.0	100	410.0	373.0	52.0	290.0	126.0	56.0	49.0	410.0	1,056.0	1,125.0
346.5	90	371.9	336.0	50.0	261.0	111.0	51.0	39.0	372.0	956.0	1,018.0
308.0	80	332.4	299.0	48.0	233.0	98.0	46.0	29.0	332.0	856.0	912.0
288.8	75	312.2	280.0	46.0	220.0	92.0	43.0	24.0	312.0	806.0	859.0
269.5	70	291.3	261.0	45.0	207.0	86.0	40.0	20.0	291.0	755.0	804.0
231.0	60	249.6	224.0	42.0	181.0	73.0	35.0	12.0	250.0	653.0	695.0
192.5	50	207.9	188.0	38.0	156.0	60.0	29.0	6.0	208.0	553.0	589.0
154.0	40	168.0	154.0	33.0	133.0	49.0	24.0	1.0	168.0	459.0	489.0
115.5	30	127.3	122.0	28.0	114.0	37.0	20.0	-3.0	127.0	368.0	392.0
96.3	25	106.6	107.0	26.0	105.0	31.0	17.0	-5.0	107.0	323.0	344.0
77.0	20	85.7	91.0	23.0	96.0	24.0	15.0	-6.0	86.0	277.0	295.0
38.5	10	43.3	61.0	16.0	78.0	8.0	10.0	-8.0	43.0	186.0	198.0

EXHAUST Sound Data: 1.5 METERS

GEN PWR 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
385.0	100	110	108	110	109	106	102	102	103	102
346.5	90	109	107	109	108	105	101	101	102	101
308.0	80	108	106	108	107	104	100	100	101	100
288.8	75	108	105	107	107	104	99	100	101	99
269.5	70	107	105	107	106	103	99	99	100	99
231.0	60	106	103	106	105	102	98	98	99	97
192.5	50	105	102	104	104	101	96	97	98	96
154.0	40	104	101	103	103	100	95	96	97	95
115.5	30	102	99	102	101	98	94	94	95	93
96.3	25	101	99	101	100	97	93	93	94	93
77.0	20	101	98	100	100	97	92	93	94	92
38.5	10	99	96	98	98	95	90	91	92	90

EXHAUST Sound Data: 7.0 METERS

GEN PWR 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
385.0	100	97	96	101	96	91	90	89	90	86
346.5	90	96	96	100	96	90	89	88	89	86
308.0	80	95	95	99	95	89	88	87	88	85
288.8	75	95	94	98	94	89	87	86	87	84
269.5	70	94	93	98	93	88	87	86	87	83
231.0	60	93	92	97	92	87	86	85	86	82
192.5	50	92	91	95	91	86	84	83	84	81
154.0	40	90	90	94	90	84	83	82	83	80
115.5	30	89	88	93	88	83	82	81	82	78
96.3	25	88	88	92	88	82	81	80	81	78
77.0	20	87	87	91	87	81	80	79	80	77
38.5	10	85	85	89	85	80	78	77	78	75

EXHAUST Sound Data: 15.0 METERS

GEN PWR 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
385.0	100	90	90	94	90	85	83	82	83	80
346.5	90	89	89	93	89	84	82	81	82	79
308.0	80	88	88	92	88	83	81	80	81	78
288.8	75	88	87	92	87	82	81	80	81	77
269.5	70	87	87	91	87	82	80	79	80	77
231.0	60	86	86	90	86	80	79	78	79	76
192.5	50	85	84	89	84	79	78	77	78	74
154.0	40	84	83	87	83	78	76	75	76	73
115.5	30	82	82	86	82	76	75	74	75	72
96.3	25	81	81	85	81	76	74	73	74	71
77.0	20	81	80	84	80	75	73	72	73	70
38.5	10	79	78	83	78	73	72	71	72	68

MECHANICAL Sound Data: 1.0 METERS

GEN PWR 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
385.0	100	100	88	91	90	93	97	93	88	89
346.5	90	100	88	91	90	93	97	93	88	89
308.0	80	100	88	91	90	93	97	93	88	89
288.8	75	100	88	91	90	93	97	93	88	89
269.5	70	100	88	91	90	93	97	93	88	89
231.0	60	100	88	91	90	93	97	93	88	89
192.5	50	100	88	91	90	93	97	93	88	89
154.0	40	100	88	91	90	93	97	93	88	89
115.5	30	100	88	91	90	93	97	93	88	89
96.3	25	100	88	91	90	93	97	93	88	89
77.0	20	100	88	91	90	93	97	93	88	89
38.5	10	98	86	89	88	91	95	91	86	87

MECHANICAL Sound Data: 7.0 METERS

GEN PWR 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
385.0	100	87	78	83	78	80	82	81	77	76
346.5	90	87	78	83	78	80	82	81	77	76
308.0	80	87	78	83	78	80	82	81	77	76
288.8	75	87	78	83	78	80	82	81	77	76
269.5	70	87	78	83	78	80	82	81	77	76
231.0	60	87	78	83	78	80	82	81	77	76
192.5	50	87	78	83	78	80	82	81	77	76
154.0	40	87	78	83	78	80	82	81	77	76
115.5	30	87	78	83	78	80	82	81	77	76
96.3	25	87	78	83	78	80	82	81	77	76
77.0	20	87	78	83	78	80	82	81	77	76
38.5	10	85	76	81	76	78	80	79	75	74

MECHANICAL Sound Data: 15.0 METERS

GEN PWR 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
385.0	100	81	73	78	72	74	77	75	71	68
346.5	90	81	73	78	72	74	77	75	71	68
308.0	80	81	73	78	72	74	77	75	71	68
288.8	75	81	73	78	72	74	77	75	71	68
269.5	70	81	73	78	72	74	77	75	71	68
231.0	60	81	73	78	72	74	77	75	71	68
192.5	50	81	73	78	72	74	77	75	71	68
154.0	40	81	73	78	72	74	77	75	71	68
115.5	30	81	73	78	72	74	77	75	71	68
96.3	25	81	73	78	72	74	77	75	71	68
77.0	20	81	73	78	72	74	77	75	71	68
38.5	10	79	71	76	70	72	75	73	69	66

EMISSIONS DATA

Certification: 2000 IMO

REFERENCE EXHAUST STACK DIAMETER	127 MM
WET EXHAUST MASS	--
WET EXHAUST FLOW (-- STACK TEMP)	--
WET EXHAUST FLOW RATE (0 DEG C AND 101.2 KPA)	--
DRY EXHAUST FLOW RATE (0 DEG C AND 101.2 KPA)	--
FUEL FLOW RATE	--

Altitude Capability Data(Corrected Power Altitude Capability)

Ambient Operating Temp. / Altitude	10 C	20 C	30 C	40 C	50 C	NORMAL
0 M	410 kw	410 kw	410 kw	410 kw	410 kw	410 kw
300 M	410 kw	410 kw	410 kw	410 kw	400 kw	410 kw
500 M	410 kw	410 kw	410 kw	403 kw	391 kw	410 kw
1,000 M	410 kw	406 kw	392 kw	380 kw	368 kw	400 kw
1,500 M	395 kw	382 kw	369 kw	357 kw	346 kw	381 kw
2,000 M	371 kw	359 kw	347 kw	336 kw	325 kw	362 kw
2,500 M	349 kw	337 kw	326 kw	315 kw	306 kw	344 kw
3,000 M	328 kw	316 kw	306 kw	296 kw	287 kw	327 kw
3,500 M	307 kw	297 kw	287 kw	278 kw	269 kw	310 kw
4,000 M	288 kw	278 kw	269 kw	260 kw	252 kw	294 kw
4,500 M	270 kw	261 kw	252 kw	244 kw	236 kw	278 kw

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

Identification Reference and Notes

Engine Arrangement:	1773060	**Lube Oil Press @ Rated Spd(KPA):**	452.0
Effective Serial No:	1TS00460	**Piston Speed @ Rated Eng SPD(M/Sec):**	9.1
Primary Engine Test Spec:	0K1996	**Max Operating Altitude(M):**	750.0
Performance Parm Ref:	TM5738	**PEEC Elect Control Module Ref**	
Performance Data Ref:	DM6116	**PEEC Personality Cont Mod Ref**	
Aux Coolant Pump Perf Ref:			
Cooling System Perf Ref:		**Turbocharger Model**	TW8601-1.03
Certification Ref:	IMO	**Fuel Injector**	
Certification Year:	2000	**Timing-Static (DEG):**	28.00
Compression Ratio:	14.5	**Timing-Static Advance (DEG):**	4.80
Combustion System:	DI	**Timing-Static (MM):**	404.00
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):	398.0	**Peak Torque (NM):**	--

Reference Number: DM6116

THIS PERFORMANCE CURVE IS ALSO APPLICABLE WITH TEST SPEC 0K2000 ON ENGINE ARRANGEMENT 177-3061.

Parameters Reference: TM5738

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