

**PERFORMANCE DATA[DM9368]**

Performance Number: DM9368

Change Level: 01

SALES MODEL:	3516C	COMBUSTION:	DI
BRAND:	CAT	ENGINE SPEED (RPM):	1,800
ENGINE POWER (BHP):	2,944	HERTZ:	60
GEN POWER WITH FAN (EKW):	2,000.0	FAN POWER (HP):	130.1
COMPRESSION RATIO:	14	ASPIRATION:	TA
RATING LEVEL:	STANDBY	AFTERCOOLER TYPE:	ATAAC
PUMP QUANTITY:	1	AFTERCOOLER CIRCUIT TYPE:	JW+OC, ATAAC
FUEL TYPE:	DIESEL	INLET MANIFOLD AIR TEMP (F):	113
MANIFOLD TYPE:	DRY	JACKET WATER TEMP (F):	210.2
GOVERNOR TYPE:	ADEM4	TURBO CONFIGURATION:	PARALLEL
ELECTRONICS TYPE:	ADEM4	TURBO QUANTITY:	4
CAMSHAFT TYPE:	STANDARD	TURBOCHARGER MODEL:	GTB6041BN-48T-1.04
IGNITION TYPE:	CI	CERTIFICATION YEAR:	2011
INJECTOR TYPE:	EUI	FUEL RATE (RATED RPM) NO LOAD (GAL/HR):	16.4
REF EXH STACK DIAMETER (IN):	12	PISTON SPD @ RATED ENG SPD (FT/MIN):	2,539.4

INDUSTRY	SUBINDUSTRY	APPLICATION
OIL AND GAS	LAND PRODUCTION	PACKAGED GENSET
ELECTRIC POWER	STANDARD	PACKAGED GENSET

**General Performance Data**

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP
EKW	%	BHP	PSI	LB/BHP-HR	GAL/HR	IN-HG	DEG F	DEG F	IN-HG	DEG F
2,000.0	100	2,941	272	0.332	139.5	58.4	111.7	1,205.6	49.7	920.6
1,800.0	90	2,660	246	0.333	126.4	51.5	108.2	1,174.8	44.3	908.7
1,600.0	80	2,382	220	0.335	114.0	45.0	105.5	1,144.7	39.3	898.3
1,500.0	75	2,243	207	0.338	108.3	42.3	104.5	1,129.9	37.1	892.2
1,400.0	70	2,104	194	0.341	102.6	39.6	103.7	1,115.1	35.1	885.3
1,200.0	60	1,828	169	0.348	90.8	33.8	101.5	1,082.7	30.8	867.5
1,000.0	50	1,552	143	0.354	78.5	27.6	99.2	1,039.6	26.3	841.5
800.0	40	1,282	118	0.361	66.2	21.6	98.9	981.8	22.0	808.3
600.0	30	1,010	93	0.374	54.0	16.1	97.6	904.1	18.1	759.6
500.0	25	872	81	0.385	47.9	13.5	96.3	853.7	16.3	723.0
400.0	20	731	67	0.399	41.6	11.1	94.9	791.6	14.5	673.0
200.0	10	438	40	0.455	28.4	6.2	91.7	630.7	11.0	531.5

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	IN-HG	DEG F	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
2,000.0	100	2,941	63	370.2	6,097.7	16,301.3	26,599.0	27,575.8	5,806.5	5,297.4
1,800.0	90	2,660	56	346.1	5,660.9	14,926.0	24,582.5	25,468.0	5,363.1	4,900.5
1,600.0	80	2,382	49	322.4	5,234.1	13,626.0	22,639.9	23,438.1	4,933.5	4,514.8
1,500.0	75	2,243	46	311.8	5,056.2	13,081.3	21,839.0	22,597.2	4,757.5	4,358.3
1,400.0	70	2,104	43	301.1	4,882.3	12,547.1	21,061.2	21,779.8	4,586.7	4,206.5
1,200.0	60	1,828	37	276.7	4,500.8	11,363.7	19,357.3	19,993.3	4,209.7	3,870.7
1,000.0	50	1,552	31	248.9	4,080.3	10,053.1	17,494.9	18,044.3	3,798.7	3,503.4
800.0	40	1,282	24	220.0	3,648.0	8,724.5	15,655.6	16,119.6	3,383.2	3,131.9
600.0	30	1,010	18	191.5	3,260.2	7,457.1	13,913.7	14,292.1	3,007.1	2,798.1
500.0	25	872	16	177.6	3,086.0	6,839.3	13,166.0	13,501.6	2,843.2	2,654.9
400.0	20	731	13	163.5	2,914.4	6,185.8	12,427.8	12,719.3	2,685.1	2,518.0
200.0	10	438	8	135.0	2,580.5	4,776.4	10,987.0	11,186.4	2,369.4	2,245.9

**Heat Rejection Data**

HEAT REJECTION TO ATMOSPHERE SHOWN HERE IS ENGINE ONLY. CEM HEAT REJECTION TO ATMOSPHERE SHOWN IN THE SUPPLEMENTARY DATA IS THE ADDITIONAL HEAT REJECTED TO ATMOSPHERE FROM THE CEM. THIS ADDITIONAL HEAT IS INCLUDED IN THE HEAT REJECTION TO EXH AND EXH RECOVERY SHOWN HERE AND WOULD NEED TO BE DEDUCTED FROM THE EXH AND EXH RECOVERY VALUES WHEN SIZING EXHAUST RECOVERY HEAT EQUIPMENT.

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GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHAUST RECOVERY TO 350F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
2,000.0	100	2,941	40,104	8,584	117,743	66,835	15,945	27,713	124,739	299,359	318,893
1,800.0	90	2,660	37,348	8,264	106,994	60,337	14,448	23,519	112,812	271,264	288,965
1,600.0	80	2,382	34,738	7,949	97,012	54,418	13,028	19,817	100,998	244,606	260,566
1,500.0	75	2,243	33,635	7,808	92,688	51,834	12,375	18,256	95,121	232,347	247,508
1,400.0	70	2,104	32,549	7,664	88,414	49,269	11,728	16,765	89,226	220,198	234,566
1,200.0	60	1,828	30,165	7,326	78,933	43,615	10,380	13,695	77,505	194,893	207,610
1,000.0	50	1,552	27,455	6,929	68,522	37,263	8,969	10,519	65,823	168,397	179,386
800.0	40	1,282	24,651	6,522	58,151	30,909	7,568	7,691	54,383	142,091	151,362
600.0	30	1,010	21,599	6,020	47,794	24,352	6,175	5,268	42,840	115,931	123,495
500.0	25	872	19,985	5,705	42,506	20,859	5,475	4,261	36,971	102,794	109,501
400.0	20	731	18,381	5,400	36,887	16,909	4,756	3,348	30,983	89,289	95,115
200.0	10	438	15,142	4,792	24,623	8,226	3,252	1,832	18,564	61,054	65,038

**Sound Data**

SOUND DATA REPRESENTATIVE OF NOISE PRODUCED BY THE "ENGINE AND CEM" AS A UNIT WITHOUT A MUFFLER INSTALLED

**EXHAUST: Sound Power (1/3 Octave Frequencies)**

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	100 HZ	125 HZ	160 HZ	200 HZ	250 HZ	315 HZ	400 HZ	500 HZ	630 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
2,000.0	100	2,941	97.8	68.7	75.2	74.3	82.8	87.5	87.1	84.5	88.6	88.2
1,800.0	90	2,660	95.8	67.9	74.7	72.8	80.9	85.7	85.4	83.1	86.6	86.1
1,600.0	80	2,382	94.0	67.4	74.6	71.3	79.2	84.1	84.0	82.4	85.0	84.3
1,500.0	75	2,243	93.2	67.2	74.7	70.6	78.4	83.4	83.5	82.1	84.2	83.4
1,400.0	70	2,104	92.3	67.0	74.7	69.8	77.5	82.7	82.8	81.8	83.4	82.5
1,200.0	60	1,828	90.7	66.6	74.9	68.3	75.7	81.2	81.5	81.3	81.8	80.8
1,000.0	50	1,552	89.4	64.9	75.8	67.5	74.6	79.5	79.8	80.5	80.4	79.6
800.0	40	1,282	88.0	65.1	75.5	65.7	72.7	78.2	78.9	80.2	78.9	77.6
600.0	30	1,010	86.6	64.6	75.5	64.9	70.8	76.6	77.4	79.4	77.3	75.9
500.0	25	872	86.2	62.8	76.3	65.9	70.4	75.4	75.9	78.6	76.4	75.6
400.0	20	731	85.9	60.9	77.1	67.0	70.1	74.4	74.5	77.8	75.5	75.5
200.0	10	438	85.8	60.5	77.3	67.2	70.0	74.2	74.2	77.6	75.3	75.5

**EXHAUST: Sound Power (1/3 Octave Frequencies)**

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	1250 HZ	1600 HZ	2000 HZ	2500 HZ	3150 HZ	4000 HZ	5000 HZ	6300 HZ	8000 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
2,000.0	100	2,941	90.3	85.2	82.8	79.8	77.1	73.8	69.3	63.6	63.3	55.1
1,800.0	90	2,660	87.9	82.9	80.7	77.9	75.4	72.0	67.7	62.3	62.1	55.2
1,600.0	80	2,382	85.5	80.4	78.5	76.3	74.0	70.6	66.5	61.7	61.7	55.6
1,500.0	75	2,243	84.3	79.1	77.4	75.6	73.3	70.0	66.0	61.5	61.6	56.0
1,400.0	70	2,104	83.1	77.9	76.3	74.9	72.6	69.3	65.5	61.3	61.5	56.3
1,200.0	60	1,828	80.7	75.5	74.1	73.5	71.2	67.9	64.5	60.9	61.3	57.0
1,000.0	50	1,552	79.5	74.8	73.0	73.1	70.8	67.4	63.5	60.8	61.4	55.0
800.0	40	1,282	76.6	71.5	70.3	71.3	69.0	65.7	62.5	60.2	61.1	56.8
600.0	30	1,010	74.2	69.3	68.4	69.9	67.7	64.5	61.7	59.8	60.8	57.3
500.0	25	872	74.5	70.6	69.2	70.2	68.2	65.0	61.6	59.9	60.9	54.2
400.0	20	731	75.0	72.2	70.2	70.8	68.9	65.6	61.5	60.1	61.0	51.2
200.0	10	438	75.1	72.5	70.4	70.9	69.0	65.7	61.5	60.1	61.0	50.5

**Sound Data (Continued)**

**MECHANICAL: Sound Power (1/3 Octave Frequencies)**

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	100 HZ	125 HZ	160 HZ	200 HZ	250 HZ	315 HZ	400 HZ	500 HZ	630 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
2,000.0	100	2,941	123.0	89.3	107.2	96.2	99.4	100.3	102.8	101.0	105.5	106.8
1,800.0	90	2,660	122.2	88.6	106.6	95.4	98.5	99.4	102.5	100.9	105.4	106.5
1,600.0	80	2,382	121.4	88.1	106.0	94.6	97.5	98.5	102.0	100.9	104.7	106.1

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1,500.0	75	2,243	121.1	88.0	105.7	94.1	97.0	98.1	101.8	100.8	104.2	106.0
1,400.0	70	2,104	120.8	87.8	105.4	93.5	96.3	97.5	101.4	100.5	103.8	105.9
1,200.0	60	1,828	120.3	87.7	104.7	92.0	94.5	96.2	100.4	99.7	103.4	106.1
1,000.0	50	1,552	119.9	87.8	104.3	91.0	93.7	95.8	99.7	101.4	103.4	106.2
800.0	40	1,282	119.5	87.9	103.9	90.9	93.3	95.6	98.5	101.6	103.9	106.0
600.0	30	1,010	119.3	87.6	103.4	90.9	93.6	95.3	97.8	100.6	105.1	106.1
500.0	25	872	119.1	87.1	103.3	90.5	94.3	95.2	98.2	100.3	105.9	106.6
400.0	20	731	119.0	86.5	103.1	90.2	94.9	95.0	98.8	100.2	106.6	107.1
200.0	10	438	119.0	85.8	102.4	90.0	94.7	95.5	99.2	101.4	106.4	107.7

**MECHANICAL: Sound Power (1/3 Octave Frequencies)**

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	1250 HZ	1600 HZ	2000 HZ	2500 HZ	3150 HZ	4000 HZ	5000 HZ	6300 HZ	8000 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
2,000.0	100	2,941	112.2	113.0	111.8	111.5	110.6	110.0	109.1	108.6	107.3	106.4
1,800.0	90	2,660	112.1	112.5	111.3	111.2	110.3	109.7	108.8	108.3	106.8	106.2
1,600.0	80	2,382	111.8	111.9	110.9	110.7	109.8	109.2	108.2	107.8	106.2	106.4
1,500.0	75	2,243	111.6	111.6	110.7	110.3	109.6	109.0	107.9	107.5	105.9	106.8
1,400.0	70	2,104	111.4	111.3	110.5	109.9	109.4	108.7	107.5	107.2	105.7	108.0
1,200.0	60	1,828	111.1	110.8	110.3	109.5	109.0	108.2	106.9	106.6	105.4	111.2
1,000.0	50	1,552	110.9	110.7	110.0	109.4	108.8	108.1	106.5	106.2	105.2	109.7
800.0	40	1,282	110.9	110.6	109.5	109.1	108.7	107.7	106.0	105.9	107.0	105.7
600.0	30	1,010	110.8	110.2	108.8	108.8	108.4	107.3	105.4	105.6	107.7	101.8
500.0	25	872	110.7	109.9	108.6	108.7	108.3	107.0	105.1	105.7	106.0	100.6
400.0	20	731	110.7	109.7	108.4	108.6	108.2	106.8	104.8	105.7	104.0	99.7
200.0	10	438	110.3	109.8	108.1	108.4	108.1	106.8	105.7	104.9	102.0	98.7

**Emissions Data**

EMISSIONS VALUES ARE TAILPIPE OUT WITH AFTERTREATMENT. VALUES SHOWN AS ZERO MAY BE GREATER THAN ZERO BUT WERE BELOW THE DETECTION LEVEL OF THE EQUIPMENT USED AT TIME OF MEASUREMENT.

CATERPILLAR EMISSIONS CERTIFIED ENGINES TESTED WITHIN EPA SPECIFIED TEST CONDITIONS, AND USING TITLE 40 CFR PART 1065 TEST PROTOCOL, MEET THE NEW SOURCE PERFORMANCE STANDARDS. POTENTIAL SITE VARIATION DATA ACCOUNT FOR PRODUCTION ENGINE AND SYSTEM VARIABILITY IN ADDITION TO MEASUREMENT VARIABILITY FOR TYPICAL FIELD TEST METHODS AS DESCRIBED IN DM1176. THIS DATA ASSUMES SITE CORRECTIONS FOR AMBIENT HUMIDITY TO 75 GRAINS, AND STANDARD CONDITIONS OF 25 C (77 F) AIR TO TURBO TEMPERATURE AND 152.4 M (500 FT) ALTITUDE. GUIDANCE ON HUMIDITY CORRECTION METHODS ARE AVAILABLE IN TITLE 40 CFR SECTION 1065.670. FOR APPLICATIONS WITH GEOGRAPHIC OR AMBIENT CONDITIONS BEYOND THESE PUBLISHED VALUES, CONSULT CATERPILLAR (APPLICATION SUPPORT CENTER) FOR ADDITIONAL VARIABILITY INFORMATION.

**RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM**

GENSET POWER WITH FAN	EKW	2,000.0	1,500.0	1,000.0	500.0	200.0
PERCENT LOAD	%	100	75	50	25	10
ENGINE POWER	BHP	2,941	2,243	1,552	872	438
TOTAL NOX (AS NO2)	G/HR	1,840	1,228	741	446	909
TOTAL CO	G/HR	367	251	165	103	98
TOTAL HC	G/HR	94	108	102	81	102
PART MATTER	G/HR	89.4	66.2	63.3	55.9	28.0
TOTAL NOX (AS NO2)	(CORR 5% O2) MG/NM3	277.1	239.5	201.3	212.2	871.9
TOTAL CO	(CORR 5% O2) MG/NM3	58.0	51.5	46.6	48.2	86.7
TOTAL HC	(CORR 5% O2) MG/NM3	12.9	19.3	25.0	33.1	80.2
TOTAL NOX (AS NO2)	(CORR 5% O2) PPM	135	117	98	103	425
TOTAL CO	(CORR 5% O2) PPM	46	41	37	39	69
TOTAL HC	(CORR 5% O2) PPM	24	36	47	62	150
TOTAL NOX (AS NO2)	G/HP-HR	0.63	0.55	0.48	0.51	2.08
TOTAL CO	G/HP-HR	0.13	0.11	0.11	0.12	0.23
TOTAL HC	G/HP-HR	0.03	0.05	0.07	0.09	0.23
PART MATTER	G/HP-HR	0.03	0.03	0.04	0.06	0.06
TOTAL NOX (AS NO2)	LB/HR	4.06	2.71	1.63	0.98	2.00
TOTAL CO	LB/HR	0.81	0.55	0.36	0.23	0.22
TOTAL HC	LB/HR	0.21	0.24	0.22	0.18	0.23
PART MATTER	LB/HR	0.20	0.15	0.14	0.12	0.06

**RATED SPEED NOMINAL DATA: 1800 RPM**

GENSET POWER WITH FAN	EKW	2,000.0	1,500.0	1,000.0	500.0	200.0
PERCENT LOAD	%	100	75	50	25	10
ENGINE POWER	BHP	2,941	2,243	1,552	872	438
TOTAL NOX (AS NO2)	G/HR	1,150	767	463	279	568
TOTAL CO	G/HR	72	49	32	20	19

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TOTAL HC		G/HR	21	24	23	18	23
TOTAL CO2		KG/HR	1,441	1,111	805	490	293
PART MATTER		G/HR	34.4	25.5	24.4	21.5	10.8
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	173.2	149.7	125.8	132.6	544.9
TOTAL CO	(CORR 5% O2)	MG/NM3	11.4	10.1	9.1	9.5	17.0
TOTAL HC	(CORR 5% O2)	MG/NM3	2.9	4.3	5.5	7.4	17.8
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	84	73	61	65	265
TOTAL CO	(CORR 5% O2)	PPM	9	8	7	8	14
TOTAL HC	(CORR 5% O2)	PPM	5	8	10	14	33
FORMALDEHYDE	(CORR 15% O2)	PPM	0.02	0.02	0.02	0.05	0.25
ACROLEIN	(CORR 15% O2)	PPM	0.00	0.00	0.00	0.00	0.00
ACETALDEHYDE	(CORR 15% O2)	PPM	0.00	0.00	0.00	0.00	0.01
METHANOL	(CORR 15% O2)	PPM	0.00	0.00	0.00	0.00	0.03
TOTAL NOX (AS NO2)		G/HP-HR	0.39	0.34	0.30	0.32	1.30
TOTAL CO		G/HP-HR	0.02	0.02	0.02	0.02	0.04
TOTAL HC		G/HP-HR	0.01	0.01	0.01	0.02	0.05
PART MATTER		G/HP-HR	0.01	0.01	0.02	0.02	0.02
TOTAL NOX (AS NO2)		LB/HR	2.54	1.69	1.02	0.61	1.25
TOTAL CO		LB/HR	0.16	0.11	0.07	0.04	0.04
TOTAL HC		LB/HR	0.05	0.05	0.05	0.04	0.05
TOTAL CO2		LB/HR	3,178	2,450	1,775	1,080	645
PART MATTER		LB/HR	0.08	0.06	0.05	0.05	0.02
OXYGEN IN EXH		%	9.6	10.3	11.4	13.2	15.5
DRY SMOKE OPACITY		%	0.4	0.4	0.8	1.4	0.9
BOSCH SMOKE NUMBER			0.18	0.20	0.32	0.49	0.34

**Regulatory Information**

EPA TIER 4 FINAL					2015 - ----
Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR	
U.S. (INCL CALIF)	EPA	NON-ROAD GENSET	TIER 4 FINAL	CO: 3.5 NOx: 0.67 HC: 0.19 PM: 0.03	

  

EPA TIER 4 INTERIM					2011 - 2014
Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR	
U.S. (INCL CALIF)	EPA	NON-ROAD GENSET	TIER 4 INTERIM	CO: 3.5 NOx: 0.67 HC: 0.4 PM: 0.10	

  

EPA NON-EMERGENCY STATIONARY GENSET					2015 - ----
Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR	
U.S. (INCL CALIF)	EPA	STATIONARY	NON-EMERGENCY STATIONARY GENSET	CO: 3.5 NOx: 0.67 HC: 0.19 PM: 0.03	

**Altitude Derate Data**

**ALTITUDE CORRECTED POWER CAPABILITY (BHP)**

AMBIENT OPERATING TEMP (F)	30	40	50	60	70	80	90	100	110	120	130	140	NORMAL
ALTITUDE (FT)													
0	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944
1,000	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944
2,000	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944
3,000	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944
4,000	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944
5,000	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944
6,000	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,935	2,885	2,837	2,944
7,000	2,944	2,944	2,944	2,944	2,944	2,944	2,944	2,926	2,874	2,825	2,777	2,730	2,944
8,000	2,944	2,944	2,944	2,944	2,944	2,919	2,866	2,815	2,766	2,718	2,672	2,627	2,944
9,000	2,944	2,944	2,944	2,916	2,861	2,808	2,757	2,708	2,660	2,614	2,570	2,527	2,944
10,000	2,944	2,916	2,859	2,804	2,751	2,700	2,651	2,604	2,558	2,514	2,471	2,430	2,853
11,000	2,861	2,804	2,749	2,696	2,645	2,596	2,549	2,503	2,459	2,417	2,376	2,336	2,762
12,000	2,750	2,695	2,642	2,591	2,542	2,495	2,449	2,406	2,363	2,323	2,283	2,245	2,673
13,000	2,642	2,589	2,539	2,490	2,443	2,397	2,354	2,312	2,271	2,232	2,194	2,157	2,587
14,000	2,539	2,488	2,439	2,392	2,347	2,303	2,262	2,221	2,182	2,144	2,108	2,073	2,504
15,000	2,439	2,390	2,343	2,298	2,255	2,213	2,173	2,134	2,096	2,060	2,025	1,991	2,423

**Cross Reference**

**PERFORMANCE DATA[DM9368]**

Test Spec	Setting	Engine Arrangement	Engineering Model	Engineering Model Version	Start Effective Serial Number	End Effective Serial Number
3704798	LL6338	3709874	GS538	-	SCJ00001	
3704981	GG0624	3994250	GS718	-	DD700001	
3704981	GG0624	5075758	GS538	-	SCJ01000	
4581574	LL6763	5157722	PG238	-	LY600001	

**Supplementary Data**

Type	Classification	Performance Number
AFTERTREATMENT	SCR	DM8842

**Performance Parameter Reference****Parameters Reference:DM9600-10****PERFORMANCE DEFINITIONS**

## PERFORMANCE DEFINITIONS DM9600

## APPLICATION:

Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test Facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3046-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request (SERR) test data shall be noted.

## PERFORMANCE PARAMETER TOLERANCE FACTORS:

Power +/- 3%  
 Torque +/- 3%  
 Exhaust stack temperature +/- 8%  
 Inlet airflow +/- 5%  
 Intake manifold pressure-gage +/- 10%  
 Exhaust flow +/- 6%  
 Specific fuel consumption +/- 3%  
 Fuel rate +/- 5%  
 Specific DEF consumption +/- 3%  
 DEF rate +/- 5%  
 Heat rejection +/- 5%  
 Heat rejection exhaust only +/- 10%  
 Heat rejection CEM only +/- 10%  
 Heat Rejection values based on using treated water.

Torque is included for truck and industrial applications, do not use for Gen Set or steady state applications.

On C7 - C18 engines, at speeds of 1100 RPM and under these values are provided for reference only, and may not meet the tolerance listed.

These values do not apply to C280/3600. For these models, see the tolerances listed below.

## C280/3600 HEAT REJECTION TOLERANCE FACTORS:

Heat rejection +/- 10%  
 Heat rejection to Atmosphere +/- 50%  
 Heat rejection to Lube Oil +/- 20%  
 Heat rejection to Aftercooler +/- 5%

## TEST CELL TRANSDUCER TOLERANCE FACTORS:

Torque +/- 0.5%  
 Speed +/- 0.2%  
 Fuel flow +/- 1.0%  
 Temperature +/- 2.0 C degrees  
 Intake manifold pressure +/- 0.1 kPa

OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE AIR AND FUEL CONDITIONS.

REFERENCE ATMOSPHERIC INLET AIR  
FOR 3500 ENGINES AND SMALLER

SAE J1228 AUG2002 for marine engines, and J1995 JAN2014 for other engines, reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity at the stated aftercooler water temp, or inlet manifold temp.

## FOR 3600 ENGINES

**PERFORMANCE DATA[DM9368]**

Engine rating obtained and presented in accordance with ISO 3046/1 and SAE J1995 JANJAN2014 reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity and 150M altitude at the stated aftercooler water temperature.

**MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE**

Location for air temperature measurement air cleaner inlet at stabilized operating conditions.

**REFERENCE EXHAUST STACK DIAMETER**

The Reference Exhaust Stack Diameter published with this dataset is only used for the calculation of Smoke Opacity values displayed in this dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.

**REFERENCE FUEL****DIESEL**

Reference fuel is #2 distillate diesel with a 35API gravity; A lower heating value is 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/Liter (7.001 Lbs/Gal).

**GAS**

Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU FT) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.

**ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS EXTERNAL AUXILIARY LOAD**

Engine corrected gross output includes the power required to drive standard equipment; lube oil, scavenge lube oil, fuel transfer, common rail fuel, separate circuit aftercooler and jacket water pumps. Engine net power available for the external (flywheel) load is calculated by subtracting the sum of auxiliary load from the corrected gross flywheel out put power. Typical auxiliary loads are radiator cooling fans, hydraulic pumps, air compressors and battery charging alternators. For Tier 4 ratings additional Parasitic losses would also include Intake, and Exhaust Restrictions.

**ALTITUDE CAPABILITY**

Altitude capability is the maximum altitude above sea level at standard temperature and standard pressure at which the engine could develop full rated output power on the current performance data set.

Standard temperature values versus altitude could be seen on TM2001.

When viewing the altitude capability chart the ambient temperature is the inlet air temp at the compressor inlet.

Engines with ADEM MEUI and HEUI fuel systems operating at conditions above the defined altitude capability derate for atmospheric pressure and temperature conditions outside the values defined, see TM2001.

Mechanical governor controlled unit injector engines require a setting change for operation at conditions above the altitude defined on the engine performance sheet. See your Caterpillar technical representative for non standard ratings.

**REGULATIONS AND PRODUCT COMPLIANCE**

TMI Emissions information is presented at 'nominal' and 'Potential Site Variation' values for standard ratings. No tolerances are applied to the emissions data. These values are subject to change at any time. The controlling federal and local emission requirements need to be verified by your Caterpillar technical representative.

Customer's may have special emission site requirements that need to be verified by the Caterpillar Product Group engineer.

**EMISSIONS DEFINITIONS:**

Emissions : DM1176

**HEAT REJECTION DEFINITIONS:**

Diesel Circuit Type and HHV Balance : DM9500

**HIGH DISPLACEMENT (HD) DEFINITIONS:**

3500: EM1500

**RATING DEFINITIONS:**

Agriculture : TM6008

Fire Pump : TM6009

Generator Set : TM6035

Generator (Gas) : TM6041

Industrial Diesel : TM6010

Industrial (Gas) : TM6040

Irrigation : TM5749

Locomotive : TM6037

Marine Auxiliary : TM6036

Marine Prop (Except 3600) : TM5747

Marine Prop (3600 only) : TM5748

MSHA : TM6042

Oil Field (Petroleum) : TM6011

Off-Highway Truck : TM6039

On-Highway Truck : TM6038

**SOUND DEFINITIONS:**

01/17/2020

NVC/UPSTREAM 13-I

**PERFORMANCE DATA[DM9368]**

Sound Power : DM8702  
Sound Pressure : TM7080  
Date Released : 7/7/15