

**PERFORMANCE DATA [SCK00114]**

(SCK00114)-ENGINE (G2E00101)-GENERATOR

**MARCH 24, 2020**

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Perf No: DM9371

Change Level: 03

- General
- Heat Rejection
- Sound
- Emissions
- Regulatory
- Altitude Derate
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<b>SALES MODEL:</b>	3516C	<b>COMBUSTION:</b>	DIRECT INJECTION
<b>BRAND:</b>	CAT	<b>ENGINE SPEED (RPM):</b>	1,800
<b>ENGINE POWER (BHP):</b>	3,279	<b>HERTZ:</b>	60
<b>GEN POWER WITH FAN (EKW):</b>	2,250.0	<b>FAN POWER (HP):</b>	130.1
<b>COMPRESSION RATIO:</b>	14	<b>ASPIRATION:</b>	TA
<b>RATING LEVEL:</b>	PRIME	<b>AFTERCOOLER TYPE:</b>	ATAAC
<b>PUMP QUANTITY:</b>	1	<b>AFTERCOOLER CIRCUIT TYPE:</b>	JW+OC, ATAAC
<b>FUEL TYPE:</b>	DIESEL	<b>INLET MANIFOLD AIR TEMP (F):</b>	122
<b>MANIFOLD TYPE:</b>	DRY	<b>JACKET WATER TEMP (F):</b>	210.2
<b>GOVERNOR TYPE:</b>	ADEM4	<b>TURBO CONFIGURATION:</b>	PARALLEL
<b>ELECTRONICS TYPE:</b>	ADEM4	<b>TURBO QUANTITY:</b>	4
<b>CAMSHAFT TYPE:</b>	STANDARD	<b>TURBOCHARGER MODEL:</b>	GTB6041BN-48T-1.04
<b>IGNITION TYPE:</b>	CI	<b>CERTIFICATION YEAR:</b>	2011
<b>INJECTOR TYPE:</b>	EUI	<b>FUEL RATE (RATED RPM) NO LOAD (GAL/HR):</b>	16.4
<b>REF EXH STACK DIAMETER (IN):</b>	12	<b>PISTON SPD @ RATED ENG SPD (FT/MIN):</b>	2,539.4

<b>INDUSTRY</b>	<b>SUB INDUSTRY</b>	<b>APPLICATION</b>
ELECTRIC POWER	STANDARD	PACKAGED GENSET
OIL AND GAS	LAND PRODUCTION	PACKAGED GENSET

**General Performance Data** [Top](#)

**Note(s)**  
THE INLET MANIFOLD AIR TEMP LISTED IN THE HEADER, AND IN THE GENERAL PERFORMANCE DATA, IS THE AVERAGE INLET MANIFOLD TEMP FRONT TO REAR ON THE ENGINE.

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
2,475.0	110	3,591	332	0.334	171.2	74.2	120.5	1,285.0	62.8	969.8
2,250.0	100	3,276	303	0.332	155.6	66.8	116.2	1,244.0	56.6	941.1
2,025.0	90	2,964	274	0.332	140.5	58.9	111.8	1,207.2	50.2	918.2
1,800.0	80	2,654	245	0.333	126.2	51.4	108.3	1,174.5	44.2	910.2
1,687.5	75	2,500	231	0.334	119.1	47.7	106.6	1,157.5	41.3	903.6
1,575.0	70	2,345	217	0.336	112.4	44.2	105.1	1,140.6	38.6	896.5
1,350.0	60	2,035	188	0.343	99.7	38.1	103.1	1,107.7	34.0	881.3
1,125.0	50	1,727	159	0.351	86.7	31.9	101.0	1,070.9	29.4	860.5
900.0	40	1,424	131	0.357	72.5	24.6	98.4	1,013.6	24.1	826.0
675.0	30	1,118	103	0.368	58.8	18.1	98.5	937.8	19.6	782.1
562.5	25	963	89	0.378	52.0	15.2	97.2	888.2	17.6	748.8
450.0	20	804	74	0.387	44.5	11.9	95.5	816.3	15.1	688.8
225.0	10	475	44	0.434	29.4	6.1	92.8	638.1	10.9	546.2

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
2,475.0	110	3,591	79	422.3	6,946.3	19,494.7	30,658.0	31,856.8	6,705.5	6,089.4
2,250.0	100	3,276	72	398.3	6,577.3	17,966.0	28,873.4	29,962.6	6,306.2	5,741.9
2,025.0	90	2,964	64	371.9	6,152.1	16,410.6	26,841.5	27,825.2	5,856.0	5,344.4
1,800.0	80	2,654	56	345.8	5,640.3	14,890.2	24,497.7	25,381.4	5,344.4	4,882.1
1,687.5	75	2,500	52	332.4	5,403.1	14,150.2	23,410.8	24,245.0	5,103.2	4,666.3
1,575.0	70	2,345	48	319.1	5,181.8	13,462.8	22,401.3	23,188.3	4,880.8	4,467.9
1,350.0	60	2,035	42	295.0	4,790.6	12,259.9	20,648.1	21,346.6	4,495.0	4,125.1
1,125.0	50	1,727	35	267.9	4,370.8	10,965.3	18,789.7	19,396.4	4,083.7	3,758.7
900.0	40	1,424	27	235.1	3,869.4	9,395.4	16,562.5	17,070.1	3,593.0	3,319.2
675.0	30	1,118	21	202.6	3,402.6	7,940.1	14,524.5	14,936.2	3,143.9	2,918.6
562.5	25	963	18	187.0	3,203.5	7,265.1	13,670.9	14,034.9	2,955.9	2,753.7
450.0	20	804	14	167.9	2,966.5	6,387.1	12,643.0	12,954.6	2,734.5	2,558.1
225.0	10	475	8	134.7	2,560.7	4,836.6	10,897.4	11,103.5	2,364.2	2,237.2

**Heat Rejection Data** [Top](#)

**Note(s)**  
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 REJECT

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
2,475.0	110	3,591	47,356	9,456	144,667	84,340	19,566	37,374	152,284	367,352	391,322
2,250.0	100	3,276	43,514	8,945	131,244	75,404	17,787	32,928	138,942	333,942	355,733
2,025.0	90	2,964	40,368	8,620	118,499	67,129	16,059	28,111	125,712	301,512	321,186
1,800.0	80	2,654	37,203	8,222	106,850	60,305	14,421	23,497	112,562	270,758	288,426
1,687.5	75	2,500	35,743	8,028	101,143	56,880	13,618	21,439	106,005	255,676	272,359
1,575.0	70	2,345	34,459	7,890	95,687	53,649	12,844	19,391	99,424	241,152	256,887
1,350.0	60	2,035	31,939	7,578	86,055	47,901	11,397	15,910	86,313	213,975	227,937
1,125.0	50	1,727	29,241	7,174	75,772	41,697	9,906	12,745	73,218	185,984	198,120
900.0	40	1,424	26,089	6,737	63,399	34,077	8,288	9,083	60,381	155,614	165,768
675.0	30	1,118	22,841	6,250	51,858	26,918	6,721	6,137	47,417	126,191	134,425
562.5	25	963	21,000	5,915	45,985	23,249	5,941	4,926	40,824	111,541	118,819
450.0	20	804	19,558	5,517	38,801	18,118	5,085	3,662	34,099	95,477	101,707
225.0	10	475	15,015	4,771	25,532	8,851	3,366	1,840	20,157	63,190	67,313

**Sound Data** [Top](#)

**Note(s)**  
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	800 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)

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	800 HZ
2,475.0	110	3,591	102.6	71.3	77.0	77.1	86.8	91.9	91.5	88.4	93.3	92.8	96.3
2,250.0	100	3,276	100.5	70.1	76.1	76.0	85.2	90.0	89.3	86.6	91.4	90.9	94.1
2,025.0	90	2,964	98.0	68.8	75.2	74.4	83.0	87.7	87.2	84.6	88.8	88.3	91.4
1,800.0	80	2,654	95.7	67.8	74.7	72.8	80.9	85.6	85.4	83.1	86.6	86.0	88.8
1,687.5	75	2,500	94.7	67.5	74.6	72.0	79.9	84.8	84.6	82.6	85.6	85.0	87.6
1,575.0	70	2,345	93.8	67.3	74.6	71.1	79.0	83.9	83.9	82.3	84.8	84.0	86.4
1,350.0	60	2,035	91.9	66.9	74.8	69.4	77.0	82.3	82.5	81.7	83.0	82.1	84.1
1,125.0	50	1,727	90.2	66.0	75.2	68.0	75.3	80.6	80.9	81.0	81.3	80.3	82.0
900.0	40	1,424	88.8	64.5	75.9	66.9	73.9	78.8	79.2	80.3	79.7	78.8	80.2
675.0	30	1,118	87.0	65.5	75.1	64.6	71.4	77.4	78.3	80.0	78.0	76.3	77.3
562.5	25	963	86.4	64.0	75.7	65.2	70.7	76.2	76.9	79.2	77.0	75.8	76.7
450.0	20	804	86.0	61.8	76.7	66.4	70.2	74.9	75.2	78.2	76.0	75.5	76.5
225.0	10	475	85.8	60.4	77.3	67.3	70.0	74.1	74.1	77.6	75.3	75.4	76.3

**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	10000 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
2,475.0	110	3,591	95.4	90.2	87.8	84.8	77.9	73.6	67.5	66.8	56.1	55.3	55.3
2,250.0	100	3,276	93.1	87.9	85.5	82.5	79.4	76.1	71.7	65.7	65.3	55.4	58.4
2,025.0	90	2,964	90.5	85.4	83.0	80.0	77.3	74.0	69.5	63.7	63.4	55.1	60.9
1,800.0	80	2,654	87.8	82.8	80.6	77.9	75.4	72.0	67.7	62.3	62.1	55.2	61.1
1,687.5	75	2,500	86.5	81.5	79.4	76.9	74.6	71.2	67.0	61.9	61.8	55.4	59.8
1,575.0	70	2,345	85.2	80.1	78.2	76.1	73.8	70.4	66.4	61.6	61.7	55.7	57.9
1,350.0	60	2,035	82.5	77.3	75.7	74.6	72.3	69.0	65.3	61.2	61.5	56.5	54.0
1,125.0	50	1,727	80.2	75.2	73.7	73.4	71.0	67.7	64.2	60.9	61.3	56.3	50.7
900.0	40	1,424	78.5	73.9	72.1	72.5	70.2	66.9	63.1	60.6	61.4	54.9	48.3
675.0	30	1,118	74.6	69.2	68.4	70.0	67.7	64.5	61.9	59.8	60.8	58.5	42.5
562.5	25	963	74.2	69.7	68.6	70.0	67.9	64.6	61.6	59.8	60.8	56.3	42.7
450.0	20	804	74.7	71.4	69.7	70.5	68.5	65.3	61.5	60.0	60.9	52.7	44.2
225.0	10	475	75.1	72.6	70.4	70.9	69.0	65.7	61.5	60.1	61.0	50.3	45.3

**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	800 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
2,475.0	110	3,591	123.0	90.8	108.1	97.2	100.5	101.5	104.0	102.5	105.9	108.0	109.8
2,250.0	100	3,276	122.7	90.1	107.7	96.8	100.2	100.9	103.2	101.7	105.3	107.4	109.4
2,025.0	90	2,964	123.0	89.3	107.2	96.2	99.5	100.3	102.9	101.0	105.5	106.8	108.8
1,800.0	80	2,654	122.2	88.6	106.6	95.4	98.5	99.4	102.5	100.9	105.4	106.5	108.6
1,687.5	75	2,500	121.8	88.3	106.3	95.0	97.9	98.9	102.2	100.9	105.2	106.3	108.6
1,575.0	70	2,345	121.3	88.1	106.0	94.5	97.4	98.4	102.0	100.9	104.6	106.1	108.7
1,350.0	60	2,035	120.7	87.8	105.2	93.1	95.9	97.2	101.2	100.2	103.7	105.9	108.3
1,125.0	50	1,727	120.1	87.7	104.6	91.6	94.2	96.0	100.2	100.2	103.3	106.1	107.5
900.0	40	1,424	119.7	87.9	104.1	90.8	93.4	95.7	99.2	102.0	103.6	106.2	107.4
675.0	30	1,118	119.4	87.8	103.5	91.0	93.3	95.4	97.8	100.9	104.5	105.9	108.0
562.5	25	963	119.2	87.4	103.4	90.7	93.9	95.3	97.9	100.5	105.4	106.3	108.4
450.0	20	804	119.1	86.8	103.2	90.4	94.6	95.1	98.5	100.2	106.3	106.8	108.8
225.0	10	475	119.0	85.9	102.5	90.0	94.8	95.4	99.2	101.2	106.5	107.6	109.6

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

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	1000 HZ	1250 HZ	1600 HZ	2000 HZ	2500 HZ	3150 HZ	4000 HZ	5000 HZ	6300 HZ	8000 HZ	10000 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
2,475.0	110	3,591	112.6	114.8	113.3	113.1	111.9	111.1	110.1	109.7	108.7	107.6	111.2	111.2
2,250.0	100	3,276	112.3	113.3	112.5	112.2	111.1	110.6	109.6	109.1	107.9	107.0	114.7	114.7
2,025.0	90	2,964	112.2	113.0	111.8	111.6	110.7	110.1	109.2	108.7	107.3	106.5	117.5	117.5
1,800.0	80	2,654	112.1	112.5	111.3	111.2	110.2	109.6	108.7	108.2	106.8	106.2	115.9	115.9
1,687.5	75	2,500	111.9	112.1	111.0	111.0	110.0	109.4	108.5	108.0	106.5	106.2	114.6	114.6
1,575.0	70	2,345	111.7	111.8	110.8	110.6	109.8	109.2	108.1	107.7	106.1	106.5	113.3	113.3
1,350.0	60	2,035	111.3	111.2	110.5	109.8	109.3	108.6	107.4	107.1	105.6	108.9	109.6	109.6
1,125.0	50	1,727	111.0	110.7	110.2	109.4	108.9	108.1	106.7	106.5	105.3	111.0	105.0	105.0
900.0	40	1,424	110.9	110.7	109.8	109.3	108.8	107.9	106.2	106.1	105.5	108.0	100.9	100.9
675.0	30	1,118	110.8	110.4	109.1	108.8	108.5	107.4	105.7	105.6	108.3	103.0	99.0	99.0
562.5	25	963	110.8	110.1	108.8	108.7	108.4	107.2	105.3	105.7	107.2	101.3	98.0	98.0
450.0	20	804	110.7	109.8	108.5	108.6	108.3	106.9	105.0	105.7	105.0	100.1	97.1	97.1
225.0	10	475	110.4	109.7	108.1	108.5	108.1	106.7	105.5	105.0	102.2	98.7	95.2	95.2

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Units Filter  ▾

**Note(s)**

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 ENG

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

GENSET POWER WITH FAN	ENGINE POWER	EKW	2,475.0	2,250.0	1,687.5	1,125.0	562.5	225.0
PERCENT LOAD		BHP	3,591	3,276	2,500	1,727	963	475
TOTAL NOX (AS NO2)		G/HR	3,257	2,410	1,442	825	452	520
TOTAL CO		G/HR	574	456	289	185	109	81
TOTAL HC		G/HR	78	86	103	107	82	96
PART MATTER		G/HR	245.7	141.7	63.2	62.1	56.0	27.8
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	402.1	326.4	255.8	202.5	187.5	396.8
TOTAL CO	(CORR 5% O2)	MG/NM3	74.5	64.9	53.7	47.4	46.5	61.7
TOTAL HC	(CORR 5% O2)	MG/NM3	8.8	10.7	16.7	24.0	30.3	63.1
PART MATTER	(CORR 5% O2)	MG/NM3	26.3	16.8	9.9	13.5	20.8	19.5
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	196	159	125	99	91	193
TOTAL CO	(CORR 5% O2)	PPM	60	52	43	38	37	49
TOTAL HC	(CORR 5% O2)	PPM	16	20	31	45	57	118
TOTAL NOX (AS NO2)		G/HP-HR	0.92	0.74	0.58	0.48	0.47	1.10
TOTAL CO		G/HP-HR	0.16	0.14	0.12	0.11	0.11	0.17
TOTAL HC		G/HP-HR	0.02	0.03	0.04	0.06	0.09	0.20
PART MATTER		G/HP-HR	0.07	0.04	0.03	0.04	0.06	0.06
TOTAL NOX (AS NO2)		LB/HR	7.18	5.31	3.18	1.82	1.00	1.15
TOTAL CO		LB/HR	1.26	1.01	0.64	0.41	0.24	0.18
TOTAL HC		LB/HR	0.17	0.19	0.23	0.24	0.18	0.21
PART MATTER		LB/HR	0.54	0.31	0.14	0.14	0.12	0.06

**RATED SPEED NOMINAL DATA: 1800 RPM**

GENSET POWER WITH FAN	ENGINE POWER	EKW	2,475.0	2,250.0	1,687.5	1,125.0	562.5	225.0
PERCENT LOAD		%	110	100	75	50	25	10
TOTAL NOX (AS NO2)		G/HR	2,036	1,507	901	516	282	325
TOTAL CO		G/HR	112	89	57	36	21	16
TOTAL HC		G/HR	17	19	23	24	18	21
TOTAL CO2		KG/HR	1,755	1,604	1,225	888	532	303
PART MATTER		G/HR	94.5	54.5	24.3	23.9	21.6	10.7
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	251.3	204.0	159.9	126.6	117.2	248.0
TOTAL CO	(CORR 5% O2)	MG/NM3	14.6	12.7	10.5	9.3	9.1	12.1
TOTAL HC	(CORR 5% O2)	MG/NM3	2.0	2.4	3.7	5.3	6.7	14.0
PART MATTER	(CORR 5% O2)	MG/NM3	10.1	6.4	3.8	5.2	8.0	7.5
TOTAL NOX (AS NO2)	(CORR 15% O2)	PPM	122	99	78	62	57	121
TOTAL CO	(CORR 15% O2)	PPM	12	10	8	7	10	10
TOTAL HC	(CORR 15% O2)	PPM	4	4	7	10	13	26
FORMALDEHYDE	(CORR 15% O2)	PPM	0.03	0.02	0.02	0.02	0.03	0.12
ACROLEIN	(CORR 15% O2)	PPM	0.00	0.00	0.00	0.00	0.00	0.00
ACETALDEHYDE	(CORR 15% O2)	PPM	0.01	0.00	0.00	0.00	0.00	0.01
METHANOL	(CORR 15% O2)	PPM	0.00	0.00	0.00	0.00	0.00	0.01
TOTAL NOX (AS NO2)		G/HP-HR	0.57	0.46	0.36	0		

<b>GENSET POWER WITH FAN</b>	<b>EKW</b>	<b>2,475.0</b>	<b>2,250.0</b>	<b>1,687.5</b>	<b>1,125.0</b>	<b>562.5</b>	<b>225.0</b>
<b>ENGINE POWER</b>	<b>BHP</b>	<b>3,591</b>	<b>3,276</b>	<b>2,500</b>	<b>1,727</b>	<b>963</b>	<b>475</b>
<b>PERCENT LOAD</b>	<b>%</b>	<b>110</b>	<b>100</b>	<b>75</b>	<b>50</b>	<b>25</b>	<b>10</b>
PART MATTER	G/HP-HR	0.03	0.02	0.01	0.01	0.02	0.02
TOTAL NOX (AS NO2)	LB/HR	4.49	3.32	1.99	1.14	0.62	0.72
TOTAL CO	LB/HR	0.25	0.20	0.12	0.08	0.05	0.03
TOTAL HC	LB/HR	0.04	0.04	0.05	0.05	0.04	0.05
TOTAL CO2	LB/HR	3.869	3,536	2,701	1,959	1,172	668
PART MATTER	LB/HR	0.21	0.12	0.05	0.05	0.05	0.02
OXYGEN IN EXH	%	8.9	9.3	10.0	11.1	12.9	15.2
DRY SMOKE OPACITY	%	1.0	0.6	0.3	0.7	1.3	1.0
BOSCH SMOKE NUMBER	%	0.37	0.27	0.16	0.28	0.46	0.37

**Regulatory Information** [Top](#)

<b>EPA TIER 4 FINAL</b>					<b>2015 - ----</b>
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 1039 SUBPART F AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS BY PARTICIPATING IN THE AVERAGE, BANKING, AND TRADING PROGRAM.					
<b>Locality</b>	<b>Agency</b>	<b>Regulation</b>	<b>Tier/Stage</b>	<b>Max Limits - G/BKW - HR</b>	
U.S. (INCL CALIF)	EPA	NON-ROAD GENSET	TIER 4 FINAL	CO: 3.5 NOx: 0.67 HC: 0.19 PM: 0.03	
<b>EPA TIER 4 INTERIM</b>					
<b>2011 - 2014</b>					
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 1039 SUBPART F AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.					
<b>Locality</b>	<b>Agency</b>	<b>Regulation</b>	<b>Tier/Stage</b>	<b>Max Limits - G/BKW - HR</b>	
U.S. (INCL CALIF)	EPA	NON-ROAD GENSET	TIER 4 INTERIM	CO: 3.5 NOx: 0.67 HC: 0.4 PM: 0.10	
<b>EPA NON-EMERGENCY STATIONARY GENSET</b>					
<b>2015 - ----</b>					
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 60 SUBPART IIII AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-EMERGENCY STATIONARY REGULATIONS BY PARTICIPATING IN THE AVERAGE, BANKING, AND TRADING PROGRAM.					
<b>Locality</b>	<b>Agency</b>	<b>Regulation</b>	<b>Tier/Stage</b>	<b>Max Limits - G/BKW - HR</b>	
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** [Top](#)

<b>ALTITUDE CORRECTED POWER CAPABILITY (BHP)</b>													
<b>AMBIENT OPERATING TEMP (F)</b>	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>	<b>70</b>	<b>80</b>	<b>90</b>	<b>100</b>	<b>110</b>	<b>120</b>	<b>130</b>	<b>140</b>	<b>NORMAL</b>
ALTITUDE (FT)													
0	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279
1,000	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,252	3,198	3,279
2,000	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,246	3,190	3,136	3,084	3,279
3,000	3,279	3,279	3,279	3,279	3,279	3,279	3,243	3,185	3,129	3,073	3,023	2,972	3,279
4,000	3,279	3,279	3,279	3,279	3,243	3,183	3,125	3,069	3,015	2,963	2,913	2,864	3,227
5,000	3,279	3,279	3,246	3,183	3,123	3,065	3,010	2,956	2,904	2,854	2,805	2,758	3,129
6,000	3,253	3,188	3,125	3,065	3,007	2,951	2,898	2,846	2,796	2,748	2,701	2,656	3,033
7,000	3,131	3,068	3,008	2,950	2,894	2,841	2,789	2,739	2,691	2,644	2,600	2,556	2,939
8,000	3,012	2,952	2,894	2,838	2,785	2,733	2,683	2,635	2,589	2,544	2,501	2,459	2,848
9,000	2,897	2,839	2,784	2,730	2,678	2,629	2,581	2,535	2,490	2,447	2,406	2,366	2,758
10,000	2,786	2,730	2,677	2,625	2,576	2,528	2,482	2,437	2,395	2,353	2,313	2,275	2,671
11,000	2,678	2,625	2,573	2,524	2,476	2,430	2,386	2,343	2,302	2,262	2,224	2,187	2,586
12,000	2,574	2,523	2,473	2,426	2,380	2,336	2,293	2,252	2,213	2,174	2,137	2,102	2,503
13,000	2,474	2,424	2,377	2,331	2,287	2,244	2,204	2,164	2,126	2,089	2,054	2,020	2,422
14,000	2,377	2,329	2,283	2,239	2,197	2,156	2,117	2,079	2,043	2,008	1,974	1,941	2,344
15,000	2,283	2,238	2,194	2,151	2,111	2,072	2,034	1,998	1,963	1,929	1,896	1,864	2,268

**Cross Reference** [Top](#)

Test Spec	Setting	Engine Arrangement	Engineering Model	Engineering Model Version	Start Effective Serial Number	End Effective Serial Number
3704801	LL6341	3709876	G5539	-	SCK00001	
3704985	GG0628	3997544	GS719	-	DD700001	
3704985	GG0628	5075756	G5539	-	SCK01000	
4581579	LL6768	5157723	PG238	-	LY600001	

**Supplementary Data** [Top](#)

Type	Classification	Performance Number
AFTERTREATMENT	SCR	<a href="#">DM8840</a>

**Performance Parameter Reference** [Top](#)

**Parameters Reference: DM9600 - 11**

**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 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** 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.

**EMISSION CYCLE LIMITS:** Cycle emissions Max Limits apply to cycle-weighted averages only. Emissions at individual load points may exceed the cycle-weighted limit.

**EMISSIONS DEFINITIONS:** Emissions : DM1176

**EMISSION CYCLE DEFINITIONS**

- 1. For constant-speed marine engines for ship main propulsion, including diesel-electric drive, test cycle E2 shall be applied, for controllable-pitch propeller sets test cycle E2 shall be applied.
- 2. For propeller-law-operated main and propeller-law-operated auxiliary engines the test cycle E3 shall be applied.
- 3. For constant-speed auxiliary engines test cycle D2 shall be applied.
- 4. For variable-speed, variable-load auxiliary engines, not included above, test cycle C1 shall be applied.

**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:** Sound Power : DM8702

Sound Pressure : TM7080

Date Released : 07/10/19