PERFORMANCE DATA[EM0964]

January 15, 2021

Performance Number: EM0964 **Change Level: 00**

SALES MODEL:	C13	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,500
ENGINE POWER (BKW):	362.0	**HERTZ:**	50
GEN POWER WITH FAN (EKW):	320.0	**FAN POWER (KW):**	10.5
COMPRESSION RATIO:	16.3	**ADDITIONAL PARASITICS (KW):**	6.5
RATING LEVEL:	STANDBY	**ASPIRATION:**	TA
PUMP QUANTITY:	1	**AFTERCOOLER TYPE:**	ATAAC
FUEL TYPE:	DIESEL	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC, ATAAC
MANIFOLD TYPE:	DRY	**INLET MANIFOLD AIR TEMP (C):**	50
GOVERNOR TYPE:	ELEC	**JACKET WATER TEMP (C):**	89
INJECTOR TYPE:	EUI	**TURBO CONFIGURATION:**	SINGLE
REF EXH STACK DIAMETER (MM):	127	**TURBO QUANTITY:**	1
MAX OPERATING ALTITUDE (M):	500	**TURBOCHARGER MODEL:**	GTA4502BS-48T-1.53
		COMBUSTION STRATEGY:	LOW EMISSION
		PISTON SPD @ RATED ENG SPD (M/SEC):	7.8

INDUSTRY	SUBINDUSTRY	APPLICATION
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	%	BKW	KPA	G/BKW-HR	L/HR	KPA	DEG C	DEG C	KPA	DEG C
320.0	100	362	2,315	202.5	86.2	207.5	47.4	679.9	131.6	533.3
288.0	90	326	2,086	207.9	79.8	196.3	46.1	664.1	122.5	521.0
256.0	80	291	1,861	212.9	72.8	182.7	43.9	642.4	112.7	504.4
240.0	75	273	1,749	215.3	69.3	174.6	42.6	630.6	107.1	496.1
224.0	70	256	1,638	217.6	65.5	164.8	41.3	618.7	100.2	487.9
192.0	60	221	1,417	221.9	57.8	142.6	38.6	592.1	85.9	471.6
160.0	50	187	1,199	225.7	49.8	117.2	35.8	561.5	70.7	455.5
128.0	40	154	984	227.0	41.1	85.4	33.1	523.6	53.7	429.7
96.0	30	120	770	227.8	32.2	54.3	30.3	472.6	37.6	392.1
80.0	25	104	662	228.8	27.9	40.1	28.9	442.0	30.5	368.8
64.0	20	86.6	554	231.5	23.6	28.2	27.7	403.9	24.5	339.4
32.0	10	52.1	334	249.3	15.3	11.2	26.7	291.5	16.1	251.9

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	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)
EKW	%	BKW	KPA	DEG C	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN
320.0	100	362	222	189.4	25.0	70.5	1,744.4	1,817.7	23.9	21.7
288.0	90	326	211	182.7	24.3	67.3	1,694.6	1,762.4	23.2	21.1
256.0	80	291	196	173.5	23.5	63.5	1,633.2	1,695.2	22.3	20.4
240.0	75	273	188	168.2	23.0	61.3	1,596.4	1,655.3	21.8	19.9
224.0	70	256	178	162.1	22.4	58.9	1,549.7	1,605.4	21.1	19.4
192.0	60	221	154	147.8	20.9	53.4	1,436.6	1,485.8	19.6	18.0
160.0	50	187	128	130.6	18.9	47.0	1,297.6	1,339.9	17.6	16.3
128.0	40	154	94	106.8	16.2	38.8	1,107.2	1,142.2	15.1	14.0
96.0	30	120	61	82.3	13.4	30.4	914.2	941.6	12.5	11.6
80.0	25	104	46	70.7	12.2	26.4	825.4	849.1	11.2	10.4
64.0	20	86.6	34	60.6	11.1	22.7	749.5	769.5	10.1	9.4
32.0	10	52.1	16	44.8	9.5	16.5	640.2	653.2	8.6	8.1

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXH RECOVERY TO 177C	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY

PERFORMANCE DATA[EM0964]

January 15, 2021

EKW	%	BKW	KW	KW	KW	KW	KW	KW	KW	KW	KW
320.0	100	362	127	43.7	326	194	46.4	69.2	362	871	928
288.0	90	326	118	41.3	308	181	42.9	64.7	326	806	858
256.0	80	291	109	38.6	286	165	39.2	59.2	291	736	784
240.0	75	273	105	37.3	274	157	37.3	56.0	273	700	745
224.0	70	256	100	35.8	261	148	35.3	52.3	256	662	705
192.0	60	221	91.4	32.9	233	129	31.1	43.8	221	584	622
160.0	50	187	82.1	29.7	202	110	26.8	34.4	187	503	535
128.0	40	154	72.7	28.5	164	84.5	22.1	22.8	154	415	442
96.0	30	120	62.7	26.7	124	58.9	17.3	13.3	120	326	347
80.0	25	104	57.6	25.2	104	47.2	15.0	9.7	104	281	300
64.0	20	86.6	52.2	23.1	85.0	36.0	12.7	6.9	86.6	238	254
32.0	10	52.1	40.9	16.6	51.6	13.9	8.2	3.2	52.1	154	165

Emissions Data

RATED SPEED POTENTIAL SITE VARIATION: 1500 RPM

GENSET POWER WITH FAN		**EKW**	**320.0**	**240.0**	**160.0**	**80.0**	**32.0**
PERCENT LOAD		**%**	**100**	**75**	**50**	**25**	**10**
ENGINE POWER		**BKW**	**362**	**273**	**187**	**104**	**52.1**
TOTAL NOX (AS NO2)		G/HR	1,705	989	564	457	687
TOTAL CO		G/HR	1,091	531	557	783	429
TOTAL HC		G/HR	10	22	36	45	33
PART MATTER		G/HR	77.1	60.7	45.3	49.6	21.3
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	1,759.0	1,263.2	1,001.4	1,467.6	4,480.1
TOTAL CO	(CORR 5% O2)	MG/NM3	1,108.4	654.5	971.7	2,580.4	2,156.6
TOTAL HC	(CORR 5% O2)	MG/NM3	8.9	23.8	54.1	130.5	155.9
PART MATTER	(CORR 5% O2)	MG/NM3	64.4	63.9	67.8	142.6	85.4
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	857	615	488	715	2,182
TOTAL CO	(CORR 5% O2)	PPM	887	524	777	2,064	1,725
TOTAL HC	(CORR 5% O2)	PPM	17	44	101	244	291
TOTAL NOX (AS NO2)		G/HP-HR	3.56	2.72	2.25	3.30	9.86
TOTAL CO		G/HP-HR	2.27	1.46	2.23	5.66	6.16
TOTAL HC		G/HP-HR	0.02	0.06	0.14	0.33	0.47
PART MATTER		G/HP-HR	0.16	0.17	0.18	0.36	0.31
TOTAL NOX (AS NO2)		LB/HR	3.76	2.18	1.24	1.01	1.52
TOTAL CO		LB/HR	2.41	1.17	1.23	1.73	0.95
TOTAL HC		LB/HR	0.02	0.05	0.08	0.10	0.07
PART MATTER		LB/HR	0.17	0.13	0.10	0.11	0.05

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITH FAN		**EKW**	**320.0**	**240.0**	**160.0**	**80.0**	**32.0**
PERCENT LOAD		**%**	**100**	**75**	**50**	**25**	**10**
ENGINE POWER		**BKW**	**362**	**273**	**187**	**104**	**52.1**
TOTAL NOX (AS NO2)		G/HR	1,579	916	522	423	636
TOTAL CO		G/HR	583	284	298	419	230
TOTAL HC		G/HR	5	12	19	24	17
TOTAL CO2		KG/HR	224	185	134	75	41
PART MATTER		G/HR	39.5	31.1	23.2	25.4	10.9
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	1,628.7	1,169.7	927.2	1,358.9	4,148.3
TOTAL CO	(CORR 5% O2)	MG/NM3	592.7	350.0	519.6	1,379.9	1,153.3
TOTAL HC	(CORR 5% O2)	MG/NM3	4.7	12.6	28.6	69.0	82.5
PART MATTER	(CORR 5% O2)	MG/NM3	33.0	32.8	34.8	73.1	43.8
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	793	570	452	662	2,021
TOTAL CO	(CORR 5% O2)	PPM	474	280	416	1,104	923
TOTAL HC	(CORR 5% O2)	PPM	9	23	53	129	154
FORMALDEHYDE	(CORR 15% O2)	PPM	0.24	0.54	1.35	4.09	3.74
ACROLEIN	(CORR 15% O2)	PPM	1.33	0.97	0.41	1.08	0.26
ACETALDEHYDE	(CORR 15% O2)	PPM	0.16	0.42	1.15	2.05	2.86
TOTAL NOX (AS NO2)		G/HP-HR	3.29	2.51	2.09	3.06	9.13
TOTAL CO		G/HP-HR	1.22	0.78	1.19	3.03	3.29
TOTAL HC		G/HP-HR	0.01	0.03	0.08	0.17	0.25
PART MATTER		G/HP-HR	0.08	0.09	0.09	0.18	0.16
TOTAL NOX (AS NO2)		LB/HR	3.48	2.02	1.15	0.93	1.40
TOTAL CO		LB/HR	1.29	0.63	0.66	0.92	0.51
TOTAL HC		LB/HR	0.01	0.03	0.04	0.05	0.04
TOTAL CO2		LB/HR	495	408	296	164	90
PART MATTER		LB/HR	0.09	0.07	0.05	0.06	0.02

OXYGEN IN EXH	%	8.7	10.2	11.5	12.8	15.2
DRY SMOKE OPACITY	%	2.1	1.6	1.5	2.9	1.0
BOSCH SMOKE NUMBER		1.33	1.06	1.03	1.70	0.65

Regulatory Information

NON-CERTIFIED	1970 - 2100
THIS ENGINE RATING IS NOT EMISSIONS CERTIFIED BY ANY DOMESTIC OR FOREIGN AGENCY.	

Altitude Derate Data

ALTITUDE CORRECTED POWER CAPABILITY (BKW)

AMBIENT OPERATING TEMP (C)	0	5	10	15	20	25	30	35	40	45	50	55	60	NORMAL
ALTITUDE (M)														
0	362	362	362	362	362	362	362	362	362	361	355	350	345	362
250	362	362	362	362	362	362	362	361	356	350	345	339	334	362
500	362	362	362	362	362	362	356	350	345	339	334	329	324	362
750	362	362	362	362	357	351	345	340	334	329	324	319	314	356
1,000	362	362	358	352	346	340	334	329	324	319	314	309	304	347
1,250	360	353	347	341	335	329	324	319	314	309	304	299	295	338
1,500	348	342	336	330	324	319	314	309	304	299	294	290	285	329
1,750	337	331	325	320	314	309	304	299	294	289	285	281	276	320
2,000	326	321	315	309	304	299	294	289	285	280	276	272	268	312
2,250	316	310	305	299	294	289	285	280	276	271	267	263	259	303
2,500	306	300	295	290	285	280	275	271	267	262	258	254	251	295
2,750	296	290	285	280	276	271	266	262	258	254	250	246	242	287
3,000	286	281	276	271	266	262	258	253	249	246	242	238	234	279
3,250	276	271	267	262	258	253	249	245	241	237	234	230	227	272
3,500	267	262	258	253	249	245	241	237	233	229	226	222	219	264
3,750	258	254	249	245	241	237	233	229	225	222	218	215	212	257
4,000	249	245	241	236	232	229	225	221	218	214	211	208	205	250
4,250	241	237	232	228	224	221	217	214	210	207	204	201	198	242
4,500	233	228	224	221	217	213	210	206	203	200	197	194	191	236

Cross Reference

Test Spec	Setting	Engine Arrangement	Engineering Model	Engineering Model Version	Start Effective Serial Number	End Effective Serial Number
0K9307	PP6824	3932805	GS772	DK	PWE00001	

Performance Parameter Reference

Parameters Reference:DM9600-12

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:

PERFORMANCE DATA[EM0425]

January 23, 2023

Performance Number: EM0425 **Change Level: 02**

SALES MODEL:	C13	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,500
MACHINE SALES MODEL:		**HERTZ:**	50
ENGINE POWER (BKW):	362.0	**FAN POWER (KW):**	10.5
GEN POWER WITH FAN (EKW):	320.0	**ADDITIONAL PARASITICS (KW):**	6.5
COMPRESSION RATIO:	16.3	**ASPIRATION:**	TA
RATING LEVEL:	STANDBY	**AFTERCOOLER TYPE:**	ATAAC
PUMP QUANTITY:	1	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC, ATAAC
FUEL TYPE:	DIESEL	**INLET MANIFOLD AIR TEMP (C):**	49
MANIFOLD TYPE:	DRY	**JACKET WATER TEMP (C):**	89
GOVERNOR TYPE:	ELEC	**TURBO CONFIGURATION:**	SINGLE
ELECTRONICS TYPE:	ADEM4	**TURBO QUANTITY:**	1
CAMSHAFT TYPE:	STANDARD	**TURBOCHARGER MODEL:**	GTA4502BS-48T-1.53
IGNITION TYPE:	CI	**COMBUSTION STRATEGY:**	LOW BSFC
INJECTOR TYPE:	EUI	**PISTON SPD @ RATED ENG SPD (M/SEC):**	7.8
REF EXH STACK DIAMETER (MM):	127		
MAX OPERATING ALTITUDE (M):	3,048		

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

General Performance Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	ISO BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	ISO VOL FUEL CONSUMPTN (VFC)
EKW	%	BKW	KPA	G/BKW-HR	G/BKW-HR	L/HR	L/HR
320.0	100	362	2,315	193.5	189.8	82.4	80.8
288.0	90	326	2,086	192.3	188.6	73.8	72.4
256.0	80	291	1,861	190.5	186.8	65.2	63.9
240.0	75	273	1,749	190.1	186.5	61.1	60.0
224.0	70	256	1,638	190.8	187.2	57.5	56.4
192.0	60	221	1,417	192.7	189.0	50.2	49.3
160.0	50	187	1,199	195.5	191.8	43.1	42.3
128.0	40	154	984	199.8	196.0	36.2	35.5
96.0	30	120	770	206.7	202.8	29.3	28.7
80.0	25	104	662	211.9	207.9	25.8	25.3
64.0	20	86.6	554	219.1	214.9	22.3	21.9
32.0	10	52.1	334	247.8	243.1	15.2	14.9

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP
EKW	%	BKW	KPA	DEG C	DEG C	KPA	DEG C	KPA	DEG C
320.0	100	362	179.5	48.9	666.9	110.1	529.2	193	171.8
288.0	90	326	155.5	44.3	636.1	94.1	508.3	168	156.2
256.0	80	291	132.1	41.9	611.1	79.5	494.3	144	140.7
240.0	75	273	120.6	40.8	598.6	72.7	487.2	131	132.8
224.0	70	256	109.2	39.2	584.9	66.3	478.5	120	124.7
192.0	60	221	87.5	35.7	554.0	54.6	457.5	97	108.6
160.0	50	187	67.0	32.4	518.7	44.2	431.6	75	93.0
128.0	40	154	49.6	30.4	477.6	35.6	400.7	57	78.5
96.0	30	120	34.4	29.0	427.0	28.1	360.9	41	65.0
80.0	25	104	27.6	28.5	397.9	24.8	337.6	34	58.6
64.0	20	86.6	21.2	28.2	364.6	21.6	310.3	27	52.5
32.0	10	52.1	10.0	28.0	279.6	16.0	239.0	15	41.7

General Performance Data (Continued)

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	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	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)
EKW	%	BKW	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN

320.0	100	362	22.4	62.8	1,555.8	1,625.9	21.4	19.3
288.0	90	326	20.8	56.4	1,438.1	1,500.8	19.7	17.8
256.0	80	291	19.1	50.6	1,314.4	1,369.8	18.0	16.3
240.0	75	273	18.2	47.7	1,252.5	1,304.3	17.1	15.6
224.0	70	256	17.4	44.9	1,191.9	1,240.4	16.3	14.8
192.0	60	221	15.7	39.3	1,074.9	1,117.1	14.7	13.4
160.0	50	187	14.1	33.9	962.9	999.5	13.1	12.0
128.0	40	154	12.7	29.0	862.1	892.9	11.7	10.8
96.0	30	120	11.4	24.3	771.2	796.1	10.5	9.7
80.0	25	104	10.8	22.1	729.2	751.1	9.9	9.2
64.0	20	86.6	10.2	19.9	689.9	708.9	9.3	8.7
32.0	10	52.1	9.2	15.7	622.3	635.2	8.4	7.9

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXH RECOVERY TO 177C	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BKW	KW	KW	KW	KW	KW	KW	KW	KW	KW
320.0	100	362	128	53.5	290	172	44.3	53.4	362	832	886
288.0	90	326	116	48.9	258	149	39.7	45.0	326	745	794
256.0	80	291	107	43.3	224	130	35.1	36.3	291	658	701
240.0	75	273	102	41.0	209	121	32.9	32.2	273	618	658
224.0	70	256	97.6	39.6	197	111	30.9	28.5	256	580	618
192.0	60	221	87.9	37.3	172	92.8	27.0	21.9	221	507	540
160.0	50	187	78.5	35.3	146	75.0	23.2	16.3	187	435	464
128.0	40	154	69.4	32.5	122	58.5	19.5	11.6	154	365	389
96.0	30	120	60.3	29.0	97.5	42.6	15.7	7.8	120	296	315
80.0	25	104	55.7	27.1	85.3	34.9	13.9	6.1	104	261	278
64.0	20	86.6	51.0	24.9	73.0	27.2	12.0	4.7	86.6	225	240
32.0	10	52.1	41.4	18.9	48.8	11.2	8.2	2.4	52.1	154	164

Emissions Data

DIESEL

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITH FAN		EKW	320.0	240.0	160.0	80.0	32.0
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BKW	362	273	187	104	52.1
TOTAL NOX (AS NO2)		G/HR	2,556	2,186	1,900	1,112	808
TOTAL CO		G/HR	701	443	154	103	115
TOTAL HC		G/HR	9	5	6	7	11
TOTAL CO2		KG/HR	216	162	114	68	40
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,730.6	3,161.0	3,867.8	3,676.1	4,859.5
TOTAL CO	(CORR 5% O2)	MG/NM3	750.5	633.2	309.5	347.9	718.9
TOTAL HC	(CORR 5% O2)	MG/NM3	8.0	6.7	9.9	22.4	57.4
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,330	1,540	1,884	1,791	2,367
TOTAL CO	(CORR 5% O2)	PPM	600	507	248	278	575
TOTAL HC	(CORR 5% O2)	PPM	15	12	18	42	107
TOTAL NOX (AS NO2)		G/HP-HR	5.34	6.02	7.60	8.04	11.60
TOTAL CO		G/HP-HR	1.47	1.22	0.62	0.74	1.65
TOTAL HC		G/HP-HR	0.02	0.01	0.02	0.05	0.15
TOTAL NOX (AS NO2)		LB/HR	5.64	4.82	4.19	2.45	1.78
TOTAL CO		LB/HR	1.55	0.98	0.34	0.23	0.25
TOTAL HC		LB/HR	0.02	0.01	0.01	0.02	0.02
TOTAL CO2		LB/HR	476	357	251	150	88
OXYGEN IN EXH		%	7.7	8.8	9.9	12.3	15.0
DRY SMOKE OPACITY		%	2.7	3.4	1.5	1.3	0.6
BOSCH SMOKE NUMBER			1.61	1.89	0.99	0.90	0.32

PERFORMANCE DATA[EM1390]

January 23, 2023

Performance Number: EM1390 **Change Level: 01**

SALES MODEL:	C18	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,500
MACHINE SALES MODEL:		**HERTZ:**	50
ENGINE POWER (BKW):	625.0	**FAN POWER (KW):**	8.0
GEN POWER WITH FAN (EKW):	572.0	**ADDITIONAL PARASITICS (KW):**	7.3
COMPRESSION RATIO:	14.5	**ASPIRATION:**	TA
RATING LEVEL:	STANDBY	**AFTERCOOLER TYPE:**	ATAAC
PUMP QUANTITY:	1	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC, ATAAC
FUEL TYPE:	DIESEL	**INLET MANIFOLD AIR TEMP (C):**	49
MANIFOLD TYPE:	DRY	**JACKET WATER TEMP (C):**	89
GOVERNOR TYPE:	ELEC	**TURBO CONFIGURATION:**	PARALLEL
CAMSHAFT TYPE:	STANDARD	**TURBO QUANTITY:**	2
IGNITION TYPE:	CI	**TURBOCHARGER MODEL:**	S310S089-1.00
INJECTOR TYPE:	EUI	**COMBUSTION STRATEGY:**	LOW BSFC
REF EXH STACK DIAMETER (MM):	152	**PISTON SPD @ RATED ENG SPD (M/SEC):**	9.2
MAX OPERATING ALTITUDE (M):	500		

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

General Performance Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	ISO BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	ISO VOL FUEL CONSUMPTN (VFC)	ELEC SPEC FUEL CONSUMPTN (ESFC)	ISO ELEC SPEC FUEL CONSUMPTN (ESFC)
EKW	%	BKW	KPA	G/BKW-HR	G/BKW-HR	L/HR	L/HR	G/EKW-HR	G/EKW-HR
572.0	100	625	2,756	196.3	194.4	144.2	142.9	214.3	212.3
514.8	90	562	2,479	195.6	193.8	129.3	128.1	213.5	211.5
457.6	80	500	2,206	194.0	192.1	114.1	113.0	211.9	209.9
429.0	75	469	2,070	193.1	191.2	106.6	105.6	211.2	209.1
400.4	70	438	1,935	192.8	190.9	99.4	98.5	211.1	209.1
343.2	60	378	1,666	192.7	190.8	85.6	84.8	212.0	209.9
286.0	50	317	1,399	193.6	191.7	72.2	71.5	214.6	212.6
228.8	40	258	1,137	196.0	194.2	59.5	58.9	220.9	218.8
171.6	30	198	876	200.6	198.7	46.8	46.4	232.0	229.8
143.0	25	169	744	204.3	202.4	40.5	40.2	241.0	238.7
114.4	20	139	611	209.8	207.8	34.2	33.9	254.2	251.7
57.2	10	77.6	342	234.5	232.3	21.4	21.2	318.0	314.9

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP
EKW	%	BKW	KPA	DEG C	DEG C	KPA	DEG C	KPA	DEG C
572.0	100	625	219.7	51.7	737.9	88.1	570.4	230	199.9
514.8	90	562	194.7	48.6	705.2	77.7	551.0	204	183.2
457.6	80	500	166.7	46.1	674.6	66.8	532.9	175	164.5
429.0	75	469	152.4	45.0	659.2	61.4	523.8	161	155.3
400.4	70	438	138.6	43.8	643.1	56.3	514.3	146	146.1
343.2	60	378	112.1	41.8	608.0	46.9	493.6	119	128.0
286.0	50	317	86.6	40.0	569.2	38.4	470.6	93	110.1
228.8	40	258	64.3	39.2	522.6	31.5	439.8	70	92.9
171.6	30	198	44.8	38.8	464.6	25.7	398.3	50	76.2
143.0	25	169	36.0	38.7	431.2	23.1	373.5	41	68.1
114.4	20	139	28.1	38.7	391.1	20.8	342.0	32	60.6
57.2	10	77.6	15.2	38.8	290.3	16.6	258.4	19	47.7

General Performance Data (Continued)

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	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	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)
EKW	%	BKW	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN

572.0	100	625	37.8	111.8	2,631.0	2,753.6	36.2	32.4
514.8	90	562	35.4	101.5	2,443.6	2,553.3	33.6	30.3
457.6	80	500	32.4	90.2	2,221.3	2,318.1	30.6	27.6
429.0	75	469	30.9	84.4	2,111.5	2,201.9	28.9	26.1
400.4	70	438	29.3	79.0	2,002.1	2,085.7	27.4	24.8
343.2	60	378	26.2	68.5	1,786.0	1,857.5	24.4	22.1
286.0	50	317	23.1	58.5	1,572.8	1,634.1	21.5	19.5
228.8	40	258	20.4	49.3	1,386.2	1,436.6	18.9	17.3
171.6	30	198	18.0	40.8	1,220.5	1,260.3	16.6	15.3
143.0	25	169	16.9	36.7	1,144.9	1,179.3	15.5	14.4
114.4	20	139	15.9	32.8	1,077.3	1,106.3	14.6	13.6
57.2	10	77.6	14.3	25.2	965.7	983.9	12.9	12.3

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXH RECOVERY TO 177C	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BKW	KW	KW	KW	KW	KW	KW	KW	KW	KW
572.0	100	625	181	90.0	548	328	77.6	109	625	1,457	1,552
514.8	90	562	165	83.3	489	288	69.6	91.9	562	1,306	1,391
457.6	80	500	150	75.0	429	248	61.4	73.5	500	1,152	1,227
429.0	75	469	143	69.6	400	229	57.3	65.1	469	1,077	1,147
400.4	70	438	137	66.7	371	210	53.5	57.2	438	1,004	1,070
343.2	60	378	124	60.9	316	175	46.0	43.0	378	864	921
286.0	50	317	111	55.1	263	142	38.9	30.8	317	729	777
228.8	40	258	97.5	49.1	215	111	32.0	20.8	258	601	640
171.6	30	198	83.2	41.5	168	81.4	25.2	12.8	198	473	504
143.0	25	169	75.5	36.8	146	67.3	21.8	9.4	169	409	436
114.4	20	139	66.1	33.4	123	52.6	18.4	6.6	139	346	368
57.2	10	77.6	42.0	29.4	79.0	22.7	11.5	2.4	77.6	216	230

Emissions Data

DIESEL

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITH FAN		EKW	572.0	429.0	286.0	143.0	57.2
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BKW	625	469	317	169	77.6
TOTAL NOX (AS NO2)		G/HR	5,020	4,573	3,889	1,978	1,063
TOTAL CO		G/HR	581	619	239	138	229
TOTAL HC		G/HR	7	5	13	9	17
TOTAL CO2		KG/HR	382	282	190	107	57
PART MATTER		G/HR	18.1	19.6	11.7	7.8	4.6
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,982.3	3,681.5	4,633.9	4,091.9	4,167.3
TOTAL CO	(CORR 5% O2)	MG/NM3	347.9	496.3	281.6	298.8	974.1
TOTAL HC	(CORR 5% O2)	MG/NM3	3.8	3.2	13.3	17.5	64.8
PART MATTER	(CORR 5% O2)	MG/NM3	8.7	12.8	11.5	14.0	16.0
TOTAL NOX (AS NO2)	(CORR 15% O2)	MG/NM3	1,106.7	1,366.1	1,719.5	1,518.4	1,546.4
TOTAL CO	(CORR 15% O2)	MG/NM3	129.1	184.2	104.5	110.9	361.5
TOTAL HC	(CORR 15% O2)	MG/NM3	1.4	1.2	4.9	6.5	24.0
PART MATTER	(CORR 15% O2)	MG/NM3	3.2	4.8	4.3	5.2	5.9
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,453	1,793	2,257	1,993	2,030
TOTAL CO	(CORR 5% O2)	PPM	278	397	225	239	779
TOTAL HC	(CORR 5% O2)	PPM	7	6	25	33	121
TOTAL NOX (AS NO2)	(CORR 15% O2)	PPM	539	665	838	740	753
TOTAL CO	(CORR 15% O2)	PPM	103	147	84	89	289
TOTAL HC	(CORR 15% O2)	PPM	3	2	9	12	45
TOTAL NOX (AS NO2)		G/HP-HR	6.10	7.34	9.19	8.77	10.24
TOTAL CO		G/HP-HR	0.71	0.99	0.56	0.61	2.20
TOTAL HC		G/HP-HR	0.01	0.01	0.03	0.04	0.17

PERFORMANCE DATA[EM1390]

PART MATTER	G/HP-HR	0.02	0.03	0.03	0.03	0.04
TOTAL NOX (AS NO2)	G/KW-HR	8.29	9.98	12.50	11.93	13.93
TOTAL CO	G/KW-HR	0.96	1.35	0.77	0.83	3.00
TOTAL HC	G/KW-HR	0.01	0.01	0.04	0.05	0.23
PART MATTER	G/KW-HR	0.03	0.04	0.04	0.05	0.06
TOTAL NOX (AS NO2)	LB/HR	11.07	10.08	8.57	4.36	2.34
TOTAL CO	LB/HR	1.28	1.37	0.53	0.31	0.50
TOTAL HC	LB/HR	0.02	0.01	0.03	0.02	0.04
TOTAL CO2	LB/HR	842	621	420	237	125
PART MATTER	LB/HR	0.04	0.04	0.03	0.02	0.01
OXYGEN IN EXH	%	7.0	8.1	9.3	12.0	15.3
DRY SMOKE OPACITY	%	0.5	0.8	0.7	0.7	0.3
BOSCH SMOKE NUMBER		0.73	0.79	0.78	0.78	0.65

RATED SPEED POTENTIAL SITE VARIATION: 1500 RPM

GENSET POWER WITH FAN		**EKW**	**572.0**	**429.0**	**286.0**	**143.0**	**57.2**
PERCENT LOAD		**%**	**100**	**75**	**50**	**25**	**10**
ENGINE POWER		**BKW**	**625**	**469**	**317**	**169**	**77.6**
TOTAL NOX (AS NO2)		G/HR	5,421	4,939	4,200	2,136	1,148
TOTAL CO		G/HR	1,087	1,158	447	259	427
TOTAL HC		G/HR	14	9	24	17	33
PART MATTER		G/HR	35.3	38.2	22.8	15.2	9.0
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	3,220.9	3,976.0	5,004.7	4,419.2	4,500.7
TOTAL CO	(CORR 5% O2)	MG/NM3	650.6	928.1	526.5	558.8	1,821.5
TOTAL HC	(CORR 5% O2)	MG/NM3	7.2	6.1	25.1	33.0	122.4
PART MATTER	(CORR 5% O2)	MG/NM3	17.0	25.0	22.4	27.3	31.1
TOTAL NOX (AS NO2)	(CORR 15% O2)	MG/NM3	1,195.2	1,475.4	1,857.1	1,639.8	1,670.1
TOTAL CO	(CORR 15% O2)	MG/NM3	241.4	344.4	195.4	207.4	675.9
TOTAL HC	(CORR 15% O2)	MG/NM3	2.7	2.3	9.3	12.2	45.4
PART MATTER	(CORR 15% O2)	MG/NM3	6.3	9.3	8.3	10.1	11.6
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,569	1,937	2,438	2,153	2,192
TOTAL CO	(CORR 5% O2)	PPM	521	742	421	447	1,457
TOTAL HC	(CORR 5% O2)	PPM	13	11	47	62	229
TOTAL NOX (AS NO2)	(CORR 15% O2)	PPM	582	719	905	799	813
TOTAL CO	(CORR 15% O2)	PPM	193	276	156	166	541
TOTAL HC	(CORR 15% O2)	PPM	5	4	17	23	85
TOTAL NOX (AS NO2)		G/HP-HR	6.59	7.93	9.93	9.48	11.06
TOTAL CO		G/HP-HR	1.32	1.86	1.06	1.15	4.12
TOTAL HC		G/HP-HR	0.02	0.01	0.06	0.07	0.32
PART MATTER		G/HP-HR	0.04	0.06	0.05	0.07	0.09
TOTAL NOX (AS NO2)		G/KW-HR	8.95	10.78	13.50	12.88	15.04
TOTAL CO		G/KW-HR	1.80	2.53	1.44	1.56	5.60
TOTAL HC		G/KW-HR	0.02	0.02	0.08	0.10	0.43
PART MATTER		G/KW-HR	0.06	0.08	0.07	0.09	0.12
TOTAL NOX (AS NO2)		LB/HR	11.95	10.89	9.26	4.71	2.53
TOTAL CO		LB/HR	2.40	2.55	0.98	0.57	0.94
TOTAL HC		LB/HR	0.03	0.02	0.05	0.04	0.07
PART MATTER		LB/HR	0.08	0.08	0.05	0.03	0.02

Regulatory Information

NON-CERTIFIED	**1970 - 2100**
THIS ENGINE RATING IS NOT EMISSIONS CERTIFIED BY ANY DOMESTIC OR FOREIGN AGENCY.	

Altitude Derate Data

STANDARD

ALTITUDE CORRECTED POWER CAPABILITY (BKW)

Performance Data [EM2750]

October 20, 2020

For Help Desk Phone Numbers Click here

Perf No: EM2750 **Change Level:** 00

General Heat Rejection Emissions Regulatory Altitude Derate Cross Reference General Notes Supplementary Data Perf Param Ref

View PDF

SALES MODEL:	3512B	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,500
ENGINE POWER (BKW):	1,610.0	**HERTZ:**	50
GEN POWER WITH FAN (EKW):	1,500.0	**FAN POWER (KW):**	46.0
COMPRESSION RATIO:	15.5	**ASPIRATION:**	TA
RATING LEVEL:	MISSION CRITICAL STANDBY	**AFTERCOOLER TYPE:**	SCAC
PUMP QUANTITY:	2	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC, AC
FUEL TYPE:	DIESEL	**AFTERCOOLER TEMP (C):**	90
MANIFOLD TYPE:	DRY	**JACKET WATER TEMP (C):**	99
GOVERNOR TYPE:	ADEM3	**TURBO CONFIGURATION:**	PARALLEL
ELECTRONICS TYPE:	ADEM3	**TURBO QUANTITY:**	2
CAMSHAFT TYPE:	STANDARD	**TURBOCHARGER MODEL:**	GT604105B-53T-1.70
IGNITION TYPE:	CI	**COMBUSTION STRATEGY:**	LOW EMISSION
INJECTOR TYPE:	EUI	**CRANKCASE BLOWBY RATE (M3/HR):**	61.1
REF EXH STACK DIAMETER (MM):	254	**FUEL RATE (RATED RPM) NO LOAD (L/HR):**	37.0
MAX OPERATING ALTITUDE (M):	700	**PISTON SPD @ RATED ENG SPD (M/SEC):**	10.8

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

General Performance Data Top

Note(s)

THIS STANDBY RATING IS FOR A STANDBY ONLY ENGINE ARRANGEMENT. RERATING THE ENGINE TO A PRIME OR CONTINUOUS RATING IS NOT PERMITTED.

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	ENGINE OUTLET TEMP
EKW	%	BKW	KPA	G/BKW-HR	L/HR	KPA	DEG C	DEG C	DEG C
1,500.0	100	1,602	2,189	210.1	396.0	287.3	99.4	680.9	481.1
1,350.0	90	1,444	1,973	205.7	349.5	256.3	97.6	645.0	451.5
1,200.0	80	1,288	1,760	204.2	309.5	221.5	96.2	622.6	440.3
1,125.0	75	1,211	1,654	203.9	290.4	203.8	95.6	613.3	438.3
1,050.0	70	1,133	1,548	203.9	271.8	186.0	95.1	604.0	436.3
900.0	60	979	1,337	204.5	235.4	150.8	94.2	585.5	432.3
750.0	50	825	1,127	206.4	200.3	117.7	93.4	563.0	426.3
600.0	40	672	918	209.6	165.7	87.6	92.6	532.5	413.9
450.0	30	518	708	215.6	131.4	60.9	91.6	489.8	391.2
375.0	25	441	602	220.6	114.4	49.3	90.9	460.6	372.4
300.0	20	363	496	228.2	97.4	38.8	90.3	426.5	349.9
150.0	10	206	281	266.5	64.5	21.7	89.4	342.4	294.7

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	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)
EKW	%	BKW	KPA	DEG C	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN
1,500.0	100	1,602	296	229.0	125.0	333.1	8,864.6	9,201.2	120.6	108.4
1,350.0	90	1,444	265	209.7	115.8	296.1	7,560.8	7,857.9	111.6	100.3
1,200.0	80	1,288	229	191.0	105.1	264.3	6,642.8	6,905.9	101.2	91.0
1,125.0	75	1,211	211	181.5	99.5	249.0	6,237.3	6,484.1	95.6	85.9
1,050.0	70	1,133	193	171.9	93.8	233.9	5,846.2	6,077.3	90.1	81.0
900.0	60	979	157	152.3	82.4	204.8	5,091.1	5,291.3	79.3	71.3
750.0	50	825	124	131.8	71.6	176.4	4,348.4	4,518.6	68.9	61.9
600.0	40	672	93	111.5	61.6	149.1	3,613.7	3,754.4	59.3	53.3
450.0	30	518	66	91.1	52.7	123.2	2,886.7	2,998.4	50.7	45.5

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	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)
375.0	25	441	54	81.6	48.9	111.0	2,530.6	2,627.8	47.0	42.2
300.0	20	363	44	72.4	45.4	99.2	2,181.6	2,264.5	43.5	39.1
150.0	10	206	26	57.1	39.8	78.7	1,581.0	1,635.8	37.8	34.0

Heat Rejection Data Top

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXH RECOVERY TO 177C	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BKW	KW	KW	KW	KW	KW	KW	KW	KW	KW
1,500.0	100	1,602	681	150	1,517	804	200	323	1,602	4,011	4,273
1,350.0	90	1,444	623	137	1,312	668	177	261	1,444	3,547	3,778
1,200.0	80	1,288	569	129	1,149	580	156	201	1,288	3,132	3,336
1,125.0	75	1,211	542	125	1,075	544	146	173	1,211	2,935	3,126
1,050.0	70	1,133	516	121	1,003	508	137	147	1,133	2,742	2,921
900.0	60	979	464	114	867	439	119	99.0	979	2,369	2,523
750.0	50	825	411	106	739	372	101	58.0	825	2,008	2,139
600.0	40	672	358	98.6	616	304	83.3	25.2	672	1,661	1,769
450.0	30	518	303	91.0	497	233	66.0	-0.1	518	1,322	1,408
375.0	25	441	274	86.6	439	195	57.4	-9.9	441	1,154	1,230
300.0	20	363	244	82.0	382	159	49.0	-18.0	363	988	1,053
150.0	10	206	181	72.0	270	93.2	33.0	-29.0	206	658	701

Emissions Data Top

Units Filter All Units

RATED SPEED POTENTIAL SITE VARIATION: 1500 RPM

GENSET POWER WITH FAN ENGINE POWER		EKW BKW	1,500.0 1,602	1,125.0 1,211	750.0 825	375.0 441	150.0 206
PERCENT LOAD		%	100	75	50	25	10
TOTAL NOX (AS NO2)		G/HR	13,924	11,068	8,022	4,695	2,637
TOTAL CO		G/HR	4,034	2,752	1,571	738	698
TOTAL HC		G/HR	383	281	230	193	182
PART MATTER		G/HR	189.7	90.4	99.3	87.1	79.3
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	3,015.1	3,270.0	3,445.7	3,542.5	3,507.8
TOTAL CO	(CORR 5% O2)	MG/NM3	873.5	813.2	675.0	556.9	930.5
TOTAL HC	(CORR 5% O2)	MG/NM3	83.0	83.0	99.0	145.2	243.3
PART MATTER	(CORR 5% O2)	MG/NM3	41.2	26.7	42.7	57.2	103.7
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,471	1,595	1,684	1,718	1,704
TOTAL CO	(CORR 5% O2)	PPM	695	666	524	448	750
TOTAL HC	(CORR 5% O2)	PPM	134	133	161	233	395
TOTAL NOX (AS NO2)		G/HP-HR	6.48	6.82	7.25	7.94	9.56
TOTAL CO		G/HP-HR	1.88	1.70	1.42	1.25	2.53
TOTAL HC		G/HP-HR	0.18	0.17	0.21	0.33	0.66
PART MATTER		G/HP-HR	0.09	0.06	0.09	0.15	0.29
TOTAL NOX (AS NO2)		LB/HR	30.70	24.40	17.69	10.35	5.81
TOTAL CO		LB/HR	8.89	6.07	3.46	1.63	1.54
TOTAL HC		LB/HR	0.84	0.62	0.51	0.43	0.40
PART MATTER		LB/HR	0.42	0.20	0.22	0.19	0.17

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITH FAN ENGINE POWER		EKW BKW	1,500.0 1,602	1,125.0 1,211	750.0 825	375.0 441	150.0 206
PERCENT LOAD		%	100	75	50	25	10
TOTAL NOX (AS NO2)		G/HR	11,603	9,223	6,685	3,912	2,198
TOTAL CO		G/HR	2,241	1,529	873	410	388
TOTAL HC		G/HR	288	211	173	145	137
TOTAL CO2		KG/HR	1,069	782	539	308	173
PART MATTER		G/HR	135.5	64.6	70.9	62.2	56.7
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,512.6	2,725.0	2,871.4	2,952.1	2,923.1
TOTAL CO	(CORR 5% O2)	MG/NM3	485.3	451.8	375.0	309.4	517.0
TOTAL HC	(CORR 5% O2)	MG/NM3	62.4	62.4	74.4	109.2	182.9
PART MATTER	(CORR 5% O2)	MG/NM3	29.4	19.1	30.5	40.9	74.1
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,226	1,329	1,403	1,432	1,420
TOTAL CO	(CORR 5% O2)	PPM	386	370	291	249	416
TOTAL HC	(CORR 5% O2)	PPM	101	100	121	175	297
TOTAL NOX (AS NO2)		G/HP-HR	5.40	5.68	6.04	6.62	7.97
TOTAL CO		G/HP-HR	1.04	0.94	0.79	0.69	1.41
TOTAL HC		G/HP-HR	0.13	0.13	0.16	0.25	0.50
PART MATTER		G/HP-HR	0.06	0.04	0.06	0.11	0.21
TOTAL NOX (AS NO2)		LB/HR	25.58	20.33	14.74	8.62	4.85
TOTAL CO		LB/HR	4.94	3.37	1.92	0.90	0.86
TOTAL HC		LB/HR	0.63	0.47	0.38	0.32	0.30
TOTAL CO2		LB/HR	2,356	1,725	1,188	678	382
PART MATTER		LB/HR	0.30	0.14	0.16	0.14	0.12

GENSET POWER WITH FAN	**EKW**	**1,500.0**	**1,125.0**	**750.0**	**375.0**	**150.0**
ENGINE POWER	**BKW**	**1,602**	**1,211**	**825**	**441**	**206**
PERCENT LOAD	**%**	**100**	**75**	**50**	**25**	**10**
OXYGEN IN EXH	%	9.7	10.6	11.1	12.7	15.3
DRY SMOKE OPACITY	%	2.3	1.6	2.5	3.0	3.1
BOSCH SMOKE NUMBER		0.81	0.54	0.90	1.11	1.15

Regulatory Information Top

NON-CERTIFIED	**1970 - 2100**

THIS ENGINE RATING IS NOT EMISSIONS CERTIFIED BY ANY DOMESTIC OR FOREIGN AGENCY.

Altitude Derate Data Top

ALTITUDE CORRECTED POWER CAPABILITY (BKW)

AMBIENT OPERATING TEMP (C)	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**NORMAL**
ALTITUDE (M)												
0	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,578	1,610
250	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,597	1,573	1,610
500	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,600	1,575	1,550	1,526	1,610
750	1,601	1,601	1,601	1,601	1,601	1,601	1,579	1,553	1,528	1,504	1,481	1,601
1,000	1,554	1,554	1,554	1,554	1,554	1,554	1,532	1,507	1,483	1,459	1,437	1,554
1,250	1,510	1,510	1,510	1,510	1,510	1,510	1,486	1,462	1,438	1,416	1,394	1,510
1,500	1,466	1,466	1,466	1,466	1,466	1,465	1,441	1,418	1,395	1,373	1,352	1,466
1,750	1,424	1,424	1,424	1,424	1,424	1,421	1,397	1,375	1,353	1,331	1,311	1,424
2,000	1,383	1,383	1,383	1,383	1,383	1,377	1,355	1,333	1,311	1,291	1,271	1,383
2,250	1,344	1,344	1,344	1,344	1,344	1,335	1,313	1,292	1,271	1,251	1,232	1,344
2,500	1,306	1,306	1,306	1,306	1,306	1,294	1,273	1,252	1,232	1,213	1,194	1,306
2,750	1,269	1,269	1,269	1,269	1,269	1,254	1,233	1,213	1,194	1,175	1,157	1,269
3,000	1,233	1,233	1,233	1,233	1,233	1,215	1,195	1,175	1,156	1,138	1,121	1,233
3,250												
3,500												
3,750												
4,000												
4,250												
4,500												

Cross Reference Top

Test Spec	**Setting**	**Engine Arrangement**	**Engineering Model**	**Engineering Model Version**	**Start Effective Serial Number**	**End Effective Serial Number**
5643578	GG1560	5331486	PG278	DK	TNP00001	
5643737	GG1973	5331486	PG278	DK	TZX00001	
5643578	GG1613	5331488	PG278	DK	TNP00001	
5643737	GG1993	5331488	PG278	DK	TZX00001	
4581768	GG4110	5390555	PG241	-	LY900001	

General Notes Top

EM2750 - 00

SOUND PRESSURE DATA FOR THIS RATING CAN BE FOUND IN PERFORMANCE NUMBER - DM8779

Supplementary Data Top

Type	**Classification**	**Performance Number**
SOUND	SOUND PRESSURE	DM8779

This performance data is supplementary data for:

EM2748

PERFORMANCE DATA[EM2738]

January 23, 2023

Performance Number: EM2738 **Change Level: 00**

SALES MODEL:	3512B	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,500
MACHINE SALES MODEL:		**HERTZ:**	50
ENGINE POWER (BKW):	1,610.0	**FAN POWER (KW):**	46.0
GEN POWER WITH FAN (EKW):	1,500.0	**ASPIRATION:**	TA
COMPRESSION RATIO:	15.5	**AFTERCOOLER TYPE:**	SCAC
RATING LEVEL:	MISSION CRITICAL STANDBY	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC, AC
PUMP QUANTITY:	2	**AFTERCOOLER TEMP (C):**	90
FUEL TYPE:	DIESEL	**JACKET WATER TEMP (C):**	99
MANIFOLD TYPE:	DRY	**TURBO CONFIGURATION:**	PARALLEL
GOVERNOR TYPE:	ADEM3	**TURBO QUANTITY:**	2
ELECTRONICS TYPE:	ADEM3	**TURBOCHARGER MODEL:**	GT604105B-53T-1.70
CAMSHAFT TYPE:	STANDARD	**COMBUSTION STRATEGY:**	LOW BSFC
IGNITION TYPE:	CI	**CRANKCASE BLOWBY RATE (M3/HR):**	61.1
INJECTOR TYPE:	EUI	**FUEL RATE (RATED RPM) NO LOAD (L/HR):**	37.0
REF EXH STACK DIAMETER (MM):	254	**PISTON SPD @ RATED ENG SPD (M/SEC):**	10.8
MAX OPERATING ALTITUDE (M):	700		

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

General Performance Data

THIS STANDBY RATING IS FOR A STANDBY ONLY ENGINE ARRANGEMENT. RERATING THE ENGINE TO A PRIME OR CONTINUOUS RATING IS NOT PERMITTED.

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)
EKW	%	BKW	KPA	G/BKW-HR	L/HR
1,500.0	100	1,602	2,189	204.7	385.8
1,350.0	90	1,444	1,973	202.5	344.1
1,200.0	80	1,288	1,760	200.8	304.3
1,125.0	75	1,211	1,654	200.4	285.4
1,050.0	70	1,133	1,548	200.4	267.1
900.0	60	979	1,337	201.6	232.1
750.0	50	825	1,127	203.7	197.7
600.0	40	672	918	207.1	163.6
450.0	30	518	708	213.2	129.9
375.0	25	441	602	218.3	113.2
300.0	20	363	496	226.2	96.6
150.0	10	206	281	264.3	64.0

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	ENGINE OUTLET TEMP	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP
EKW	%	BKW	KPA	DEG C	DEG C	DEG C	KPA	DEG C
1,500.0	100	1,602	271.6	103.8	661.2	501.1	282	214.4
1,350.0	90	1,444	238.6	100.9	631.6	484.8	248	195.8
1,200.0	80	1,288	204.5	98.6	606.8	475.2	214	176.4
1,125.0	75	1,211	187.8	97.5	596.6	472.4	196	167.2
1,050.0	70	1,133	171.2	96.5	586.5	469.5	179	158.0
900.0	60	979	139.0	94.5	566.7	463.7	146	139.7
750.0	50	825	108.4	93.0	545.2	456.3	115	120.8
600.0	40	672	80.8	92.0	513.7	439.9	86	101.9
450.0	30	518	56.5	91.2	469.2	411.5	61	82.8
375.0	25	441	46.0	90.7	440.4	391.1	50	74.0
300.0	20	363	36.4	90.2	407.2	366.7	40	65.7
150.0	10	206	20.6	89.1	326.8	304.9	24	51.6

General Performance Data (Continued)

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	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	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)

PERFORMANCE DATA[EM2738]

January 23, 2023

EKW	%	BKW	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN
1,500.0	100	1,602	120.3	324.9	8,460.2	8,788.1	114.6	105.1
1,350.0	90	1,444	110.1	291.5	7,426.0	7,718.5	105.0	96.3
1,200.0	80	1,288	99.1	258.9	6,510.1	6,768.8	94.5	86.7
1,125.0	75	1,211	93.7	243.5	6,097.6	6,340.2	89.2	81.8
1,050.0	70	1,133	88.4	228.6	5,704.0	5,931.0	84.1	77.1
900.0	60	979	78.1	200.3	4,959.0	5,156.3	74.3	68.1
750.0	50	825	68.2	172.9	4,238.1	4,406.1	64.7	59.4
600.0	40	672	59.1	146.5	3,518.3	3,657.4	56.1	51.5
450.0	30	518	51.1	121.4	2,794.1	2,904.6	48.4	44.4
375.0	25	441	47.6	109.6	2,449.9	2,546.1	45.1	41.3
300.0	20	363	44.5	98.3	2,116.1	2,198.2	42.0	38.5
150.0	10	206	39.4	78.2	1,524.1	1,578.4	36.9	33.9

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXH RECOVERY TO 177C	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BKW	KW	KW	KW	KW	KW	KW	KW	KW	KW
1,500.0	100	1,602	665	139	1,485	828	195	262	1,602	3,899	4,153
1,350.0	90	1,444	612	129	1,311	716	174	208	1,444	3,478	3,705
1,200.0	80	1,288	560	120	1,153	623	154	154	1,288	3,075	3,276
1,125.0	75	1,211	535	117	1,082	584	144	130	1,211	2,885	3,074
1,050.0	70	1,133	510	114	1,013	545	135	107	1,133	2,701	2,877
900.0	60	979	461	109	881	470	117	70.0	979	2,346	2,499
750.0	50	825	410	103	753	399	100	37.0	825	1,999	2,129
600.0	40	672	358	94.7	626	324	83.0	11.4	672	1,655	1,763
450.0	30	518	304	86.0	501	248	66.0	-8.0	518	1,314	1,400
375.0	25	441	275	81.5	439	209	57.5	-15.7	441	1,145	1,220
300.0	20	363	245	77.0	377	172	49.0	-22.0	363	977	1,041
150.0	10	206	181	68.0	263	100	32.1	-30.0	206	646	688

Sound Data

EXHAUST:SOUND PRESSURE(OBCF) DISTANCE:1.5 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	63 HZ	125 HZ	250 HZ	500 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	116.0	111.0	121.0	117.0	109.0
1,350.0	90	1,444	115.0	110.0	120.0	116.0	108.0
1,200.0	80	1,288	114.0	109.0	119.0	115.0	107.0
1,125.0	75	1,211	114.0	109.0	119.0	114.0	107.0
1,050.0	70	1,133	113.0	108.0	118.0	114.0	106.0
900.0	60	979	112.0	107.0	117.0	113.0	105.0
750.0	50	825	111.0	106.0	116.0	111.0	104.0
600.0	40	672	110.0	104.0	115.0	110.0	103.0
450.0	30	518	108.0	103.0	113.0	109.0	101.0
375.0	25	441	107.0	102.0	112.0	108.0	100.0
300.0	20	363	106.0	101.0	111.0	107.0	99.0
150.0	10	206	104.0	99.0	109.0	105.0	97.0

EXHAUST:SOUND PRESSURE(OBCF) DISTANCE:1.5 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	2000 HZ	4000 HZ	8000 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	108.0	110.0	110.0	107.0
1,350.0	90	1,444	107.0	109.0	109.0	106.0
1,200.0	80	1,288	106.0	108.0	108.0	105.0
1,125.0	75	1,211	105.0	107.0	108.0	104.0

1,050.0	70	1,133	105.0	106.0	107.0	104.0
900.0	60	979	104.0	105.0	106.0	103.0
750.0	50	825	102.0	104.0	105.0	101.0
600.0	40	672	101.0	103.0	103.0	100.0
450.0	30	518	100.0	101.0	102.0	99.0
375.0	25	441	99.0	100.0	101.0	98.0
300.0	20	363	98.0	99.0	100.0	97.0
150.0	10	206	96.0	97.0	98.0	95.0

EXHAUST:SOUND PRESSURE(OBCF) DISTANCE:7 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	63 HZ	125 HZ	250 HZ	500 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	103.0	100.0	111.0	105.0	96.0
1,350.0	90	1,444	102.0	99.0	110.0	104.0	95.0
1,200.0	80	1,288	101.0	98.0	109.0	103.0	94.0
1,125.0	75	1,211	101.0	97.0	108.0	102.0	93.0
1,050.0	70	1,133	100.0	97.0	107.0	101.0	92.0
900.0	60	979	99.0	96.0	106.0	100.0	91.0
750.0	50	825	98.0	94.0	105.0	99.0	90.0
600.0	40	672	96.0	93.0	104.0	98.0	89.0
450.0	30	518	95.0	91.0	102.0	96.0	87.0
375.0	25	441	94.0	91.0	101.0	95.0	86.0
300.0	20	363	93.0	90.0	100.0	94.0	85.0
150.0	10	206	91.0	87.0	98.0	92.0	83.0

EXHAUST:SOUND PRESSURE(OBCF) DISTANCE:7 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	2000 HZ	4000 HZ	8000 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	95.0	96.0	97.0	92.0
1,350.0	90	1,444	94.0	95.0	96.0	91.0
1,200.0	80	1,288	93.0	94.0	95.0	90.0
1,125.0	75	1,211	93.0	94.0	94.0	90.0
1,050.0	70	1,133	92.0	93.0	94.0	89.0
900.0	60	979	91.0	92.0	93.0	88.0
750.0	50	825	90.0	91.0	91.0	87.0
600.0	40	672	88.0	89.0	90.0	85.0
450.0	30	518	87.0	88.0	88.0	84.0
375.0	25	441	86.0	87.0	88.0	83.0
300.0	20	363	85.0	86.0	87.0	82.0
150.0	10	206	83.0	84.0	84.0	80.0

EXHAUST:SOUND PRESSURE(OBCF) DISTANCE:15 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	63 HZ	125 HZ	250 HZ	500 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	96.0	93.0	104.0	98.0	89.0
1,350.0	90	1,444	95.0	92.0	103.0	97.0	88.0
1,200.0	80	1,288	94.0	91.0	102.0	96.0	87.0
1,125.0	75	1,211	94.0	91.0	101.0	95.0	86.0
1,050.0	70	1,133	93.0	90.0	101.0	95.0	86.0
900.0	60	979	92.0	89.0	100.0	94.0	85.0
750.0	50	825	91.0	88.0	98.0	92.0	83.0
600.0	40	672	90.0	86.0	97.0	91.0	82.0
450.0	30	518	88.0	85.0	96.0	90.0	81.0
375.0	25	441	87.0	84.0	95.0	89.0	80.0
300.0	20	363	86.0	83.0	94.0	88.0	79.0
150.0	10	206	84.0	81.0	92.0	86.0	77.0

EXHAUST:SOUND PRESSURE(OBCF) DISTANCE:15 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	2000 HZ	4000 HZ	8000 HZ

PERFORMANCE DATA[EM2738]

January 23, 2023

EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	88.0	90.0	90.0	85.0
1,350.0	90	1,444	87.0	89.0	89.0	84.0
1,200.0	80	1,288	86.0	88.0	88.0	83.0
1,125.0	75	1,211	86.0	87.0	88.0	83.0
1,050.0	70	1,133	85.0	86.0	87.0	82.0
900.0	60	979	84.0	85.0	86.0	81.0
750.0	50	825	83.0	84.0	85.0	80.0
600.0	40	672	82.0	83.0	83.0	79.0
450.0	30	518	80.0	81.0	82.0	77.0
375.0	25	441	79.0	80.0	81.0	76.0
300.0	20	363	78.0	79.0	80.0	75.0
150.0	10	206	76.0	77.0	78.0	73.0

MECHANICAL:SOUND PRESSURE(OBCF) DISTANCE:1 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	63 HZ	125 HZ	250 HZ	500 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	102.0	94.0	98.0	97.0	94.0
1,350.0	90	1,444	102.0	94.0	98.0	97.0	94.0
1,200.0	80	1,288	102.0	94.0	98.0	97.0	94.0
1,125.0	75	1,211	102.0	94.0	98.0	97.0	94.0
1,050.0	70	1,133	102.0	94.0	98.0	97.0	94.0
900.0	60	979	102.0	94.0	98.0	97.0	94.0
750.0	50	825	102.0	94.0	98.0	97.0	94.0
600.0	40	672	102.0	94.0	98.0	97.0	94.0
450.0	30	518	102.0	94.0	98.0	97.0	94.0
375.0	25	441	102.0	94.0	98.0	97.0	94.0
300.0	20	363	102.0	94.0	98.0	97.0	94.0
150.0	10	206	102.0	94.0	98.0	97.0	94.0

MECHANICAL:SOUND PRESSURE(OBCF) DISTANCE:1 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	2000 HZ	4000 HZ	8000 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	97.0	97.0	95.0	99.0
1,350.0	90	1,444	97.0	97.0	95.0	99.0
1,200.0	80	1,288	97.0	97.0	95.0	99.0
1,125.0	75	1,211	97.0	97.0	95.0	99.0
1,050.0	70	1,133	97.0	97.0	95.0	99.0
900.0	60	979	97.0	97.0	95.0	99.0
750.0	50	825	97.0	97.0	95.0	99.0
600.0	40	672	97.0	97.0	95.0	99.0
450.0	30	518	97.0	97.0	95.0	99.0
375.0	25	441	97.0	97.0	95.0	99.0
300.0	20	363	97.0	97.0	95.0	99.0
150.0	10	206	97.0	97.0	95.0	99.0

MECHANICAL:SOUND PRESSURE(OBCF) DISTANCE:7 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	63 HZ	125 HZ	250 HZ	500 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	90.0	82.0	86.0	85.0	82.0
1,350.0	90	1,444	90.0	82.0	86.0	85.0	82.0
1,200.0	80	1,288	90.0	82.0	86.0	85.0	82.0
1,125.0	75	1,211	90.0	82.0	86.0	85.0	82.0
1,050.0	70	1,133	90.0	82.0	86.0	85.0	82.0
900.0	60	979	90.0	82.0	86.0	85.0	82.0
750.0	50	825	90.0	82.0	86.0	85.0	82.0
600.0	40	672	90.0	82.0	86.0	85.0	82.0
450.0	30	518	90.0	82.0	86.0	85.0	82.0
375.0	25	441	90.0	82.0	86.0	85.0	82.0
300.0	20	363	90.0	82.0	86.0	85.0	82.0
150.0	10	206	90.0	82.0	86.0	85.0	82.0

PERFORMANCE DATA[EM2738]

January 23, 2023

MECHANICAL:SOUND PRESSURE(OBCF) DISTANCE:7 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	2000 HZ	4000 HZ	8000 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	85.0	85.0	83.0	87.0
1,350.0	90	1,444	85.0	85.0	83.0	87.0
1,200.0	80	1,288	85.0	85.0	83.0	87.0
1,125.0	75	1,211	85.0	85.0	83.0	87.0
1,050.0	70	1,133	85.0	85.0	83.0	87.0
900.0	60	979	85.0	85.0	83.0	87.0
750.0	50	825	85.0	85.0	83.0	87.0
600.0	40	672	85.0	85.0	83.0	87.0
450.0	30	518	85.0	85.0	83.0	87.0
375.0	25	441	85.0	85.0	83.0	87.0
300.0	20	363	85.0	85.0	83.0	87.0
150.0	10	206	85.0	85.0	83.0	87.0

MECHANICAL:SOUND PRESSURE(OBCF) DISTANCE:15 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	63 HZ	125 HZ	250 HZ	500 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	85.0	76.0	80.0	79.0	76.0
1,350.0	90	1,444	85.0	76.0	80.0	79.0	76.0
1,200.0	80	1,288	85.0	76.0	80.0	79.0	76.0
1,125.0	75	1,211	85.0	76.0	80.0	79.0	76.0
1,050.0	70	1,133	85.0	76.0	80.0	79.0	76.0
900.0	60	979	85.0	76.0	80.0	79.0	76.0
750.0	50	825	85.0	76.0	80.0	79.0	76.0
600.0	40	672	85.0	76.0	80.0	79.0	76.0
450.0	30	518	85.0	76.0	80.0	79.0	76.0
375.0	25	441	85.0	76.0	80.0	79.0	76.0
300.0	20	363	85.0	76.0	80.0	79.0	76.0
150.0	10	206	85.0	76.0	80.0	79.0	76.0

MECHANICAL:SOUND PRESSURE(OBCF) DISTANCE:15 METER

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	2000 HZ	4000 HZ	8000 HZ
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)
1,500.0	100	1,602	79.0	80.0	78.0	81.0
1,350.0	90	1,444	79.0	80.0	78.0	81.0
1,200.0	80	1,288	79.0	80.0	78.0	81.0
1,125.0	75	1,211	79.0	80.0	78.0	81.0
1,050.0	70	1,133	79.0	80.0	78.0	81.0
900.0	60	979	79.0	80.0	78.0	81.0
750.0	50	825	79.0	80.0	78.0	81.0
600.0	40	672	79.0	80.0	78.0	81.0
450.0	30	518	79.0	80.0	78.0	81.0
375.0	25	441	79.0	80.0	78.0	81.0
300.0	20	363	79.0	80.0	78.0	81.0
150.0	10	206	79.0	80.0	78.0	81.0

Emissions Data

DIESEL

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITH FAN	EKW	1,500.0	1,125.0	750.0	375.0	150.0
PERCENT LOAD	%	100	75	50	25	10
ENGINE POWER	BKW	1,602	1,211	825	441	206
TOTAL NOX (AS NO2)	G/HR	12,853	11,286	8,324	4,940	2,742
TOTAL CO	G/HR	1,255	968	362	279	327

PERFORMANCE DATA[EM2738]

TOTAL HC		G/HR	181	158	148	124	125
TOTAL CO2		KG/HR	1,018	751	520	297	168
PART MATTER		G/HR	138.4	132.2	102.4	76.9	69.4
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,849.3	3,390.5	3,613.3	3,759.4	3,677.6
TOTAL CO	(CORR 5% O2)	MG/NM3	278.2	290.8	157.2	212.2	439.1
TOTAL HC	(CORR 5% O2)	MG/NM3	40.1	47.4	64.4	94.6	167.1
PART MATTER	(CORR 5% O2)	MG/NM3	30.7	39.7	44.4	58.5	93.2
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,388	1,652	1,760	1,831	1,780
TOTAL CO	(CORR 5% O2)	PPM	223	232	126	171	354
TOTAL HC	(CORR 5% O2)	PPM	65	77	104	151	272
TOTAL NOX (AS NO2)		G/HP-HR	5.98	6.95	7.53	8.36	9.94
TOTAL CO		G/HP-HR	0.58	0.60	0.33	0.47	1.18
TOTAL HC		G/HP-HR	0.08	0.10	0.13	0.21	0.45
PART MATTER		G/HP-HR	0.06	0.08	0.09	0.13	0.25
TOTAL NOX (AS NO2)		LB/HR	28.34	24.88	18.35	10.89	6.04
TOTAL CO		LB/HR	2.77	2.13	0.80	0.62	0.72
TOTAL HC		LB/HR	0.40	0.35	0.33	0.27	0.28
TOTAL CO2		LB/HR	2,243	1,655	1,146	655	370
PART MATTER		LB/HR	0.31	0.29	0.23	0.17	0.15
OXYGEN IN EXH		%	9.6	10.2	10.7	12.7	15.3
DRY SMOKE OPACITY		%	0.8	1.5	1.7	1.9	2.2
BOSCH SMOKE NUMBER			0.31	0.51	0.57	0.63	0.76

RATED SPEED POTENTIAL SITE VARIATION: 1500 RPM

GENSET POWER WITH FAN		**EKW**	**1,500.0**	**1,125.0**	**750.0**	**375.0**	**150.0**
PERCENT LOAD		**%**	**100**	**75**	**50**	**25**	**10**
ENGINE POWER		**BKW**	**1,602**	**1,211**	**825**	**441**	**206**
TOTAL NOX (AS NO2)		G/HR	15,424	13,543	9,989	5,928	3,290
TOTAL CO		G/HR	2,259	1,742	652	502	588
TOTAL HC		G/HR	241	210	197	165	166
PART MATTER		G/HR	193.8	185.1	143.4	107.7	97.2
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	3,419.1	4,068.6	4,336.0	4,511.3	4,413.1
TOTAL CO	(CORR 5% O2)	MG/NM3	500.8	523.4	283.0	381.9	790.3
TOTAL HC	(CORR 5% O2)	MG/NM3	53.3	63.0	85.7	125.8	222.2
PART MATTER	(CORR 5% O2)	MG/NM3	43.0	55.6	62.2	81.9	130.5
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,666	1,982	2,112	2,197	2,136
TOTAL CO	(CORR 5% O2)	PPM	401	418	227	308	638
TOTAL HC	(CORR 5% O2)	PPM	86	102	138	201	361
TOTAL NOX (AS NO2)		G/HP-HR	7.18	8.34	9.03	10.03	11.93
TOTAL CO		G/HP-HR	1.05	1.07	0.59	0.85	2.13
TOTAL HC		G/HP-HR	0.11	0.13	0.18	0.28	0.60
PART MATTER		G/HP-HR	0.09	0.11	0.13	0.18	0.35
TOTAL NOX (AS NO2)		LB/HR	34.00	29.86	22.02	13.07	7.25
TOTAL CO		LB/HR	4.98	3.84	1.44	1.11	1.30
TOTAL HC		LB/HR	0.53	0.46	0.43	0.36	0.37
PART MATTER		LB/HR	0.43	0.41	0.32	0.24	0.21

Regulatory Information

NON-CERTIFIED	**1970 - 2100**
THIS ENGINE RATING IS NOT EMISSIONS CERTIFIED BY ANY DOMESTIC OR FOREIGN AGENCY.	

Altitude Derate Data

STANDARD

ALTITUDE CORRECTED POWER CAPABILITY (BKW)

AMBIENT OPERATING	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**NORMAL**

Exhaust emission data sheet
1700DQGAG
50 Hz Diesel generator set

Engine information:

Model:	Cummins Inc QSK50-G4 NR2	Bore:	6.25 in. (159 mm)
Type:	4 Cycle, 60° V, 16 cylinder diesel	Stroke:	6.25 in. (159 mm)
Aspiration:	Turbocharged and low temperature after-cooled (2 pump/2 loop)	Displacement:	3067 cu. in. (50.2 liters)
Compression ratio:	15.0:1		
Emission control device:	Turbocharged with low temperature after-cooler		

Performance data	1/4 Standby	1/2 Standby	3/4 Standby	Full Standby	Full Prime
BHP @ 1500 RPM (50 Hz)	495	990	1485	1980	1780
Fuel consumption (gal/Hr)	27.8	51.6	73.3	93	87.2
Exhaust gas flow (CFM)	3406	6416	8410	9875	9727
Exhaust gas temperature (°F)	748	869	872	905	906
Exhaust emission data					
HC (Total unburned hydrocarbons)	0.22 (92)	0.15 (61)	0.12 (51)	0.06 (30)	0.07 (31)
NOx (Oxides of nitrogen as NO2)	3.9 (1658)	4.3 (1788)	4.1 (1814)	5.2 (2482)	4.2 (1876)
CO (Carbon monoxide)	1.26 (544)	1.33 (563)	1.33 (587)	0.84 (399)	0.75 (339)
PM (Particular matter)	0.22 (80)	0.1 (34)	0.05 (18)	0.03 (10)	0.05 (16)
SO2 (Sulfur dioxide)	0.13 (47)	0.12 (42)	0.11 (42)	0.1 (41)	0.11 (41)
Smoke (Bosch)	0.8	0.5	0.3	0.2	0.3

All values are (Grams per HP-Hour)/(mg/nm^3)

Test conditions

Data is representative of steady-state engine speed (±25 RPM) at designated genset loads. Pressures, temperatures, and emission rates were stabilized.

Fuel specification:	ASTM D975 No. 2-D diesel fuel with 0.03-0.05% sulfur content (by weight), and 40-48 cetane number.
Fuel temperature:	99 ±9 °F (at fuel pump inlet)
Intake air temperature:	77 ±9 °F
Barometric pressure:	29.6 ±1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here are representative of test data taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

PERFORMANCE DATA[DM9630]

August 26, 2020

Performance Number: DM9630 **Change Level: 01**

SALES MODEL:	C18	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,500
ENGINE POWER (BHP):	774	**HERTZ:**	50
GEN POWER WITH FAN (EKW):	528.0	**FAN POWER (HP):**	10.7
COMPRESSION RATIO:	14.5	**ADDITIONAL PARASITICS (HP):**	9.1
RATING LEVEL:	STANDBY	**ASPIRATION:**	TA
PUMP QUANTITY:	1	**AFTERCOOLER TYPE:**	ATAAC
FUEL TYPE:	DIESEL	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC, ATAAC
MANIFOLD TYPE:	DRY	**INLET MANIFOLD AIR TEMP (F):**	120
GOVERNOR TYPE:	ELEC	**JACKET WATER TEMP (F):**	192.2
CAMSHAFT TYPE:	STANDARD	**TURBO CONFIGURATION:**	PARALLEL
IGNITION TYPE:	CI	**TURBO QUANTITY:**	2
INJECTOR TYPE:	EUI	**TURBOCHARGER MODEL:**	S310S089-1.00
REF EXH STACK DIAMETER (IN):	6	**CERTIFICATION YEAR:**	2007
MAX OPERATING ALTITUDE (FT):	6,499	**PISTON SPD @ RATED ENG SPD (FT/MIN):**	1,801.2

INDUSTRY	SUBINDUSTRY	APPLICATION
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
528.0	100	774	369	0.320	35.0	69.0	123.8	1,330.8	47.9	1,019.6
475.2	90	696	332	0.342	33.6	64.7	118.8	1,286.7	44.8	993.1
422.4	80	619	296	0.339	29.6	56.9	111.4	1,227.1	38.6	957.1
396.0	75	581	277	0.333	27.3	52.8	107.4	1,198.0	35.6	938.2
369.6	70	543	259	0.326	24.9	48.6	103.4	1,169.3	32.6	919.6
316.8	60	468	223	0.327	21.5	39.9	98.1	1,113.2	26.7	899.5
264.0	50	393	188	0.334	18.5	31.2	93.7	1,058.6	21.0	876.2
211.2	40	320	153	0.340	15.3	23.0	89.9	987.8	15.8	834.4
158.4	30	246	118	0.344	11.9	15.6	86.5	877.8	11.6	764.5
132.0	25	209	100	0.347	10.2	12.1	85.1	812.0	9.8	719.4
105.6	20	172	82	0.353	8.6	8.9	83.9	738.4	8.2	666.4
52.8	10	96.7	46	0.395	5.4	4.7	83.1	563.2	6.0	524.9

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
528.0	100	774	72	402.7	1,367.3	3,916.5	5,937.0	6,185.0	1,301.8	1,182.4
475.2	90	696	67	387.8	1,328.4	3,714.3	5,754.7	5,989.5	1,257.1	1,142.8
422.4	80	619	60	359.6	1,242.3	3,347.8	5,352.2	5,555.8	1,161.8	1,060.8
396.0	75	581	55	344.2	1,193.2	3,166.4	5,127.0	5,316.4	1,113.7	1,019.5
369.6	70	543	51	327.8	1,139.8	2,985.3	4,885.4	5,061.4	1,064.2	976.6
316.8	60	468	42	294.3	1,025.8	2,628.0	4,374.5	4,527.3	950.6	874.0
264.0	50	393	33	259.4	907.2	2,272.8	3,850.4	3,981.8	836.5	770.3
211.2	40	320	25	221.5	791.8	1,919.8	3,345.3	3,454.8	729.4	673.8
158.4	30	246	17	182.3	682.6	1,563.0	2,873.9	2,959.9	627.8	583.3
132.0	25	209	13	164.2	629.7	1,382.6	2,649.3	2,722.8	576.5	537.8
105.6	20	172	10	147.9	579.6	1,205.0	2,438.8	2,499.7	526.1	493.1
52.8	10	96.7	6	123.2	517.6	931.7	2,173.8	2,212.0	465.3	442.4

Heat Rejection Data

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

528.0	100	774	9,089	2,440	30,017	17,800	4,050	6,632	32,819	76,035	80,997
475.2	90	696	8,733	5,027	28,276	16,512	3,888	6,199	29,517	72,990	77,753
422.4	80	619	7,740	4,253	25,052	14,389	3,431	5,321	26,261	64,423	68,626
396.0	75	581	7,164	3,250	23,345	13,304	3,163	4,862	24,647	59,392	63,268
369.6	70	543	6,585	2,148	21,629	12,235	2,889	4,390	23,036	54,248	57,788
316.8	60	468	5,906	1,911	18,816	10,537	2,496	3,438	19,844	46,857	49,915
264.0	50	393	5,303	2,305	16,056	8,851	2,145	2,554	16,679	40,270	42,897
211.2	40	320	4,675	2,396	13,161	7,036	1,778	1,762	13,560	33,376	35,554
158.4	30	246	4,002	1,961	10,158	5,117	1,383	1,102	10,445	25,973	27,668
132.0	25	209	3,668	1,668	8,687	4,172	1,187	839	8,879	22,287	23,741
105.6	20	172	3,339	1,341	7,269	3,260	994	626	7,302	18,659	19,876
52.8	10	96.7	2,710	551	4,755	1,566	623	349	4,103	11,704	12,468

Emissions Data

RATED SPEED POTENTIAL SITE VARIATION: 1500 RPM

GENSET POWER WITH FAN		EKW	528.0	396.0	264.0	132.0	52.8
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BHP	774	581	393	209	96.7
TOTAL NOX (AS NO2)		G/HR	3,671	2,435	1,651	1,083	673
TOTAL CO		G/HR	1,157	487	267	336	513
TOTAL HC		G/HR	50	52	43	34	68
PART MATTER		G/HR	84.3	43.4	31.8	27.0	13.5
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,281.0	1,987.5	1,989.0	2,360.5	2,715.0
TOTAL CO	(CORR 5% O2)	MG/NM3	721.6	355.0	297.1	754.3	2,269.5
TOTAL HC	(CORR 5% O2)	MG/NM3	28.4	37.2	43.4	67.1	266.9
PART MATTER	(CORR 5% O2)	MG/NM3	43.2	27.1	33.9	50.7	46.9
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,111	968	969	1,150	1,322
TOTAL CO	(CORR 5% O2)	PPM	577	284	238	603	1,816
TOTAL HC	(CORR 5% O2)	PPM	53	70	81	125	498
TOTAL NOX (AS NO2)		G/HP-HR	4.80	4.22	4.21	5.19	6.97
TOTAL CO		G/HP-HR	1.51	0.84	0.68	1.61	5.31
TOTAL HC		G/HP-HR	0.07	0.09	0.11	0.16	0.70
PART MATTER		G/HP-HR	0.11	0.08	0.08	0.13	0.14
TOTAL NOX (AS NO2)		LB/HR	8.09	5.37	3.64	2.39	1.48
TOTAL CO		LB/HR	2.55	1.07	0.59	0.74	1.13
TOTAL HC		LB/HR	0.11	0.12	0.09	0.08	0.15
PART MATTER		LB/HR	0.19	0.10	0.07	0.06	0.03

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITH FAN		EKW	528.0	396.0	264.0	132.0	52.8
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BHP	774	581	393	209	96.7
TOTAL NOX (AS NO2)		G/HR	3,399	2,255	1,528	1,003	623
TOTAL CO		G/HR	619	261	143	179	274
TOTAL HC		G/HR	26	28	23	18	36
TOTAL CO2		KG/HR	370	283	192	105	56
PART MATTER		G/HR	43.2	22.3	16.3	13.9	6.9
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,112.0	1,840.3	1,841.6	2,185.7	2,513.8
TOTAL CO	(CORR 5% O2)	MG/NM3	385.9	189.8	158.9	403.4	1,213.6
TOTAL HC	(CORR 5% O2)	MG/NM3	15.0	19.7	23.0	35.5	141.2
PART MATTER	(CORR 5% O2)	MG/NM3	22.1	13.9	17.4	26.0	24.1
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,029	896	897	1,065	1,224
TOTAL CO	(CORR 5% O2)	PPM	309	152	127	323	971
TOTAL HC	(CORR 5% O2)	PPM	28	37	43	66	264
TOTAL NOX (AS NO2)		G/HP-HR	4.45	3.90	3.90	4.80	6.46
TOTAL CO		G/HP-HR	0.81	0.45	0.36	0.86	2.84
TOTAL HC		G/HP-HR	0.03	0.05	0.06	0.09	0.37
PART MATTER		G/HP-HR	0.06	0.04	0.04	0.07	0.07
TOTAL NOX (AS NO2)		LB/HR	7.49	4.97	3.37	2.21	1.37
TOTAL CO		LB/HR	1.36	0.57	0.31	0.40	0.60
TOTAL HC		LB/HR	0.06	0.06	0.05	0.04	0.08
TOTAL CO2		LB/HR	817	623	422	232	123
PART MATTER		LB/HR	0.10	0.05	0.04	0.03	0.02
OXYGEN IN EXH		%	8.4	9.7	10.8	12.7	15.6
DRY SMOKE OPACITY		%	1.0	0.7	0.7	0.9	0.5
BOSCH SMOKE NUMBER			0.64	0.36	0.44	0.56	0.22

Specification sheet

Diesel generator set QSK23 series engine

600 kW - 800 kW 60 Hz

Standby

Description

Cummins® commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby and Prime Power applications.

Features

Cummins heavy-duty engine - Rugged 4-cycle, industrial diesel delivers reliable power, low emissions and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Permanent Magnet Generator (PMG) - Offers enhanced motor starting and fault clearing short circuit capability.

Circuit breakers - Option for manually-and/or electrically-operated circuit breakers.

Control system - The PowerCommand® electronic control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency, and voltage regulation, alarm and status message display, AmpSentry™ protection, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Peer-to-peer paralleling - For applications where two or more generators with PowerCommand 3.3 control can be combined with an electrically operated circuit breaker and a combination of transfer switch(s).

Cooling system - Standard integral set-mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

Enclosures - Optional weather protective and sound attenuated enclosures are available.

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

Warranty and service - Backed by a comprehensive warranty and worldwide distributor network.

	Standby rating	Prime rating	Continuous rating	Data sheets
Model	60 Hz kW (kVA)	60 Hz kW (kVA)	60 Hz kW (kVA)	60 Hz
DQCA	600 (750)	545 (681)		D-3352
DQCB	750 (938)	680 (850)		D-3353
DQCC	800 (1000)	725 (906)		D-3354

Generator set data sheet

Model:	**DQCB**
Frequency:	**60 Hz**
Fuel type:	**Diesel**
kW rating:	**750 Standby** **680 Prime**
Emissions level:	**EPA NSPS Stationary Emergency Tier 2**

Exhaust emission data sheet:	**EDS-1087**
Exhaust emission compliance sheet:	**EPA-1121**
Sound data sheet:	**MSP-1159**
Sound data sheet – with seismic feature codes L228-2 (IBC) and/or L225-2 (OSHPD):	**MSP-1013**
Cooling system data in various ambient conditions:	**MCP-248**
Cooling system data in various ambient conditions – with seismic feature codes L228-2 (IBC) and/or L225-2 (OSHPD):	**MCP-174**
Prototype test summary data sheet:	**PTS-160**

Fuel consumption

	Standby				Prime				Continuous
	kW (kVA)				kW (kVA)				kW (kVA)
Ratings	750 (938)				680 (850)				
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**	**Full**
US gph	16.0	28.0	40.0	51.0	15.0	25.0	36.5	48.0	
L/hr	60.6	106.0	151.4	193.1	56.8	94.6	138.2	181.7	

Engine

	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QSK23-G7 NR2		
Configuration	Cast Iron, in line, 6 cylinder		
Aspiration	Turbocharged and low temperature after-cooled		
Gross engine power output, kWm (bhp)	910 (1220)	808 (1085)	
BMEP at set rated load, kPa (psi)	2435 (353)	2214 (321)	
Bore, mm (in.)	170 (6.69)		
Stroke, mm (in.)	170 (6.69)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	10.21 (2010)		
Compression ratio	16:1		
Lube oil capacity, L (qt)	102 (108)		
Overspeed limit, rpm	2100		
Regenerative power, kW	93		

Fuel flow

Maximum fuel flow, L/hr (US gph)	685 (181)	
Maximum fuel inlet restriction, kPa (in Hg)	13.44 (4)	
Maximum fuel inlet temperature, °C (°F)	71 (160)	

Air	Standby rating	Prime rating	Continuous rating
Combustion air, m^3/min (scfm)	64 (2242)	62 (2189)	
Maximum air cleaner restriction, kPa (in H_2O)	6.2 (25)		
Alternator cooling air, m^3/min (cfm)	117 (4156)		

Exhaust			
Exhaust flow at set rated load, m^3/min (cfm)	152 (5358)	146 (5147)	
Exhaust temperature, °C (°F)	476 (888)	458 (856)	
Maximum back pressure, kPa (in H_2O)	10.1 (40.8)		

Standard set-mounted radiator cooling (non-seismic)			
Ambient design, °C (°F)	50 (122)		
Fan load, kW_m (HP)	24 (32)		
Coolant capacity (with radiator), L (US gal)	109.5 (29)		
Cooling system air flow, m^3/min (scfm)	998 (35233)		
Total heat rejection, MJ/min (Btu/min)	32.3 (30655)	29.6 (28065)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)		
Maximum fuel return line restriction kPa (in Hg)	30.47 (9)		

Optional set-mounted radiator cooling (with seismic feature codes L228-2 (IBC) and/or L225-2 (OSHPD))			
Ambient design, °C (°F)	50 (122)		
Fan load, kW_m (HP)	27 (36)		
Coolant capacity (with radiator), L (US gal)	89 (23.5)		
Cooling system air flow, m^3/min (scfm)	1252 (44183)		
Total heat rejection, MJ/min (Btu/min)	32.3 (30655)	29.6 (28065)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)		
Maximum fuel return line restriction, kPa (in Hg)	30.47 (9)		

Optional heat exchanger cooling			
Set coolant capacity, L (US gal)			
Heat rejected, jacket water circuit, MJ/min (Btu/min)			
Heat rejected, aftercooler circuit, MJ/min (Btu/min)			
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)			
Maximum raw water pressure, jacket water circuit, kPa (psi)			
Maximum raw water pressure, aftercooler circuit, kPa (psi)			
Maximum raw water pressure, fuel circuit, kPa (psi)			
Maximum raw water flow, jacket water circuit, L/min (US gal/min)			
Maximum raw water flow, aftercooler circuit, L/min (US gal/min)			
Maximum raw water flow, fuel circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, jacket water circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, aftercooler circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, fuel circuit, L/min (US gal/min)			
Raw water delta P at min flow, jacket water circuit, kPa (psi)			

Exhaust emission data sheet 750DQCB

60 Hz Diesel generator set
EPA NSPS stationary emergency

Engine information:

Model:	Cummins Inc QSK23-G7 NR2	Bore:	6.69 in. (170 mm)
Type:	4 Cycle, in line, 6 cylinder diesel	Stroke:	6.69 in. (170 mm)
Aspiration:	Turbocharged and CAC	Displacement:	1413 cu. in. (23.1 liters)
Compression ratio:	16.0:1		
Emission control device:	Turbocharged with charge air-cooled		

Performance data	1/4 Standby	1/2 Standby	3/4 Standby	Full Standby	Full Prime
Engine HP @ stated load (1800 RPM)	275	550	825	1100	989
Fuel consumption (gal/Hr)	15.2	27.6	39.5	50.5	46.5
Exhaust gas flow (CFM)	2270.8	3464.5	4460.2	5160.8	4864
Exhaust gas temperature (°F)	623.6	726.9	786.2	840	815
Exhaust emission data					
HC (Total unburned hydrocarbons)	0.77	0.33	0.19	0.12	0.15
NOx (Oxides of nitrogen as NO2)	2.91	3.31	4.15	5.87	5.27
CO (Carbon monoxide)	0.95	0.37	0.19	0.28	0.25
PM (Particular matter)	0.27	0.1	0.05	0.05	0.05
SO2 (Sulfur dioxide)	0.12	0.11	0.1	0.1	0.1
Smoke (Bosch)	0.84	0.5	0.35	0.38	0.36

All values are Grams per HP-Hour

Test conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (± 2%). Pressures, temperatures, and emission rates were stabilized.

Fuel specification:	46.5 Cetane Number, 0.035 Wt.% Sulfur; Reference ISO8178-5, 40CFR86. 1313-98 Type 2-D and ASTM D975 No. 2-D.
Fuel temperature:	99 ± 9 °F (at fuel pump inlet)
Intake air temperature:	77 ± 9 °F
Barometric pressure:	29.6 ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

PERFORMANCE DATA[EM1390]

January 23, 2023

Performance Number: EM1390 **Change Level: 01**

SALES MODEL:	C18	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,500
MACHINE SALES MODEL:		**HERTZ:**	50
ENGINE POWER (BKW):	625.0	**FAN POWER (KW):**	8.0
GEN POWER WITH FAN (EKW):	572.0	**ADDITIONAL PARASITICS (KW):**	7.3
COMPRESSION RATIO:	14.5	**ASPIRATION:**	TA
RATING LEVEL:	STANDBY	**AFTERCOOLER TYPE:**	ATAAC
PUMP QUANTITY:	1	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC, ATAAC
FUEL TYPE:	DIESEL	**INLET MANIFOLD AIR TEMP (C):**	49
MANIFOLD TYPE:	DRY	**JACKET WATER TEMP (C):**	89
GOVERNOR TYPE:	ELEC	**TURBO CONFIGURATION:**	PARALLEL
CAMSHAFT TYPE:	STANDARD	**TURBO QUANTITY:**	2
IGNITION TYPE:	CI	**TURBOCHARGER MODEL:**	S310S089-1.00
INJECTOR TYPE:	EUI	**COMBUSTION STRATEGY:**	LOW BSFC
REF EXH STACK DIAMETER (MM):	152	**PISTON SPD @ RATED ENG SPD (M/SEC):**	9.2
MAX OPERATING ALTITUDE (M):	500		

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

General Performance Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	ISO BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	ISO VOL FUEL CONSUMPTN (VFC)	ELEC SPEC FUEL CONSUMPTN (ESFC)	ISO ELEC SPEC FUEL CONSUMPTN (ESFC)
EKW	%	BKW	KPA	G/BKW-HR	G/BKW-HR	L/HR	L/HR	G/EKW-HR	G/EKW-HR
572.0	100	625	2,756	196.3	194.4	144.2	142.9	214.3	212.3
514.8	90	562	2,479	195.6	193.8	129.3	128.1	213.5	211.5
457.6	80	500	2,206	194.0	192.1	114.1	113.0	211.9	209.9
429.0	75	469	2,070	193.1	191.2	106.6	105.6	211.2	209.1
400.4	70	438	1,935	192.8	190.9	99.4	98.5	211.1	209.1
343.2	60	378	1,666	192.7	190.8	85.6	84.8	212.0	209.9
286.0	50	317	1,399	193.6	191.7	72.2	71.5	214.6	212.6
228.8	40	258	1,137	196.0	194.2	59.5	58.9	220.9	218.8
171.6	30	198	876	200.6	198.7	46.8	46.4	232.0	229.8
143.0	25	169	744	204.3	202.4	40.5	40.2	241.0	238.7
114.4	20	139	611	209.8	207.8	34.2	33.9	254.2	251.7
57.2	10	77.6	342	234.5	232.3	21.4	21.2	318.0	314.9

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP
EKW	%	BKW	KPA	DEG C	DEG C	KPA	DEG C	KPA	DEG C
572.0	100	625	219.7	51.7	737.9	88.1	570.4	230	199.9
514.8	90	562	194.7	48.6	705.2	77.7	551.0	204	183.2
457.6	80	500	166.7	46.1	674.6	66.8	532.9	175	164.5
429.0	75	469	152.4	45.0	659.2	61.4	523.8	161	155.3
400.4	70	438	138.6	43.8	643.1	56.3	514.3	146	146.1
343.2	60	378	112.1	41.8	608.0	46.9	493.6	119	128.0
286.0	50	317	86.6	40.0	569.2	38.4	470.6	93	110.1
228.8	40	258	64.3	39.2	522.6	31.5	439.8	70	92.9
171.6	30	198	44.8	38.8	464.6	25.7	398.3	50	76.2
143.0	25	169	36.0	38.7	431.2	23.1	373.5	41	68.1
114.4	20	139	28.1	38.7	391.1	20.8	342.0	32	60.6
57.2	10	77.6	15.2	38.8	290.3	16.6	258.4	19	47.7

General Performance Data (Continued)

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	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	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)
EKW	%	BKW	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN

572.0	100	625	37.8	111.8	2,631.0	2,753.6	36.2	32.4
514.8	90	562	35.4	101.5	2,443.6	2,553.3	33.6	30.3
457.6	80	500	32.4	90.2	2,221.3	2,318.1	30.6	27.6
429.0	75	469	30.9	84.4	2,111.5	2,201.9	28.9	26.1
400.4	70	438	29.3	79.0	2,002.1	2,085.7	27.4	24.8
343.2	60	378	26.2	68.5	1,786.0	1,857.5	24.4	22.1
286.0	50	317	23.1	58.5	1,572.8	1,634.1	21.5	19.5
228.8	40	258	20.4	49.3	1,386.2	1,436.6	18.9	17.3
171.6	30	198	18.0	40.8	1,220.5	1,260.3	16.6	15.3
143.0	25	169	16.9	36.7	1,144.9	1,179.3	15.5	14.4
114.4	20	139	15.9	32.8	1,077.3	1,106.3	14.6	13.6
57.2	10	77.6	14.3	25.2	965.7	983.9	12.9	12.3

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXH RECOVERY TO 177C	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BKW	KW	KW	KW	KW	KW	KW	KW	KW	KW
572.0	100	625	181	90.0	548	328	77.6	109	625	1,457	1,552
514.8	90	562	165	83.3	489	288	69.6	91.9	562	1,306	1,391
457.6	80	500	150	75.0	429	248	61.4	73.5	500	1,152	1,227
429.0	75	469	143	69.6	400	229	57.3	65.1	469	1,077	1,147
400.4	70	438	137	66.7	371	210	53.5	57.2	438	1,004	1,070
343.2	60	378	124	60.9	316	175	46.0	43.0	378	864	921
286.0	50	317	111	55.1	263	142	38.9	30.8	317	729	777
228.8	40	258	97.5	49.1	215	111	32.0	20.8	258	601	640
171.6	30	198	83.2	41.5	168	81.4	25.2	12.8	198	473	504
143.0	25	169	75.5	36.8	146	67.3	21.8	9.4	169	409	436
114.4	20	139	66.1	33.4	123	52.6	18.4	6.6	139	346	368
57.2	10	77.6	42.0	29.4	79.0	22.7	11.5	2.4	77.6	216	230

Emissions Data

DIESEL

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITH FAN		EKW	572.0	429.0	286.0	143.0	57.2
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BKW	625	469	317	169	77.6
TOTAL NOX (AS NO2)		G/HR	5,020	4,573	3,889	1,978	1,063
TOTAL CO		G/HR	581	619	239	138	229
TOTAL HC		G/HR	7	5	13	9	17
TOTAL CO2		KG/HR	382	282	190	107	57
PART MATTER		G/HR	18.1	19.6	11.7	7.8	4.6
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,982.3	3,681.5	4,633.9	4,091.9	4,167.3
TOTAL CO	(CORR 5% O2)	MG/NM3	347.9	496.3	281.6	298.8	974.1
TOTAL HC	(CORR 5% O2)	MG/NM3	3.8	3.2	13.3	17.5	64.8
PART MATTER	(CORR 5% O2)	MG/NM3	8.7	12.8	11.5	14.0	16.0
TOTAL NOX (AS NO2)	(CORR 15% O2)	MG/NM3	1,106.7	1,366.1	1,719.5	1,518.4	1,546.4
TOTAL CO	(CORR 15% O2)	MG/NM3	129.1	184.2	104.5	110.9	361.5
TOTAL HC	(CORR 15% O2)	MG/NM3	1.4	1.2	4.9	6.5	24.0
PART MATTER	(CORR 15% O2)	MG/NM3	3.2	4.8	4.3	5.2	5.9
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,453	1,793	2,257	1,993	2,030
TOTAL CO	(CORR 5% O2)	PPM	278	397	225	239	779
TOTAL HC	(CORR 5% O2)	PPM	7	6	25	33	121
TOTAL NOX (AS NO2)	(CORR 15% O2)	PPM	539	665	838	740	753
TOTAL CO	(CORR 15% O2)	PPM	103	147	84	89	289
TOTAL HC	(CORR 15% O2)	PPM	3	2	9	12	45
TOTAL NOX (AS NO2)		G/HP-HR	6.10	7.34	9.19	8.77	10.24
TOTAL CO		G/HP-HR	0.71	0.99	0.56	0.61	2.20
TOTAL HC		G/HP-HR	0.01	0.01	0.03	0.04	0.17

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PART MATTER	G/HP-HR	0.02	0.03	0.03	0.03	0.04
TOTAL NOX (AS NO2)	G/KW-HR	8.29	9.98	12.50	11.93	13.93
TOTAL CO	G/KW-HR	0.96	1.35	0.77	0.83	3.00
TOTAL HC	G/KW-HR	0.01	0.01	0.04	0.05	0.23
PART MATTER	G/KW-HR	0.03	0.04	0.04	0.05	0.06
TOTAL NOX (AS NO2)	LB/HR	11.07	10.08	8.57	4.36	2.34
TOTAL CO	LB/HR	1.28	1.37	0.53	0.31	0.50
TOTAL HC	LB/HR	0.02	0.01	0.03	0.02	0.04
TOTAL CO2	LB/HR	842	621	420	237	125
PART MATTER	LB/HR	0.04	0.04	0.03	0.02	0.01
OXYGEN IN EXH	%	7.0	8.1	9.3	12.0	15.3
DRY SMOKE OPACITY	%	0.5	0.8	0.7	0.7	0.3
BOSCH SMOKE NUMBER		0.73	0.79	0.78	0.78	0.65

RATED SPEED POTENTIAL SITE VARIATION: 1500 RPM

GENSET POWER WITH FAN		**EKW**	**572.0**	**429.0**	**286.0**	**143.0**	**57.2**
PERCENT LOAD		**%**	**100**	**75**	**50**	**25**	**10**
ENGINE POWER		**BKW**	**625**	**469**	**317**	**169**	**77.6**
TOTAL NOX (AS NO2)		G/HR	5,421	4,939	4,200	2,136	1,148
TOTAL CO		G/HR	1,087	1,158	447	259	427
TOTAL HC		G/HR	14	9	24	17	33
PART MATTER		G/HR	35.3	38.2	22.8	15.2	9.0
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	3,220.9	3,976.0	5,004.7	4,419.2	4,500.7
TOTAL CO	(CORR 5% O2)	MG/NM3	650.6	928.1	526.5	558.8	1,821.5
TOTAL HC	(CORR 5% O2)	MG/NM3	7.2	6.1	25.1	33.0	122.4
PART MATTER	(CORR 5% O2)	MG/NM3	17.0	25.0	22.4	27.3	31.1
TOTAL NOX (AS NO2)	(CORR 15% O2)	MG/NM3	1,195.2	1,475.4	1,857.1	1,639.8	1,670.1
TOTAL CO	(CORR 15% O2)	MG/NM3	241.4	344.4	195.4	207.4	675.9
TOTAL HC	(CORR 15% O2)	MG/NM3	2.7	2.3	9.3	12.2	45.4
PART MATTER	(CORR 15% O2)	MG/NM3	6.3	9.3	8.3	10.1	11.6
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,569	1,937	2,438	2,153	2,192
TOTAL CO	(CORR 5% O2)	PPM	521	742	421	447	1,457
TOTAL HC	(CORR 5% O2)	PPM	13	11	47	62	229
TOTAL NOX (AS NO2)	(CORR 15% O2)	PPM	582	719	905	799	813
TOTAL CO	(CORR 15% O2)	PPM	193	276	156	166	541
TOTAL HC	(CORR 15% O2)	PPM	5	4	17	23	85
TOTAL NOX (AS NO2)		G/HP-HR	6.59	7.93	9.93	9.48	11.06
TOTAL CO		G/HP-HR	1.32	1.86	1.06	1.15	4.12
TOTAL HC		G/HP-HR	0.02	0.01	0.06	0.07	0.32
PART MATTER		G/HP-HR	0.04	0.06	0.05	0.07	0.09
TOTAL NOX (AS NO2)		G/KW-HR	8.95	10.78	13.50	12.88	15.04
TOTAL CO		G/KW-HR	1.80	2.53	1.44	1.56	5.60
TOTAL HC		G/KW-HR	0.02	0.02	0.08	0.10	0.43
PART MATTER		G/KW-HR	0.06	0.08	0.07	0.09	0.12
TOTAL NOX (AS NO2)		LB/HR	11.95	10.89	9.26	4.71	2.53
TOTAL CO		LB/HR	2.40	2.55	0.98	0.57	0.94
TOTAL HC		LB/HR	0.03	0.02	0.05	0.04	0.07
PART MATTER		LB/HR	0.08	0.08	0.05	0.03	0.02

Regulatory Information

NON-CERTIFIED	**1970 - 2100**
THIS ENGINE RATING IS NOT EMISSIONS CERTIFIED BY ANY DOMESTIC OR FOREIGN AGENCY.	

Altitude Derate Data

STANDARD

ALTITUDE CORRECTED POWER CAPABILITY (BKW)

Perf No: EM1361 **Change Level:** 04

General Heat Rejection Sound Emissions Regulatory Altitude Derate Cross Reference Perf Param Ref
View PDF

SALES MODEL:	C175-20	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,500
ENGINE POWER (BKW):	3,368.0	**HERTZ:**	50
GEN POWER W/O FAN (EKW):	3,200.0	**ASPIRATION:**	TA
COMPRESSION RATIO:	15.3	**AFTERCOOLER TYPE:**	SCAC
RATING LEVEL:	MISSION CRITICAL STANDBY	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC+1AC, 2AC
PUMP QUANTITY:	2	**AFTERCOOLER TEMP (C):**	46
FUEL TYPE:	DIESEL	**JACKET WATER TEMP (C):**	99
MANIFOLD TYPE:	DRY	**TURBO CONFIGURATION:**	PARALLEL
GOVERNOR TYPE:	ADEM4	**TURBO QUANTITY:**	4
ELECTRONICS TYPE:	ADEM4	**TURBOCHARGER MODEL:**	GTB6251BN-48T-1.38
CAMSHAFT TYPE:	STANDARD	**COMBUSTION STRATEGY:**	LOW EMISSION
IGNITION TYPE:	CI	**CRANKCASE BLOWBY RATE (M3/HR):**	64.3
INJECTOR TYPE:	CR	**FUEL RATE (RATED RPM) NO LOAD (L/HR):**	54.4
FUEL INJECTOR:	4439454	**PISTON SPD @ RATED ENG SPD (M/SEC):**	11.0
REF EXH STACK DIAMETER (MM):	356		

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

General Performance Data Top

GENSET POWER WITHOUT 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	%	BKW	KPA	G/BKW-HR	L/HR	KPA	DEG C	DEG C	KPA	DEG C
3,200.0	100	3,368	2,546	206.4	817.7	297.2	50.8	634.2	231.7	460.7
2,880.0	90	3,032	2,292	211.2	753.4	283.5	49.6	614.8	218.0	447.6
2,560.0	80	2,695	2,037	215.4	682.8	261.6	48.4	594.2	199.2	437.1
2,400.0	75	2,526	1,910	217.1	645.1	247.6	47.8	583.5	187.9	432.9
2,240.0	70	2,358	1,782	217.8	604.1	229.6	47.2	572.8	173.8	430.9
1,920.0	60	2,021	1,528	218.3	519.1	189.1	45.9	549.9	143.1	427.4
1,600.0	50	1,684	1,273	218.8	433.5	146.6	44.6	524.9	112.1	421.6
1,280.0	40	1,347	1,018	224.6	356.0	109.4	43.4	494.9	86.9	409.9
960.0	30	1,011	764	235.3	279.8	75.4	42.2	455.6	64.6	388.6
800.0	25	842	637	243.7	241.4	59.6	41.6	432.5	54.6	374.3
640.0	20	674	509	254.8	202.0	45.7	41.2	392.8	45.3	343.4
320.0	10	337	255	308.0	122.0	21.7	40.8	291.0	28.9	259.0

GENSET POWER WITHOUT 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	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)
EKW	%	BKW	KPA	DEG C	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN
3,200.0	100	3,368	299	227.9	305.5	704.6	19,260.4	19,954.9	262.2	240.3
2,880.0	90	3,032	285	220.1	297.5	672.5	18,754.5	19,394.8	254.8	234.5
2,560.0	80	2,695	263	207.8	282.4	627.7	17,788.3	18,368.9	241.4	222.8
2,400.0	75	2,526	249	199.9	272.2	600.6	17,132.5	17,681.1	232.4	214.7
2,240.0	70	2,358	231	188.7	258.6	567.4	16,252.9	16,766.5	220.2	203.5
1,920.0	60	2,021	191	165.9	227.5	494.2	14,246.6	14,687.4	192.7	178.3
1,600.0	50	1,684	148	142.9	194.3	417.2	12,115.6	12,483.1	164.0	152.0
1,280.0	40	1,347	111	119.2	164.9	347.9	10,255.3	10,556.0	139.1	129.1
960.0	30	1,011	77	95.8	137.6	280.5	8,544.2	8,780.6	115.8	107.8
800.0	25	842	61	84.3	124.6	247.6	7,743.1	7,948.2	104.5	97.5
640.0	20	674	48	73.2	113.3	214.9	7,034.3	7,206.1	95.2	89.3
320.0	10	337	23	51.6	93.2	150.8	5,786.0	5,889.7	77.4	73.5

Heat Rejection Data Top

Note(s)
PUMP POWER IS INCLUDED IN HEAT REJECTION BALANCE, BUT IS NOT SHOWN.

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXH RECOVERY TO 177C	FROM OIL COOLER	FROM 2ND STAGE AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BKW	KW	KW	KW	KW	KW	KW	KW	KW	KW
3,200.0	100	3,368	1,732	196	3,034	1,672	440	374	3,368	8,261	8,800
2,880.0	90	3,032	1,648	190	2,793	1,544	405	334	3,032	7,610	8,107
2,560.0	80	2,695	1,535	183	2,531	1,402	367	294	2,695	6,897	7,347
2,400.0	75	2,526	1,467	180	2,391	1,326	347	274	2,526	6,517	6,942
2,240.0	70	2,358	1,386	177	2,241	1,247	325	254	2,358	6,103	6,501
1,920.0	60	2,021	1,207	171	1,928	1,076	279	215	2,021	5,244	5,586
1,600.0	50	1,684	1,019	165	1,614	892	233	175	1,684	4,379	4,665
1,280.0	40	1,347	845	158	1,339	717	192	144	1,347	3,596	3,831
960.0	30	1,011	680	150	1,057	539	151	115	1,011	2,826	3,010
800.0	25	842	601	146	907	454	130	100.0	842	2,438	2,598
640.0	20	674	533	141	744	345	109	83.4	674	2,040	2,173
320.0	10	337	413	129	396	137	65.7	48.6	337	1,233	1,313

Sound Data Top

Note(s)
SOUND DATA REPRESENTATIVE OF NOISE PRODUCED BY THE "ENGINE ONLY"

EXHAUST: Sound Power (1/3 Octave Frequencies)

GENSET POWER WITHOUT 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	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3,200.0	100	3,368	128.5	94.9	113.2	107.8	109.1	111.9	112.0	113.0	116.2	115.4	113.3
2,880.0	90	3,032	127.9	94.0	113.5	106.9	108.1	111.5	110.9	111.9	115.3	113.8	112.1
2,560.0	80	2,695	126.3	94.2	112.0	106.2	107.7	111.1	110.0	111.0	114.6	112.4	111.0
2,400.0	75	2,526	125.5	93.7	110.5	105.9	107.6	110.3	109.2	110.9	113.9	111.7	110.4
2,240.0	70	2,358	124.7	92.3	108.9	105.1	107.0	108.2	108.0	109.8	113.3	111.1	110.2
1,920.0	60	2,021	123.5	91.9	108.6	104.8	105.7	106.2	107.2	109.4	112.9	110.3	109.6
1,600.0	50	1,684	122.4	90.1	108.7	105.5	104.8	106.9	108.1	109.7	111.4	109.8	109.2
1,280.0	40	1,347	120.7	90.6	103.9	105.8	103.9	105.0	107.9	108.8	110.2	108.4	107.5
960.0	30	1,011	119.2	92.2	102.4	104.9	102.0	104.6	107.8	105.8	108.3	107.3	106.4
800.0	25	842	118.5	93.1	104.2	103.6	101.2	103.7	107.7	105.2	107.5	106.8	106.1
640.0	20	674	118.1	88.8	110.0	100.4	103.6	102.8	104.8	105.1	107.4	106.2	106.0
320.0	10	337	116.1	83.4	101.6	99.1	100.0	99.5	100.6	101.9	105.8	105.3	105.1

EXHAUST: Sound Power (1/3 Octave Frequencies)

GENSET POWER WITHOUT 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	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3,200.0	100	3,368	118.7	120.7	120.0	119.9	118.3	115.1	111.1	108.0	105.4	103.4	111.8
2,880.0	90	3,032	117.5	118.9	119.1	119.0	117.0	114.0	109.9	106.9	104.4	102.8	118.4
2,560.0	80	2,695	115.9	117.4	117.7	117.9	116.0	112.9	108.9	105.8	103.5	101.7	111.9
2,400.0	75	2,526	115.1	116.7	116.8	117.3	115.7	112.5	108.5	105.2	103.2	101.5	107.9
2,240.0	70	2,358	114.1	115.9	116.1	116.6	115.2	112.1	108.1	104.7	102.9	102.0	103.7
1,920.0	60	2,021	112.5	114.5	114.5	114.9	114.1	111.0	107.0	103.6	102.5	102.9	96.4
1,600.0	50	1,684	111.1	113.2	112.7	112.9	112.7	109.5	105.7	102.5	102.2	101.5	94.4
1,280.0	40	1,347	109.6	111.1	110.6	110.9	110.9	107.6	104.1	101.2	102.6	97.7	93.0
960.0	30	1,011	108.0	109.7	108.6	109.1	108.8	105.8	102.3	100.4	100.0	95.6	91.5
800.0	25	842	107.2	109.0	107.5	108.2	107.8	104.9	101.5	100.3	98.3	95.1	91.0
640.0	20	674	106.5	108.1	106.4	107.5	107.1	104.2	100.8	100.2	96.7	94.8	90.7
320.0	10	337	105.8	107.0	105.5	105.7	105.5	102.0	101.8	96.4	95.8	94.2	89.5

MECHANICAL: Sound Power (1/3 Octave Frequencies)

GENSET POWER WITHOUT 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	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3,200.0	100	3,368	126.2	90.3	99.0	97.9	103.3	102.1	110.4	110.0	111.6	112.1	113.7
2,880.0	90	3,032	126.3	90.0	99.1	97.8	102.9	102.1	109.9	109.6	111.2	111.9	113.4
2,560.0	80	2,695	125.3	89.6	97.9	97.5	102.1	102.1	109.2	109.2	110.9	111.8	112.9
2,400.0	75	2,526	124.8	89.5	97.4	97.4	101.8	102.4	109.1	109.4	110.9	111.9	112.8
2,240.0	70	2,358	124.4	89.4	96.5	97.3	101.5	102.5	108.6	109.8	110.8	111.9	112.6
1,920.0	60	2,021	123.9	89.0	96.4	97.5	101.4	102.7	107.7	110.0	110.5	111.8	112.2
1,600.0	50	1,684	123.2	88.0	96.6	97.8	100.7	102.3	107.3	109.4	110.2	111.6	111.9
1,280.0	40	1,347	122.3	87.1	97.0	99.1	100.0	102.5	106.6	108.9	110.0	111.0	110.6
960.0	30	1,011	121.8	86.1	96.1	99.4	99.1	102.9	106.3	108.8	110.4	111.4	109.9
800.0	25	842	121.7	85.6	94.9	98.8	98.4	103.2	106.5	108.9	110.9	112.1	110.0
640.0	20	674	121.9	85.0	94.0	97.9	97.4	103.0	106.6	109.3	111.7	113.0	111.0
320.0	10	337	121.9	84.9	94.3	98.5	94.4	102.3	105.9	109.0	111.4	113.4	111.5

MECHANICAL: Sound Power (1/3 Octave Frequencies)

GENSET POWER WITHOUT 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	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3,200.0	100	3,368	114.8	114.6	114.8	115.5	114.6	113.4	111.5	112.0	113.6	112.6	119.4
2,880.0	90	3,032	114.5	114.3	114.6	115.0	114.0	113.5	111.3	111.7	113.0	112.2	121.2
2,560.0	80	2,695	114.1	114.0	114.3	114.6	113.7	112.4	110.8	110.9	112.3	111.2	118.5
2,400.0	75	2,526	113.9	114.1	114.3	114.5	113.6	112.0	110.5	110.4	112.0	110.7	115.8
2,240.0	70	2,358	113.9	114.2	114.4	114.4	113.5	111.7	110.3	110.1	111.5	110.6	112.8
1,920.0	60	2,021	113.6	114.4	114.2	113.9	113.1	111.2	109.7	109.4	111.1	111.2	107.9
1,600.0	50	1,684	112.7	114.1	113.3	112.9	112.0	110.4	108.9	108.5	110.6	109.8	106.1
1,280.0	40	1,347	112.0	112.5	112.2	111.9	110.8	109.6	108.0	107.5	110.3	106.8	104.5
960.0	30	1,011	111.3	112.6	111.8	111.2	109.9	109.1	107.2	106.8	108.2	104.8	102.3
800.0	25	842	111.3	112.5	111.5	111.1	109.7	108.9	106.8	106.4	106.6	104.3	101.8
640.0	20	674	111.9	112.4	111.3	110.9	109.8	109.0	105.9	105.6	104.9	104.1	101.4
320.0	10	337	112.5	112.7	111.7	110.6	110.2	108.1	106.0	103.3	104.2	103.2	99.9

Emissions Data Top

Units Filter All Units

RATED SPEED POTENTIAL SITE VARIATION: 1500 RPM

GENSET POWER WITHOUT FAN		EKW	3,200.0	2,400.0	1,600.0	800.0	320.0
ENGINE POWER		BKW	3,368	2,526	1,684	842	337
PERCENT LOAD		%	100	75	50	25	10
TOTAL NOX (AS NO2)		G/HR	27,113	14,732	10,006	5,037	3,993
TOTAL CO		G/HR	4,423	6,028	4,331	2,505	2,192
TOTAL HC		G/HR	635	719	839	1,091	1,189
PART MATTER		G/HR	74.3	171.8	231.4	198.7	73.3
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,816.0	1,942.1	1,965.5	1,808.3	2,803.1
TOTAL CO	(CORR 5% O2)	MG/NM3	458.9	793.1	853.0	904.0	1,539.9
TOTAL HC	(CORR 5% O2)	MG/NM3	57.2	81.8	143.2	341.1	723.4
PART MATTER	(CORR 5% O2)	MG/NM3	6.5	19.3	39.1	62.4	46.2
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,372	946	957	881	1,365
TOTAL CO	(CORR 5% O2)	PPM	367	634	682	723	1,232
TOTAL HC	(CORR 5% O2)	PPM	107	153	267	637	1,350
TOTAL NOX (AS NO2)		G/HP-HR	5.99	4.34	4.41	4.44	8.80
TOTAL CO		G/HP-HR	0.98	1.77	1.91	2.21	4.83
TOTAL HC		G/HP-HR	0.14	0.21	0.37	0.96	2.62
PART MATTER		G/HP-HR	0.02	0.05	0.10	0.18	0.16
TOTAL NOX (AS NO2)		LB/HR	59.77	32.48	22.06	11.10	8.80
TOTAL CO		LB/HR	9.75	13.29	9.55	5.52	4.83
TOTAL HC		LB/HR	1.40	1.59	1.85	2.41	2.62
PART MATTER		LB/HR	0.16	0.38	0.51	0.44	0.16

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITHOUT FAN		EKW	3,200.0	2,400.0	1,600.0	800.0	320.0
ENGINE POWER		BKW	3,368	2,526	1,684	842	337
PERCENT LOAD		%	100	75	50	25	10
TOTAL NOX (AS NO2)		G/HR	22,594	12,277	8,338	4,197	3,328
TOTAL CO		G/HR	2,457	3,349	2,406	1,392	1,218
TOTAL HC		G/HR	478	541	631	820	894

GENSET POWER WITHOUT FAN		**EKW**	**3,200.0**	**2,400.0**	**1,600.0**	**800.0**	**320.0**
ENGINE POWER		**BKW**	**3,368**	**2,526**	**1,684**	**842**	**337**
PERCENT LOAD		**%**	**100**	**75**	**50**	**25**	**10**
TOTAL CO2		KG/HR	2,188	1,716	1,144	619	312
PART MATTER		G/HR	53.1	122.7	165.3	141.9	52.3
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,346.6	1,618.4	1,638.0	1,506.9	2,336.0
TOTAL CO	(CORR 5% O2)	MG/NM3	254.9	440.6	473.9	502.2	855.5
TOTAL HC	(CORR 5% O2)	MG/NM3	43.0	61.5	107.7	256.5	543.9
PART MATTER	(CORR 5% O2)	MG/NM3	4.6	13.8	27.9	44.6	33.0
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,143	788	798	734	1,138
TOTAL CO	(CORR 5% O2)	PPM	204	352	379	402	684
TOTAL HC	(CORR 5% O2)	PPM	80	115	201	479	1,015
TOTAL NOX (AS NO2)		G/HP-HR	4.99	3.61	3.68	3.70	7.33
TOTAL CO		G/HP-HR	0.54	0.99	1.06	1.23	2.68
TOTAL HC		G/HP-HR	0.11	0.16	0.28	0.72	1.97
PART MATTER		G/HP-HR	0.01	0.04	0.07	0.13	0.12
TOTAL NOX (AS NO2)		LB/HR	49.81	27.06	18.38	9.25	7.34
TOTAL CO		LB/HR	5.42	7.38	5.31	3.07	2.68
TOTAL HC		LB/HR	1.05	1.19	1.39	1.81	1.97
TOTAL CO2		LB/HR	4,824	3,784	2,522	1,365	687
PART MATTER		LB/HR	0.12	0.27	0.36	0.31	0.12
OXYGEN IN EXH		%	10.1	11.4	11.9	13.3	15.7
DRY SMOKE OPACITY		%	0.1	1.3	3.3	4.3	1.0
BOSCH SMOKE NUMBER			0.68	0.79	0.98	1.07	0.76

Regulatory Information Top

NON-CERTIFIED	**1970 - 2100**

THIS ENGINE RATING IS NOT EMISSIONS CERTIFIED BY ANY DOMESTIC OR FOREIGN AGENCY.

Altitude Derate Data Top

Note(s)

ALTITUDE DERATE DATA IS BASED ON THE ASSUMPTION OF A 20 DEGREES CELSIUS(36 DEGREES FAHRENHEIT) DIFFERENCE BETWEEN AMBIENT OPERATING TEMPERATURE AND ENGINE INLET SCAC TEMPERATURE. AMBIEI

ALTITUDE CORRECTED POWER CAPABILITY (BKW)

AMBIENT OPERATING TEMP (C)	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**NORMAL**
ALTITUDE (M)														
0	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,368
250	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,210	2,807	2,717	2,677	2,635	3,368
500	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,368	2,804	2,761	2,717	2,679	2,622	3,368
750	3,368	3,368	3,368	3,368	3,368	3,368	3,368	3,310	2,803	2,762	2,713	2,677	2,616	3,368
1,000	3,368	3,368	3,368	3,368	3,368	3,368	3,343	3,127	2,806	2,764	2,711	2,665	2,608	3,368
1,250	3,365	3,365	3,365	3,364	3,364	3,364	3,295	2,850	2,809	2,765	2,711	2,646	2,595	3,364
1,500	3,303	3,294	3,285	3,276	3,265	3,254	3,155	2,855	2,813	2,758	2,697	2,639	2,543	3,273
1,750	3,220	3,207	3,193	3,181	3,165	3,150	2,977	2,789	2,740	2,678	2,608	2,546	2,447	3,182
2,000	3,117	3,103	3,090	3,079	3,065	3,051	2,756	2,645	2,584	2,517	2,438	2,360	2,304	3,083
2,250	3,017	3,006	2,995	2,986	2,975	2,826	2,627	2,542	2,487	2,429	2,363	2,295	2,243	2,993
2,500	2,918	2,910	2,901	2,893	2,885	2,628	2,537	2,464	2,416	2,368	2,316	2,260	2,206	2,902
2,750	2,821	2,813	2,803	2,795	2,785	2,668	2,564	2,481	2,428	2,377	2,327	2,275	2,224	2,807
3,000	2,722	2,713	2,703	2,694	2,684	2,656	2,567	2,487	2,431	2,378	2,330	2,282	2,228	2,710
3,250	2,620	2,609	2,599	2,590	2,582	2,565	2,532	2,477	2,421	2,367	2,321	2,277	2,214	2,610
3,500	2,523	2,512	2,501	2,494	2,485	2,475	2,467	2,434	2,390	2,347	2,306	2,256	2,178	2,516
3,750	2,432	2,420	2,410	2,403	2,394	2,386	2,379	2,362	2,343	2,319	2,285	2,224	2,124	2,428
4,000	2,338	2,323	2,312	2,302	2,292	2,284	2,276	2,267	2,257	2,242	2,217	2,167	2,072	2,338
4,250	2,242	2,223	2,208	2,195	2,184	2,175	2,164	2,155	2,145	2,132	2,116	2,094	2,022	2,249
4,500	2,145	2,126	2,111	2,098	2,088	2,079	2,068	2,060	2,052	2,041	2,030	2,022	1,973	2,159

Cross Reference Top

Test Spec	**Setting**	**Engine Arrangement**	**Engineering Model**	**Engineering Model Version**	**Start Effective Serial Number**	**End Effective Serial Number**
4577023	LL6685	4806566	GS269	-	BXR00001	
4577023	LL6685	5683573	PG325	-	TZ800100	
4577023	LL6686	5683573	PG325	-	TZ800100	

Performance Parameter Reference Top

Parameters Reference: DM9600 - 12

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 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.

Specification Sheet

Diesel Generator Set QSK95 Series Engine

2500 kW-3500 kW 60 Hz

EPA Tier 2 Emissions Regulated

Description

Cummins® commercial generator sets are fully integrated power generation systems providing optimum performance, fuel economy, reliability and versatility for stationary Standby, Prime and Continuous power applications.

Features

Cummins Heavy-Duty Engine - Rugged 4-cycle, industrial diesel delivers reliable power, low emissions and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Control System - The PowerCommand® digital control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, AmpSentry™ protective relay, output metering and auto-shutdown.

Cooling System - Standard and enhanced integral set-mounted radiator systems, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat. Also optional remote cooled configuration for non-factory supplied cooling systems.

Warranty and Service - Backed by a comprehensive warranty and worldwide distributor network.

NFPA - The generator set accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

ISO8528-5 G3 Capable - refer to factory for site and configuration specific transient performance classification

	Standby Rating	Prime Rating	Continuous Rating	Emissions Compliance	Data Sheets
Model	60 Hz kW (kVA)	60 Hz kW (kVA)	60 Hz kW (kVA)	EPA	60 Hz
C3000 D6e	3000 (3750)	2750 (3438)	2500 (3125)	EPA Tier 2	NAD-5942-EN
C3250 D6e	3250 (4063)	3000 (3750)	2500 (3125)	EPA Tier 2	NAD-3527-EN
C3500 D6e	3500 (4375)	3000 (3750)	2750 (3438)	EPA Tier 2	NAD-5917-EN

Note: All ratings include radiator fan losses.

Generator set data sheet

Model:	**C3000 D6e**
Frequency:	**60 Hz**
Fuel type:	**Diesel**
kW rating:	**3000 Standby** **2750 Prime** **2500 Continuous**
Emissions level:	**EPA NSPS Stationary emergency Tier 2**

Fuel consumption

	Standby				Prime				Continuous			
	kW (kVA)				kW (kVA)				kW (kVA)			
Ratings	3000 (3750)				2750 (3438)				2500 (3125)			
Ratings without fan[1]	~~3875 (3844)~~				2826 (3532)				2576 (3220)			
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**
US gph	67	113	158	202	63	104	145	187	59	97	134	172
L/hr	254	428	598	769	238	394	549	708	223	367	507	651

[1]Ratings for reference with the optional remote radiator cooling configuration. See note 1 under “Alternator data” section.

Engine

	Standby rating	Prime rating	Continuous rating
Engine model	QSK95-G9		
Configuration	Cast iron, Vee, 16 cylinder		
Aspiration	Turbocharged and after-cooled		
Gross engine power output, kWm (bhp)	3213 (4307)	2923 (3918)	2665 (3572)
BMEP at set rated load, kPa (psi)	2248 (326)	2041 (296)	1862 (270)
Bore, mm (in.)	190.0 (7.48)		
Stroke, mm (in.)	210.1 (8.27)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	12.6 (2480)		
Compression ratio	15.1:1		
Lube oil capacity, L (qt)	647 (684)		
Overspeed limit, rpm	2070		
Regenerative power, kW	321		

Fuel flow

Maximum fuel flow, L/hr (US gph)	1601.1 (423)
Maximum fuel inlet restriction with clean filter, kPa (in Hg)	13.5 (4)
Maximum fuel return line restriction, kPa (in Hg)	34 (10)
Maximum fuel inlet temperature, °C (°F)	71.1 (160)
Maximum fuel outlet temperature, °C (°F)	92.2 (198)

Air	Standby rating	Prime rating	Continuous rating
Combustion air, m^3/min (scfm)	270 (9550)	265 (9350)	260 (9170)
Maximum air cleaner restriction with clean filter, mm H_2O (in H_2O)	457 (18)		
Alternator cooling air, m^3/min (scfm)	255 (9005)		

Exhaust			
Exhaust flow at set rated load, m^3/min (scfm)	641 (22630)	605 (21370)	573 (20250)
Exhaust temperature at set rated load, °C (°F)	441 (825)	414 (778)	392 (737)
Maximum back pressure, kPa (in H_2O)	7 (28)		

Standard set-mounted radiator cooling	
Ambient design, °C (°F)	48 118
Fan load, kWm (HP)	78 (105)
Coolant capacity (with radiator), L (US gal)	1120 (296)
Cooling system air flow, m^3/min (scfm)	3135 (110700)
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)

Optional set-mounted radiator cooling	
Ambient design, °C (°F)	50 (122)
Fan load, kWm (HP)	78 (105)
Coolant capacity (with radiator), L (US gal)	1120 (296)
Cooling system air flow, m^3/min (scfm)	3135 (110700)
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)

Optional remote radiator cooling			
Engine coolant capacity, L (US gal)	379 (100)		
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)	3081 (814)		
Max flow rate at max friction head, after-cooler circuit, L/min (US gal/min)	651 (172)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	90 (85280)	81.60 (77310)	74.10 (70230)
Heat rejected, after-cooler circuit, MJ/min (Btu/min)	21.30 (20190)	20.20 (19110)	19.10 (18150)
Heat rejected, fuel circuit, MJ/min (Btu/min)	0.26 (248)	0.23 (222)	0.21 (199)
Total heat radiated to room, MJ/min (Btu/min)	24.70 (23380)	22.60 (21390)	20.60 (19570)
Maximum friction head, jacket water circuit, kPa (psi)	83 (12)		
Maximum friction head, after-cooler circuit, kPa (psi)	83 (12)		
Maximum static head above engine crank centerline, jacket water circuit, m (ft)	18 (60)		
Maximum static head above engine crank centerline, after-cooler circuit, m (ft)	18 (60)		
Maximum jacket water outlet temp, °C (°F)	140.4 (220)	100 (212)	100 (212)
Maximum after-cooler inlet temp, °C (°F)	71.1 (160)	68 (155)	68 (155)
Maximum after-cooler inlet temp at 25 °C (77 °F) ambient, °C (°F)	46.1 (115)		

Note: For non-standard remote installations contact your local Cummins representative.

Exhaust emission data sheet
C3000 D6e
60 Hz Diesel generator set
EPA Tier 2

Engine Information:			
Model:	Cummins Inc. QSK95-G9	Bore:	7.48 in. (190 mm)
Type:	4 Cycle, VEE, 16 cylinder diesel	Stroke:	8.27 in. (210 mm)
Aspiration:	Turbocharged and Aftercooled	Displacement:	5816 cu. in. (95.3 liters)
Compression Ratio:	15.5:1		
Emission Control Device:	Turbocharged and Aftercooled		
Emission Level:	Stationary Emergency		

Performance Data	1/4 Standby	1/2 Standby	3/4 Standby	Full Standby	Full Prime	Full Continuous
BHP @ 1800 RPM (60 Hz)	1145	2185	3225	4308	3919	3572
Fuel Consumption L/Hr (US Gal/Hr)	254 (67)	443 (117)	602 (159)	787 (208)	719 (190)	659 (174)
Exhaust Gas Flow m³/min (CFM)	282 (9963)	45 (15921)	55 (19592)	662 (23369)	623 (21997)	588 (20776)
Exhaust Gas Temperature °C (°F)	331 (628)	354 (670)	377 (711)	443 (830)	417 (783)	396 (745)
Exhaust Emission Data						
HC (Total Unburned Hydrocarbons)	0.3 (114)	0.18 (76)	0.1 (48)	0.07 (33)	0.08 (37)	0.09 (42)
NOx (Oxides of Nitrogen as NO_2)	3.4 (1290)	3.3 (1350)	4.2 (1900)	5.2 (2440)	4.9 (2250)	4.5 (2080)
CO (Carbon Monoxide)	0.5 (170)	0.2 (90)	0.1 (60)	0.2 (100)	0.2 (80)	0.2 (70)
PM (Particulate Matter)	0.21 (69)	0.1 (37)	0.06 (23)	0.04 (18)	0.05 (19)	0.05 (21)
SO_2 (Sulfur Dioxide)	0.006 (1.8)	0.005 (1.8)	0.005 (1.8)	0.005 (1.8)	0.005 (1.8)	0.005 (1.8)
Smoke (FSN)	0.92	0.62	0.46	0.44	0.44	0.45

All values (except smoke) are cited: g/BHP-hr (mg/Nm³ @ 5% O_2)

Test Conditions

Steady-state emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized.

Fuel Specification:	40-48 Cetane Number, 0.0015 Wt.% Sulfur; Reference ISO8178-5, 40 CFR 86, 1313—98 Type 2-D and ASTM D975 No. 2-D. Fuel Density at 0.85 Kg/L (7.1 lbs/US Gal)
Air Inlet Temperature	25 °C (77 °F)
Fuel Inlet Temperature:	40 °C (104 °F)
Barometric Pressure:	100 kPa (29.53 in Hg)
Humidity:	NOx measurement corrected to 10.7 g/kg (75 grains H_2O/lb) of dry air
Intake Restriction:	Set to 20 in of H_2O as measured from compressor inlet
Exhaust Back Pressure:	Set to 1.5 in Hg
Note:	mg/m³ values are measured dry, corrected to 5% O_2 and normalized to standard temperature and pressure (0°C, 101.325 kPa)

The NOx, HC, CO and PM emission data tabulated here are representative of test data taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

Generator Set Data Sheet

Model:	**C3750 D5**
Frequency:	**50 Hz**
Fuel Type:	**Diesel**
kVA Rating:	**3750 Standby**
	3350 Prime
	3000 Continuous
Emissions Level:	**Unregulated**

Fuel Consumption

	Standby				Prime				Continuous			
	kVA (kW)				kVA (kW)				kVA (kW)			
Ratings	3750 (3000) †				3350 (2680)				3000 (2400)			
Ratings without fan[1]	3844 (3075)				3445 (2756)				3095 (2476)			
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
US gph	54	98	144	192	49	88	128	170	45	80	115	155
L/hr	204	369	545	726	186	333	483	645	171	305	436	585

[1]Ratings for reference with the optional remote radiator cooling configuration. See note 1 under “Alternator data” section.
†DCC available at standby power subject to Cummins’ site-specific assessment. Please contact your Cummins Distributor.

Engine

Engine	Standby rating	Prime rating	Continuous rating
Engine model	QSK95-G4		
Configuration	Cast iron, vee, 16 cylinder		
Aspiration	Turbocharged and after-cooled		
Gross engine power output, kWm (bhp)	3264 (4377)	2902 (3892)	2612 (3503)
BMEP at set rated load, kPa (psi)	2738 (397)	2434 (353)	2193 (318)
Bore, mm (in)	190.0 (7.48)		
Stroke, mm (in)	210.1 (8.27)		
Rated speed, rpm	1500		
Piston speed, m/s (ft/min)	10.5 (2067)		
Compression ratio	15.5:1		
Lube oil capacity, L (qt)	647 (684)		
Overspeed limit, rpm	1725		
Regenerative power, kW	230		

Fuel Flow

Maximum fuel flow, L/hr (US gph)	1392.9 (368)
Maximum fuel inlet restriction with clean filter, kPa (in Hg)	30.48 (9)
Maximum fuel return line restriction kPa (in Hg)	34 (10)
Maximum fuel inlet temperature, °C (°F)	71.1 (160)
Maximum fuel outlet temperature, °C (°F)	92.2 (198)

Air

Combustion air, m^3/min (scfm)	250 (8820)	236 (8331)	222 (7839)
Maximum air cleaner restriction with clean filter, mm H_2O (in H_2O)	457 (18)		
Alternator cooling air, m^3/min (cfm)	240 (8476)		

Exhaust	Standby rating	Prime rating	Continuous rating
Exhaust flow at set rated load, m^3/min (cfm)	589 (20767)	537 (18945)	501 (17678)
Exhaust temperature at set rated load, °C (°F)	419 (785)	398 (748)	392 (737)
Maximum back pressure, kPa (in H_2O)	7 (28)		

Set-Mounted Radiator Cooling	High Ambient	High Ambient Compact
Ambient design, °C (°F)	43 (109)	45 (113)
Fan load, kW_m (HP)	78 (105)	130 (175)
Coolant capacity (with radiator), L (US gal)	1120 (296)	1238 (327)
Cooling system air flow, m^3/min (scfm)	3135 (110700)	2352 (83054)
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)	0.12 (0.5)

Set-Mounted Radiator Cooling	Enhanced High Ambient
Ambient design, °C (°F)	52 (126)
Fan load, kW_m (HP)	78 (105)
Coolant capacity (with radiator), L (US gal)	1155 (305)
Cooling system air flow, m^3/min (scfm)	3135 (110700)
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)

Optional Remote Radiator Cooling			
Engine coolant capacity, L (US gal)	378.5 (100)		
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)	2419 (639)		
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)	153 (579)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	84.6 (80111)	75.5 (71504)	69.2 (65561)
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	20.7 (19583)	18.0 (16971)	15.5 (14665)
Heat rejected, fuel circuit, MJ/min (Btu/min)	0.33 (309)	0.33 (309)	0.33 (309)
Total heat radiated to room, MJ/min (Btu/min)	24.8 (23432)	22.1 (20888)	19.9 (18830)
Maximum friction head, jacket water circuit, kPa (psi)	59 (8.5)		
Maximum friction head, aftercooler circuit, kPa (psi)	59 (8.5)		
Maximum static head above engine crank centerline, jacket water circuit, m (ft)	18 (60)		
Maximum static head above engine crank centerline, aftercooler circuit, m (ft)	18 (60)		
Maximum jacket water outlet temp, °C (°F)	110 (230)	100 (212)	100 (212)
Maximum aftercooler inlet temp, °C (°F)	71.1 (160)	68 (155)	68 (155)
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)	46.1 (115)		

Note: For non-standard remote installations contact your local Cummins representative.

Weights

Unit dry weight kgs (lbs)	29630 (65186)
Unit wet weight kgs (lbs)	31494 (69287)

Note: Weights represent a set with standard features and alternator frame P80X. See outline drawing for weights of other configurations.

Exhaust Emission Data Sheet
C3750 D5
50 Hz Diesel Generator Set

Engine Information:			
Model:	Cummins Inc. QSK95-G4	Bore:	7.48 in. (190 mm)
Type:	4 Cycle, VEE, 16 cylinder diesel	Stroke:	8.27 in. (210 mm)
Aspiration:	Turbocharged and Aftercooled	Displacement:	5816 cu. in. (95.3 liters)
Compression Ratio:	15.5:1		
Emission Control Device:	Turbocharged and Aftercooled		
Emission Level:	Stationary Emergency		

Performance Data	1/4 Standby	1/2 Standby	3/4 Standby	Full Standby	Full Prime	Full Continuous
Engine BHP @ 1500 RPM (50 Hz)	1094	2189	3283	4377	3892	3503
Fuel Consumption L/Hr (US Gal/Hr)	204 (54)	371 (98)	545 (144)	726 (192)	645 (170)	585 (155)
Exhaust Gas Flow m^3/min (CFM)	209 (7393)	333 (11766)	470 (16601)	588 (20767)	536 (18945)	501 (17678)
Exhaust Gas Temperature °C (°F)	352 (665)	395 (743)	389 (732)	418 (785)	398 (748)	392 (737)
Exhaust Emission Data						
HC (Total Unburned Hydrocarbons)	0.23 (100)	0.12 (57)	0.08 (40)	0.06 (31)	0.07 (33)	0.08 (41)
NOx (Oxides of Nitrogen as NO_2)	9.07 (3953)	9.61 (4701)	7.42 (3677)	7.93 (3968)	7.58 (3798)	6.90 (3407)
CO (Carbon Monoxide)	0.48 (209)	0.33 (164)	0.13 (63)	0.10 (52)	0.10 (49)	0.11 (53)
PM (Particulate Matter)	0.07 (26)	0.01 (6)	0.01 (4)	0.004 (2)	0.005 (2)	0.01 (3)
SO_2 (Sulfur Dioxide)	0.005 (1.8)	0.004 (1.8)	0.004 (1.8)	0.004 (1.7)	0.004 (1.7)	0.004 (1.8)
Smoke (FSN)	0.48	0.15	0.09	0.05	0.05	0.09

All values (except smoke) are cited: g/BHP-hr (mg/Nm^3 @ 5% O2)

Test Conditions

Steady-state emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized.

Fuel Specification:	40-48 Cetane Number, 0.0015 Wt.% Sulfur; Reference ISO8178-5, 40 CFR 86, 1313—98 Type 2-D and ASTM D975 No. 2-D. Fuel Density at 0.85 Kg/L (7.1 lbs/US Gal)
Air Inlet Temperature	25 °C (77 °F)
Fuel Inlet Temperature:	40 °C (104 °F)
Barometric Pressure:	100 kPa (29.53 in Hg)
Humidity:	NOx measurement corrected to 10.7 g/kg (75 grains H_2O/lb) of dry air
Intake Restriction:	Set to 18 in of H_2O as measured from compressor inlet
Exhaust Back Pressure:	Set to 1.5 in Hg
Note:	mg/m^3 values are measured dry, corrected to 5% O_2 and normalized to standard temperature and pressure (0°C, 101.325 kPa)

The NOx, HC, CO and PM emission data tabulated here are representative of test data taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

PERFORMANCE DATA[EM0375]

January 23, 2023

Performance Number: EM0375 **Change Level: 03**

SALES MODEL:	C175-20	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,500
MACHINE SALES MODEL:		**HERTZ:**	50
ENGINE POWER (BKW):	3,368.0	**ASPIRATION:**	TA
GEN POWER W/O FAN (EKW):	3,200.0	**AFTERCOOLER TYPE:**	SCAC
COMPRESSION RATIO:	15.3	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC+1AC, 2AC
RATING LEVEL:	MISSION CRITICAL STANDBY	**AFTERCOOLER TEMP (C):**	46
PUMP QUANTITY:	2	**JACKET WATER TEMP (C):**	99
FUEL TYPE:	DIESEL	**TURBO CONFIGURATION:**	PARALLEL
MANIFOLD TYPE:	DRY	**TURBO QUANTITY:**	4
GOVERNOR TYPE:	ADEM4	**TURBOCHARGER MODEL:**	GTB6251BN-48T-1.38
ELECTRONICS TYPE:	ADEM4	**COMBUSTION STRATEGY:**	LOW BSFC
CAMSHAFT TYPE:	LSMOL	**CRANKCASE BLOWBY RATE (M3/HR):**	64.3
IGNITION TYPE:	CI	**FUEL RATE (RATED RPM) NO LOAD (L/HR):**	54.4
INJECTOR TYPE:	CR	**PISTON SPD @ RATED ENG SPD (M/SEC):**	11.0
FUEL INJECTOR:	3492522		
REF EXH STACK DIAMETER (MM):	356		

INDUSTRY	SUBINDUSTRY	APPLICATION
ELECTRIC POWER	STANDARD	GENERATOR SET

General Performance Data

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	ISO BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	ISO VOL FUEL CONSUMPTN (VFC)	ELEC SPEC FUEL CONSUMPTN (ESFC)	ISO ELEC SPEC FUEL CONSUMPTN (ESFC)
EKW	%	BKW	KPA	G/BKW-HR	G/BKW-HR	L/HR	L/HR	G/EKW-HR	G/EKW-HR
3,200.0	100	3,368	2,546	196.1	192.4	777.2	762.4	206.4	202.5
2,880.0	90	3,032	2,292	194.8	191.0	694.6	681.4	205.0	201.1
2,560.0	80	2,695	2,037	194.4	190.7	616.3	604.5	204.6	200.7
2,400.0	75	2,526	1,910	194.7	191.0	578.7	567.7	205.0	201.1
2,240.0	70	2,358	1,782	195.7	192.0	542.8	532.5	206.0	202.1
1,920.0	60	2,021	1,528	198.9	195.1	473.0	464.0	209.4	205.4
1,600.0	50	1,684	1,273	204.0	200.1	404.3	396.6	214.8	210.7
1,280.0	40	1,347	1,018	209.3	205.3	331.8	325.5	220.3	216.1
960.0	30	1,011	764	219.2	215.0	260.6	255.6	230.7	226.3
800.0	25	842	637	228.0	223.7	225.9	221.6	240.1	235.5
640.0	20	674	509	243.1	238.5	192.7	189.0	255.9	251.1
320.0	10	337	255	324.7	318.5	128.7	126.2	341.7	335.2

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP
EKW	%	BKW	KPA	DEG C	DEG C	KPA	DEG C	KPA	DEG C
3,200.0	100	3,368	285.6	50.7	600.8	208.3	421.8	276	215.6
2,880.0	90	3,032	252.4	49.9	576.0	181.2	415.8	245	198.2
2,560.0	80	2,695	218.4	48.9	554.6	153.7	415.0	212	180.1
2,400.0	75	2,526	201.0	48.4	545.3	140.3	416.5	195	170.7
2,240.0	70	2,358	182.8	47.9	537.9	127.8	420.8	178	161.0
1,920.0	60	2,021	147.1	47.1	522.6	104.1	428.4	143	141.1
1,600.0	50	1,684	113.3	46.4	503.0	82.5	429.9	110	121.2
1,280.0	40	1,347	84.2	46.0	473.7	64.5	415.6	82	101.7
960.0	30	1,011	59.0	45.9	432.6	49.2	387.1	58	82.6
800.0	25	842	47.9	45.9	407.7	42.6	367.5	47	73.3
640.0	20	674	38.2	46.0	374.0	36.5	341.9	38	65.0
320.0	10	337	22.1	46.5	292.2	26.3	277.9	22	49.8

General Performance Data (Continued)

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	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	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)
EKW	%	BKW	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN

3,200.0	100	3,368	267.0	652.2	18,723.6	19,384.7	256.3	237.4
2,880.0	90	3,032	246.1	590.2	17,122.2	17,713.1	234.0	217.0
2,560.0	80	2,695	224.1	528.6	15,499.1	16,023.1	209.8	194.9
2,400.0	75	2,526	212.7	498.0	14,677.2	15,169.1	197.2	183.3
2,240.0	70	2,358	200.9	468.7	13,820.9	14,282.2	184.5	171.4
1,920.0	60	2,021	177.2	411.2	12,124.7	12,526.4	160.1	148.8
1,600.0	50	1,684	154.2	355.2	10,501.7	10,844.9	138.0	128.4
1,280.0	40	1,347	133.2	299.7	9,032.4	9,315.0	118.9	110.9
960.0	30	1,011	114.6	246.3	7,744.1	7,966.3	101.9	95.6
800.0	25	842	106.2	220.4	7,168.3	7,360.3	94.0	88.5
640.0	20	674	99.7	197.7	6,712.0	6,875.8	87.8	83.0
320.0	10	337	89.5	156.4	6,009.4	6,118.8	77.5	74.2

Heat Rejection Data

PUMP POWER IS INCLUDED IN HEAT REJECTION BALANCE, BUT IS NOT SHOWN.

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXH RECOVERY TO 177C	FROM OIL COOLER	FROM 2ND STAGE AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BKW	KW	KW	KW	KW	KW	KW	KW	KW	KW
3,200.0	100	3,368	1,613	184	2,762	1,393	418	373	3,368	7,851	8,363
2,880.0	90	3,032	1,413	177	2,490	1,240	374	306	3,032	7,016	7,474
2,560.0	80	2,695	1,229	171	2,232	1,117	332	249	2,695	6,225	6,631
2,400.0	75	2,526	1,144	169	2,109	1,064	311	224	2,526	5,846	6,228
2,240.0	70	2,358	1,066	167	1,996	1,021	292	202	2,358	5,483	5,841
1,920.0	60	2,021	918	164	1,772	924	254	164	2,021	4,778	5,090
1,600.0	50	1,684	779	161	1,544	804	218	133	1,684	4,084	4,350
1,280.0	40	1,347	643	154	1,273	650	179	107	1,347	3,352	3,571
960.0	30	1,011	515	146	1,001	486	140	86.9	1,011	2,632	2,804
800.0	25	842	455	141	870	406	122	79.3	842	2,282	2,431
640.0	20	674	399	137	748	326	104	73.5	674	1,947	2,074
320.0	10	337	298	126	516	175	69.2	66.8	337	1,300	1,384

Sound Data

SOUND DATA REPRESENTATIVE OF NOISE PRODUCED BY THE "ENGINE ONLY"

EXHAUST:SOUND POWER(1/3 Octave Frequencies)

GENSET POWER WITHOUT 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	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3,200.0	100	3,368	128.5	94.9	113.2	107.8	109.1	111.9	112.0	113.0	116.2	115.4	113.3
2,880.0	90	3,032	127.9	94.0	113.5	106.9	108.1	111.5	110.9	111.9	115.3	113.8	112.1
2,560.0	80	2,695	126.3	94.2	112.0	106.2	107.7	111.1	110.0	111.0	114.6	112.4	111.0
2,400.0	75	2,526	125.5	93.7	110.5	105.9	107.6	110.3	109.2	110.9	113.9	111.7	110.4
2,240.0	70	2,358	124.7	92.3	108.9	105.1	107.0	108.2	108.0	109.8	113.3	111.1	110.2
1,920.0	60	2,021	123.5	91.9	108.6	104.8	105.7	106.2	107.2	109.4	112.9	110.3	109.6
1,600.0	50	1,684	122.4	90.1	108.7	105.5	104.8	106.9	108.1	109.7	111.4	109.8	109.2
1,280.0	40	1,347	120.7	90.6	103.9	105.8	103.9	105.0	107.9	108.8	110.2	108.4	107.5
960.0	30	1,011	119.2	92.2	102.4	104.9	102.0	104.6	107.8	105.8	108.3	107.3	106.4
800.0	25	842	118.5	93.1	104.2	103.6	101.2	103.7	107.7	105.2	107.5	106.8	106.1
640.0	20	674	118.1	88.8	110.0	100.4	103.6	102.8	104.8	105.1	107.4	106.2	106.0
320.0	10	337	116.1	83.4	101.6	99.1	100.0	99.5	100.6	101.9	105.8	105.3	105.1

EXHAUST:SOUND POWER(1/3 Octave Frequencies)

GENSET POWER WITHOUT	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

PERFORMANCE DATA[EM0375]

January 23, 2023

FAN													
EKW	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3,200.0	100	3,368	118.7	120.7	120.0	119.9	118.3	115.1	111.1	108.0	105.4	103.4	111.8
2,880.0	90	3,032	117.5	118.9	119.1	119.0	117.0	114.0	109.9	106.9	104.4	102.8	118.4
2,560.0	80	2,695	115.9	117.4	117.7	117.9	116.0	112.9	108.9	105.8	103.5	101.7	111.9
2,400.0	75	2,526	115.1	116.7	116.8	117.3	115.7	112.5	108.5	105.2	103.2	101.5	107.9
2,240.0	70	2,358	114.1	115.9	116.1	116.6	115.2	112.1	108.1	104.7	102.9	102.0	103.7
1,920.0	60	2,021	112.5	114.5	114.5	114.9	114.1	111.0	107.0	103.6	102.5	102.9	96.4
1,600.0	50	1,684	111.1	113.2	112.7	112.9	112.7	109.5	105.7	102.5	102.2	101.5	94.4
1,280.0	40	1,347	109.6	111.1	110.6	110.9	110.9	107.6	104.1	101.2	102.6	97.7	93.0
960.0	30	1,011	108.0	109.7	108.6	109.1	108.8	105.8	102.3	100.4	100.0	95.6	91.5
800.0	25	842	107.2	109.0	107.5	108.2	107.8	104.9	101.5	100.3	98.3	95.1	91.0
640.0	20	674	106.5	108.1	106.4	107.5	107.1	104.2	100.8	100.2	96.7	94.8	90.7
320.0	10	337	105.8	107.0	105.5	105.7	105.5	102.0	101.8	96.4	95.8	94.2	89.5

MECHANICAL:SOUND POWER(1/3 Octave Frequencies)

GENSET POWER WITHOUT 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	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3,200.0	100	3,368	126.2	90.3	99.0	97.9	103.3	102.1	110.4	110.0	111.6	112.1	113.7
2,880.0	90	3,032	126.3	90.0	99.1	97.8	102.9	102.1	109.9	109.6	111.2	111.9	113.4
2,560.0	80	2,695	125.3	89.6	97.9	97.5	102.1	102.1	109.2	109.2	110.9	111.8	112.9
2,400.0	75	2,526	124.8	89.5	97.4	97.4	101.8	102.4	109.1	109.4	110.9	111.9	112.8
2,240.0	70	2,358	124.4	89.4	96.5	97.3	101.5	102.5	108.6	109.8	110.8	111.9	112.6
1,920.0	60	2,021	123.9	89.0	96.4	97.5	101.4	102.7	107.7	110.0	110.5	111.8	112.2
1,600.0	50	1,684	123.2	88.0	96.6	97.8	100.7	102.3	107.3	109.4	110.2	111.6	111.9
1,280.0	40	1,347	122.3	87.1	97.0	99.1	100.0	102.5	106.6	108.9	110.0	111.0	110.6
960.0	30	1,011	121.8	86.1	96.1	99.4	99.1	102.9	106.3	108.8	110.4	111.4	109.9
800.0	25	842	121.7	85.6	94.9	98.8	98.4	103.2	106.5	108.9	110.9	112.1	110.0
640.0	20	674	121.9	85.0	94.0	97.9	97.4	103.0	106.6	109.3	111.7	113.0	111.0
320.0	10	337	121.9	84.9	94.3	98.5	94.4	102.3	105.9	109.0	111.4	113.4	111.5

MECHANICAL:SOUND POWER(1/3 Octave Frequencies)

GENSET POWER WITHOUT 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	%	BKW	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
3,200.0	100	3,368	114.8	114.6	114.8	115.5	114.6	113.4	111.5	112.0	113.6	112.6	119.4
2,880.0	90	3,032	114.5	114.3	114.6	115.0	114.0	113.5	111.3	111.7	113.0	112.2	121.2
2,560.0	80	2,695	114.1	114.0	114.3	114.6	113.7	112.4	110.8	110.9	112.3	111.2	118.5
2,400.0	75	2,526	113.9	114.1	114.3	114.5	113.6	112.0	110.5	110.4	112.0	110.7	115.8
2,240.0	70	2,358	113.9	114.2	114.4	114.4	113.5	111.7	110.3	110.1	111.5	110.6	112.8
1,920.0	60	2,021	113.6	114.4	114.2	113.9	113.1	111.2	109.7	109.4	111.1	111.2	107.9
1,600.0	50	1,684	112.7	114.1	113.3	112.9	112.0	110.4	108.9	108.5	110.6	109.8	106.1
1,280.0	40	1,347	112.0	112.5	112.2	111.9	110.8	109.6	108.0	107.5	110.3	106.8	104.5
960.0	30	1,011	111.3	112.6	111.8	111.2	109.9	109.1	107.2	106.8	108.2	104.8	102.3
800.0	25	842	111.3	112.5	111.5	111.1	109.7	108.9	106.8	106.4	106.6	104.3	101.8
640.0	20	674	111.9	112.4	111.3	110.9	109.8	109.0	105.9	105.6	104.9	104.1	101.4
320.0	10	337	112.5	112.7	111.7	110.6	110.2	108.1	106.0	103.3	104.2	103.2	99.9

Emissions Data

DIESEL

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITHOUT FAN	EKW	3,200.0	2,400.0	1,600.0	800.0	320.0
PERCENT LOAD	%	100	75	50	25	10
ENGINE POWER	BKW	3,368	2,526	1,684	842	337
TOTAL NOX (AS NO2)	G/HR	35,314	28,696	23,669	11,406	5,132
TOTAL CO	G/HR	574	563	684	537	845

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TOTAL HC		G/HR	224	226	218	176	232
TOTAL CO2		KG/HR	2,091	1,552	1,079	604	343
PART MATTER		G/HR	67.0	90.1	174.3	119.1	98.5
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	4,168.6	4,552.0	5,380.6	4,603.9	3,593.8
TOTAL CO	(CORR 5% O2)	MG/NM3	61.8	81.8	142.6	198.6	541.2
TOTAL HC	(CORR 5% O2)	MG/NM3	21.0	28.4	39.4	56.5	128.5
PART MATTER	(CORR 5% O2)	MG/NM3	6.2	11.3	31.4	39.0	57.8
TOTAL NOX (AS NO2)	(CORR 15% O2)	MG/NM3	1,546.8	1,689.1	1,996.6	1,708.3	1,333.6
TOTAL CO	(CORR 15% O2)	MG/NM3	22.9	30.3	52.9	73.7	200.8
TOTAL HC	(CORR 15% O2)	MG/NM3	7.8	10.5	14.6	21.0	47.7
PART MATTER	(CORR 15% O2)	MG/NM3	2.3	4.2	11.6	14.5	21.4
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	2,030	2,217	2,621	2,243	1,751
TOTAL CO	(CORR 5% O2)	PPM	49	65	114	159	433
TOTAL HC	(CORR 5% O2)	PPM	39	53	74	105	240
TOTAL NOX (AS NO2)	(CORR 15% O2)	PPM	753	823	973	832	650
TOTAL CO	(CORR 15% O2)	PPM	18	24	42	59	161
TOTAL HC	(CORR 15% O2)	PPM	15	20	27	39	89
TOTAL NOX (AS NO2)		G/HP-HR	7.87	8.51	10.51	10.12	11.38
TOTAL CO		G/HP-HR	0.13	0.17	0.30	0.48	1.87
TOTAL HC		G/HP-HR	0.05	0.07	0.10	0.16	0.51
PART MATTER		G/HP-HR	0.01	0.03	0.08	0.11	0.22
TOTAL NOX (AS NO2)		G/KW-HR	10.71	11.57	14.29	13.76	15.47
TOTAL CO		G/KW-HR	0.17	0.23	0.41	0.65	2.55
TOTAL HC		G/KW-HR	0.07	0.09	0.13	0.21	0.70
PART MATTER		G/KW-HR	0.02	0.04	0.11	0.14	0.30
TOTAL NOX (AS NO2)		LB/HR	77.85	63.26	52.18	25.15	11.31
TOTAL CO		LB/HR	1.26	1.24	1.51	1.18	1.86
TOTAL HC		LB/HR	0.49	0.50	0.48	0.39	0.51
TOTAL CO2		LB/HR	4,610	3,422	2,379	1,331	756
PART MATTER		LB/HR	0.15	0.20	0.38	0.26	0.22
OXYGEN IN EXH		%	10.3	10.9	11.2	12.9	15.5
DRY SMOKE OPACITY		%	0.0	0.4	2.7	2.5	0.5
BOSCH SMOKE NUMBER			0.61	0.71	0.93	0.91	0.72

RATED SPEED POTENTIAL SITE VARIATION: 1500 RPM

GENSET POWER WITHOUT FAN		**EKW**	**3,200.0**	**2,400.0**	**1,600.0**	**800.0**	**320.0**
PERCENT LOAD		**%**	**100**	**75**	**50**	**25**	**10**
ENGINE POWER		BKW	3,368	2,526	1,684	842	337
TOTAL NOX (AS NO2)		G/HR	42,377	34,435	28,403	13,687	6,158
TOTAL CO		G/HR	1,032	1,013	1,231	967	1,520
TOTAL HC		G/HR	298	301	290	235	308
PART MATTER		G/HR	93.8	126.1	244.0	166.8	137.9
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	5,002.3	5,462.4	6,456.7	5,524.6	4,312.6
TOTAL CO	(CORR 5% O2)	MG/NM3	111.2	147.2	256.7	357.5	974.1
TOTAL HC	(CORR 5% O2)	MG/NM3	27.9	37.8	52.4	75.1	170.9
PART MATTER	(CORR 5% O2)	MG/NM3	8.7	15.8	43.9	54.6	80.9
TOTAL NOX (AS NO2)	(CORR 15% O2)	MG/NM3	1,856.2	2,026.9	2,395.9	2,050.0	1,600.3
TOTAL CO	(CORR 15% O2)	MG/NM3	41.3	54.6	95.2	132.7	361.5
TOTAL HC	(CORR 15% O2)	MG/NM3	10.4	14.0	19.4	27.9	63.4
PART MATTER	(CORR 15% O2)	MG/NM3	3.2	5.9	16.3	20.3	30.0
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	2,437	2,661	3,145	2,691	2,101
TOTAL CO	(CORR 5% O2)	PPM	89	118	205	286	779
TOTAL HC	(CORR 5% O2)	PPM	52	71	98	140	319
TOTAL NOX (AS NO2)	(CORR 15% O2)	PPM	904	987	1,167	999	779
TOTAL CO	(CORR 15% O2)	PPM	33	44	76	106	289
TOTAL HC	(CORR 15% O2)	PPM	19	26	36	52	118
TOTAL NOX (AS NO2)		G/HP-HR	9.45	10.21	12.61	12.14	13.65
TOTAL CO		G/HP-HR	0.23	0.30	0.55	0.86	3.37
TOTAL HC		G/HP-HR	0.07	0.09	0.13	0.21	0.68
PART MATTER		G/HP-HR	0.02	0.04	0.11	0.15	0.31
TOTAL NOX (AS NO2)		G/KW-HR	12.85	13.89	17.15	16.51	18.56
TOTAL CO		G/KW-HR	0.31	0.41	0.74	1.17	4.58
TOTAL HC		G/KW-HR	0.09	0.12	0.18	0.28	0.93
PART MATTER		G/KW-HR	0.03	0.05	0.15	0.20	0.42
TOTAL NOX (AS NO2)		LB/HR	93.42	75.91	62.62	30.18	13.58
TOTAL CO		LB/HR	2.28	2.23	2.71	2.13	3.35
TOTAL HC		LB/HR	0.66	0.66	0.64	0.52	0.68
PART MATTER		LB/HR	0.21	0.28	0.54	0.37	0.30

Regulatory Information