

Perf No: DM9661

Change Level: 03

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SALES MODEL:	C18	COMBUSTION:	DIRECT INJECTION
BRAND:	CAT	ENGINE SPEED (RPM):	2,100
MACHINE SALES MODEL:		PEAK TORQUE SPEED (RPM):	1,400
ENGINE POWER (BKW):	522.0	TORQUE RISE (%):	35
PEAK TORQUE (NM):	3,201.0	ASPIRATION:	TA
COMPRESSION RATIO:	16.3	AFTERCOOLER TYPE:	ATAAC
RATING LEVEL:	INDUSTRIAL C - INTERMITTENT	AFTERCOOLER CIRCUIT TYPE:	JW+OC, ATAAC
PUMP QUANTITY:	1	INLET MANIFOLD AIR TEMP (C):	49
FUEL TYPE:	DIESEL	JACKET WATER TEMP (C):	89
MANIFOLD TYPE:	DRY	TURBO CONFIGURATION:	PARALLEL
GOVERNOR TYPE:	ELEC	TURBO QUANTITY:	2
CAMSHAFT TYPE:	STANDARD	TURBOCHARGER MODEL:	S310S089-1.10
IGNITION TYPE:	CI	CERTIFICATION YEAR:	2006
INJECTOR TYPE:	EUI	PISTON SPD @ RATED ENG SPD (M/SEC):	12.8
REF EXH STACK DIAMETER (MM):	152		
MAX OPERATING ALTITUDE (M):	800		

INDUSTRY	SUB INDUSTRY	APPLICATION
INDUSTRIAL	GENERAL INDUSTRIAL	INDUSTRIAL
INDUSTRIAL	CONSTRUCTION	INDUSTRIAL
INDUSTRIAL	MATERIAL HANDLING	INDUSTRIAL
OIL AND GAS	LAND DRILLING	INDUSTRIAL
INDUSTRIAL	FIRE PUMP	INDUSTRIAL
INDUSTRIAL	MINING	INDUSTRIAL
INDUSTRIAL	AGRICULTURE	INDUSTRIAL
OIL AND GAS	WELL SERVICING	INDUSTRIAL
OIL AND GAS	LAND PRODUCTION	INDUSTRIAL
INDUSTRIAL	FORESTRY	INDUSTRIAL

General Performance Data [Top](#)

ENGINE SPEED	ENGINE POWER	ENGINE TORQUE	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)
RPM	BKW	NM	KPA	G/BKW-HR	G/BKW-HR	L/HR	L/HR
2,100	522	2,374	1,645	230.7	228.5	141.7	140.3
2,000	522	2,492	1,727	226.0	223.9	138.8	137.5
1,900	522	2,624	1,818	221.2	219.1	135.9	134.6
1,800	522	2,769	1,919	217.6	215.5	133.6	132.3
1,700	516	2,898	2,009	216.0	213.9	131.1	129.8
1,600	505	3,014	2,089	214.0	211.9	127.1	125.9
1,500	490	3,119	2,162	210.3	208.3	121.2	120.1
1,400	469	3,199	2,217	211.6	209.5	116.7	115.6
1,300	430	3,159	2,189	211.8	209.8	107.2	106.1
1,200	343	2,730	1,892	203.7	201.8	82.2	81.4
1,000	245	2,341	1,623	203.8	201.8	58.8	58.2
900	207	2,197	1,522	208.3	206.4	50.7	50.2
800	146	1,744	1,209	202.6	200.7	34.8	34.5
700	109	1,490	1,033	213.1	211.1	27.4	27.1
600	82.7	1,316	912	217.6	215.5	21.2	21.0

ENGINE SPEED	ENGINE POWER	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP
RPM	BKW	KPA	DEG C	DEG C	KPA	DEG C	KPA	DEG C
2,100	522	218.1	50.4	665.1	210.5	492.3	236	204.5
2,000	522	216.6	48.8	665.6	198.4	495.5	234	201.2
1,900	522	215.8	48.7	670.7	187.1	502.0	231	198.0
1,800	522	214.5	46.3	673.6	179.4	507.9	230	195.9
1,700	516	216.1	45.9	680.4	170.1	517.1	229	195.0
1,600	505	214.7	46.4	688.7	157.2	529.3	225	192.6
1,500	490	203.5	42.6	696.7	139.4	540.5	213	186.9
1,400	469	193.7	41.7	721.3	122.7	565.6	202	183.2
1,300	430	171.2	39.8	748.3	100.0	594.6	178	173.2
1,200	343	116.0	36.0	724.0	60.5	607.2	121	139.0
1,000	245	71.6	33.7	691.2	29.6	614.2	74	105.5
900	207	55.0	31.2	678.1	21.0	611.2	57	92.7
800	146	29.5	28.3	592.2	11.5	529.7	32	67.2
700	109	17.7	28.2	536.0	7.1	481.8	19	52.4
600	82.7	12.1	28.5	490.1	5.7	433.3	11	45.0

ENGINE SPEED	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)
RPM	BKW	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN
2,100	522	50.9	134.7	3,537.3	3,657.7	48.1	44.2
2,000	522	49.0	130.3	3,404.8	3,522.8	46.3	42.5
1,900	522	47.1	126.1	3,264.5	3,379.9	44.4	40.7
1,800	522	45.3	122.0	3,133.0	3,246.6	42.7	39.1
1,700	516	43.3	118.1	2,994.0	3,105.5	40.8	37.3
1,600	505	40.9	113.1	2,820.6	2,928.7	38.5	35.1
1,500	490	37.7	105.5	2,592.2	2,695.3	35.4	32.2
1,400	469	34.3	99.1	2,355.5	2,454.7	32.3	29.2
1,300	430	29.5	88.3	2,024.0	2,115.1	27.8	25.0
1,200	343	21.7	65.8	1,484.4	1,554.3	20.4	18.3
1,000	245	14.4	44.0	980.2	1,030.2	13.5	12.0
900	207	11.7	35.8	798.1	841.3	11.1	9.8
800	146	8.6	23.9	589.7	619.3	8.1	7.2
700	109	6.8	17.6	462.3	485.6	6.4	5.7
600	82.7	5.4	13.2	369.8	387.8	5.1	4.6

Heat Rejection Data [Top](#)

ENGINE SPEED	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
RPM	BKW	KW	KW	KW	KW	KW	KW	KW	KW	KW
2,100	522	160	87.3	603	341	76.2	152	522	1,431	1,525
2,000	522	153	83.8	590	332	74.7	145	522	1,402	1,493
1,900	522	152	82.2	570	326	73.1	136	522	1,372	1,462
1,800	522	154	80.6	551	319	71.9	131	522	1,350	1,438
1,700	516	155	76.1	539	314	70.5	125	516	1,324	1,411
1,600	505	150	66.3	532	308	68.4	115	505	1,284	1,368
1,500	490	148	62.1	500	293	65.2	105	490	1,225	1,304
1,400	469	145	63.8	485	287	62.8	93.2	469	1,179	1,256
1,300	430	127	64.6	456	267	57.7	75.4	430	1,083	1,153
1,200	343	117	62.7	320	203	44.2	42.7	343	830	885
1,000	245	106	41.2	221	138	31.6	19.7	245	594	633
900	207	76.7	38.6	210	112	27.3	13.7	207	513	546
800	146	66.8	31.6	124	66.0	18.7	6.4	146	352	375
700	109	55.0	30.3	97.0	44.4	14.7	3.1	109	277	295
600	82.7	47.6	31.9	63.9	29.6	11.4	1.7	82.7	214	228

DIESEL

RATED SPEED NOMINAL DATA: 2100 RPM

ENGINE POWER		BKW	522	392	261	130	52.2
PERCENT LOAD		%	100	75	50	25	10
TOTAL NOX (AS NO2)		G/HR	2,200	1,246	680	460	494
TOTAL CO		G/HR	279	203	196	237	285
TOTAL HC		G/HR	32	37	38	37	35
TOTAL CO2		KG/HR	380	308	229	130	62
PART MATTER		G/HR	64.0	56.3	51.6	41.6	32.9
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	1,321.0	911.4	667.2	1,124.7	1,744.1
TOTAL CO	(CORR 5% O2)	MG/NM3	167.6	149.1	192.5	593.9	1,011.1
TOTAL HC	(CORR 5% O2)	MG/NM3	16.5	23.8	32.7	70.7	107.9
PART MATTER	(CORR 5% O2)	MG/NM3	32.4	35.5	44.4	76.1	106.4
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	643	444	325	548	850
TOTAL CO	(CORR 5% O2)	PPM	134	119	154	475	809
TOTAL HC	(CORR 5% O2)	PPM	31	44	61	132	201
TOTAL NOX (AS NO2)		G/HP-HR	3.17	2.39	1.95	2.64	7.08
TOTAL CO		G/HP-HR	0.40	0.39	0.56	1.36	4.09
TOTAL HC		G/HP-HR	0.05	0.07	0.11	0.21	0.50
PART MATTER		G/HP-HR	0.09	0.11	0.15	0.24	0.47
TOTAL NOX (AS NO2)		LB/HR	4.85	2.75	1.50	1.01	1.09
TOTAL CO		LB/HR	0.61	0.45	0.43	0.52	0.63
TOTAL HC		LB/HR	0.07	0.08	0.08	0.08	0.08
TOTAL CO2		LB/HR	837	680	504	287	136
PART MATTER		LB/HR	0.14	0.12	0.11	0.09	0.07
OXYGEN IN EXH		%	10.5	11.8	13.2	15.1	16.6
DRY SMOKE OPACITY		%	1.4	1.7	1.8	2.0	2.3
BOSCH SMOKE NUMBER			0.96	1.14	1.18	1.32	1.45

RATED SPEED POTENTIAL SITE VARIATION: 2100 RPM

ENGINE POWER		BKW	522	392	261	130	52.2
PERCENT LOAD		%	100	75	50	25	10
TOTAL NOX (AS NO2)		G/HR	2,376	1,346	734	497	533
TOTAL CO		G/HR	521	380	366	443	534
TOTAL HC		G/HR	60	71	72	70	67
PART MATTER		G/HR	124.7	109.9	100.7	81.1	64.2
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	1,426.7	984.3	720.5	1,214.7	1,883.6
TOTAL CO	(CORR 5% O2)	MG/NM3	313.5	278.9	360.0	1,110.5	1,890.7
TOTAL HC	(CORR 5% O2)	MG/NM3	31.1	45.0	61.7	133.6	204.0
PART MATTER	(CORR 5% O2)	MG/NM3	63.2	69.2	86.5	148.5	207.5
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	695	479	351	592	918
TOTAL CO	(CORR 5% O2)	PPM	251	223	288	888	1,513
TOTAL HC	(CORR 5% O2)	PPM	58	84	115	249	381
TOTAL NOX (AS NO2)		G/HP-HR	3.42	2.58	2.11	2.85	7.64
TOTAL CO		G/HP-HR	0.75	0.73	1.05	2.55	7.65
TOTAL HC		G/HP-HR	0.09	0.14	0.21	0.40	0.95
PART MATTER		G/HP-HR	0.18	0.21	0.29	0.47	0.92
TOTAL NOX (AS NO2)		LB/HR	5.24	2.97	1.62	1.09	1.18
TOTAL CO		LB/HR	1.15	0.84	0.81	0.98	1.18
TOTAL HC		LB/HR	0.13	0.16	0.16	0.15	0.15
PART MATTER		LB/HR	0.27	0.24	0.22	0.18	0.14

Regulatory Information [Top](#)

CHINA STAGE II		2010 - 2015	
THIS ENGINE HAS BEEN TESTED IN ACCORDANCE WITH THE PROVISIONS OF THE PEOPLE'S REPUBLIC OF CHINA NATIONAL STANDARD #GB 20891-2007, AND COMPLIES WITH THE STATED LIMITS OF CO, HC, NOX, AND PM FOR STAGE II			
Locality	Agency	Regulation	Tier/Stage
CHINA	CHINA	NON-ROAD	STAGE II
Max Limits - G/BKW - HR			
CO: 3.5 NOx: 6.0 HC: 1.0 PM: 0.20			

EPA TIER 3		2005 - 2010	
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 89 SUBPART D AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.			
Locality	Agency	Regulation	Tier/Stage
U.S. (INCL CALIF)	EPA	NON-ROAD	TIER 3
Max Limits - G/BKW - HR			
CO: 3.5 NOx + HC: 4.0 PM: 0.20			

EU STAGE IIIA**2006 - 2010**

GASEOUS EMISSION DATA MEASUREMENTS ARE CONSISTENT WITH THOSE DESCRIBED IN EU 97/68/EC, ECE REGULATION NO. 96 AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. GASEOUS EMISSION VALUES ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.

Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR
EUROPE	EU	NON-ROAD	STAGE IIIA	CO: 3.5 NOx + HC: 4.0 PM: 0.20

IBAMA MAR-1**2015 - ----**

GASEOUS EMISSION DATA MEASUREMENTS ARE CONSISTENT WITH THOSE DESCRIBED IN CONAMA RESOLUTION NO. 433/2011 AND ISO 8178-1 FOR MEASURING HC, CO, PM, AND NOX. GASEOUS EMISSION VALUES ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.

Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR
BRAZIL	IBAMA	NON-ROAD	MAR-1	CO: 3.5 NOx + HC: 4.0 PM: 0.2

IMO II**2011 - ----**

GASEOUS EMISSIONS DATA MEASUREMENTS ARE CONSISTENT WITH THOSE DESCRIBED IN REGULATION 13 OF REVISED ANNEX VI OF MARPOL 73/78 AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THIS ENGINE CONFORMS TO INTERNATIONAL MARINE ORGANIZATION'S (IMO) MARINE COMPRESSION-IGNITION EMISSION REGULATIONS.

Altitude Derate Data [Top](#)**STANDARD****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	522	522	522	522	522	522	522	522	522	522	522	522	516	522
250	522	522	522	522	522	522	522	522	522	522	516	508	500	522
500	522	522	522	522	522	522	522	522	516	508	500	492	485	522
750	522	522	522	522	522	522	517	508	500	492	485	477	470	522
1,000	522	522	522	522	518	509	501	492	485	477	470	462	456	519
1,250	522	522	519	510	501	493	485	477	469	462	455	448	441	505
1,500	521	512	503	494	486	478	470	462	455	448	441	434	427	492
1,750	505	496	487	478	470	462	455	447	440	433	427	420	414	479
2,000	489	480	471	463	455	448	440	433	426	419	413	407	401	467
2,250	473	464	456	448	441	433	426	419	412	406	400	394	388	454
2,500	458	449	441	434	426	419	412	406	399	393	387	381	375	442
2,750	443	435	427	420	412	406	399	392	386	380	374	368	363	430
3,000	428	420	413	406	399	392	386	379	373	368	362	356	351	418
3,250	414	406	399	392	386	379	373	367	361	355	350	344	339	407
3,500	400	393	386	379	373	366	360	355	349	343	338	333	328	395
3,750	387	380	373	366	360	354	348	343	337	332	327	322	317	384
4,000	373	367	360	354	348	342	336	331	326	321	316	311	306	374
4,250	361	354	348	342	336	330	325	320	315	310	305	300	296	363
4,500	348	342	336	330	324	319	314	309	304	299	294	290	285	353

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Test Spec	Setting	Engine Arrangement	Engineering Model	Engineering Model Version	Start Effective Serial Number	End Effective Serial Number
OK7487	NAP	2410021	E709	-	WJH00001	
OK9419	PP5949	2410021	E709	-	WJH00001	
OK9811	PP6868	3449188	E709	-	WJH00001	
OK9811	PP6868	3449188	E709	-	WRH00001	
OK9811	PP6868	3449189	E709	-	WJH00001	
OK9811	PP6868	3449189	E709	-	WRH00001	
OK9419	PP5949	3591816	E709	-	WJH00001	
OK9419	PP5949	3591816	E709	-	WRH00001	
OK9811	PP6868	3591818	E709	-	WJH00001	
OK9811	PP6868	3591893	E709	-	WJH00001	

0K9419	PP5949	3665517	E709	-	WJH00001
0K9419	PP5949	3665518	E709	-	WJH00001
0K9419	PP5949	3665520	E709	-	WJH00001
0K9419	PP5949	3665521	E709	-	WJH00001
4577272	PP7748	5181549	EE384	-	PK800001
5644164	NAP	5744564	E709	-	WRH00001
5644164	NAP	5744565	E709	-	WRH00001

Performance Parameter Reference [Top](#)

Parameters Reference: DM9600 - 14

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.

On 3500 and C175 engines, at speeds below Peak Torque these values are provided for reference only, and may not meet the tolerance listed.

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

C280/3600 HEAT REJECTION TOLERANCE FACTORS: Heat rejection +/- 10% Heat rejection to Atmosphere +/- 50% Heat rejection to Lube Oil +/- 20% Heat rejection to Aftercooler +/- 5%

TEST CELL TRANSDUCER TOLERANCE FACTORS: Torque +/- 0.5% Speed +/- 0.2% Fuel flow +/- 1.0% Temperature +/- 2.0 C degrees Intake manifold pressure +/- 0.1 kPa OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE AIR AND FUEL CONDITIONS.

REFERENCE ATMOSPHERIC INLET AIR FOR 3500 ENGINES AND SMALLER SAE J1228 AUG2002 for marine engines, and J1995 JAN2014 for other engines, reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity at the stated aftercooler water temp, or inlet manifold temp. **FOR 3600 ENGINES** Engine rating obtained and presented in accordance with ISO 3046/1 and SAE J1995 JANJAN2014 reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity and 150M altitude at the stated aftercooler water temperature.

MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE Location for air temperature measurement air cleaner inlet at stabilized operating conditions.

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

REFERENCE FUEL DIESEL Reference fuel is #2 distillate diesel with a 35API gravity; A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at 15 deg C (59 deg F), where the density is 850 G/Liter (7.0936 Lbs/Gal). **GAS** Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU Ft) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.

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

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

ALTITUDE CAPABILITY Altitude capability is the maximum altitude above sea level at standard temperature and standard pressure at which the engine could develop full rated output power on the current performance data set. Standard temperature values versus altitude could be seen on TM2001.

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

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

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

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

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

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

WET & DRY EXHAUST/EMISSIONS DESCRIPTION: Wet - Total exhaust flow or concentration of total exhaust flow Dry
- Total exhaust flow minus water vapor or concentration of exhaust flow with water vapor excluded

EMISSIONS DEFINITIONS: Emissions : DM1176

EMISSION CYCLE DEFINITIONS

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

HEAT REJECTION DEFINITIONS: Diesel Circuit Type and HHV Balance : DM9500

HIGH DISPLACEMENT (HD) DEFINITIONS: 3500: EM1500

RATING DEFINITIONS: Agriculture : TM6008

Fire Pump : TM6009

Generator Set : TM6035

Generator (Gas) : TM6041

Industrial Diesel : TM6010

Industrial (Gas) : TM6040

Irrigation : TM5749

Locomotive : TM6037

Marine Auxiliary : TM6036

Marine Prop (Except 3600) : TM5747

Marine Prop (3600 only) : TM5748

MSHA : TM6042

Oil Field (Petroleum) : TM6011

Off-Highway Truck : TM6039

On-Highway Truck : TM6038

SOUND DEFINITIONS: Sound Power : DM8702

Sound Pressure : TM7080

Date Released : 10/27/21