

	<p align="center">CATERPILLAR INC.</p>	<p align="center">EXECUTIVE ORDER U-R-001-341 New Off-Road Compression-Ignition Engines</p>
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Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2008	8CPXL32.0ESX	32.0	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module			Loader, Dozer, Pump and Industrial Equipment	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):


RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
KW > 560	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	20	15	50
		CERT	--	--	5.4	0.9	0.06	7	2	11

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 7th day of March 2008.


 Annette Hebert, Chief
 Mobile Source Operations Division

Engine Model Summary Template

ATTACHMENT 1 of 2

U-R-001-0341

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)/@peak torque	9.Emission Control Device Per SAE J1930
8CPXL32.0ESX	1	C32	1505@2100	376	530.8	4422@1400	418	393.4	EM, DI, TC, AC
8CPXL32.0ESX	2	C32	1500@2100	376	530.8	4422@1400	418	393.4	EM, DI, TC
8CPXL32.0ESX	3	C32	1016@1750	294	345.9	3635@1300	349	305.4	EM, DI, TC
8CPXL32.0ESX	4	C32	970@1750	277	325.8	3461@1300	335	292.9	EM, DI, TC
8CPXL32.0ESX	5	C32	951@1800	266	322.7	3205@1400	298	280.3	EM, DI, TC
8CPXL32.0ESX	6	C32	951@2100	238	336.9	3205@1400	298	280.3	EM, DI, TC
8CPXL32.0ESX	7	C32	1124@1800	319	386.1	3792@1400	365	344.1	EM, DI, TC
8CPXL32.0ESX	8	C32	1124@2100	279	393.6	3792@1400	365	344.1	EM, DI, TC
8CPXL32.0ESX	9	C32	1200@1800	336	407.3	4045@1400	390	367.2	EM, DI, TC
8CPXL32.0ESX	10	C32	1200@2100	301	425.9	4045@1400	390	367.2	EM, DI, TC
8CPXL32.0ESX	11 Cert Engine	C32	1350@1800	384	464.7	4552@1400	438	412.4	EM, DI, TC
8CPXL32.0ESX	12	C32	1350@2100	340	480.6	4552@1400	438	412.4	EM, DI, TC
8CPXL32.0ESX	13	C32	1016@1750	294	345.9	3635@1300	349	305.4	EM, DI, TC
8CPXL32.0ESX	14	C32	923@1800	257	311.4	3554@1300	345	302	EM, DI, TC
8CPXL32.0ESX	15	C32	800@2100	207	292.9	2447@1350	239	217.1	EM, DI, TC
8CPXL32.0ESX	16	C32	1000@2100	262	370	3047@1400	310	292	EM, DI, TC
8CPXL32.0ESX	17	C32	800@2100	209	296	2447@1350	249	227	EM, DI, TC
8CPXL32.0ESX	18	C32	861@2100	216	306	2607@1400	264	249	EM, DI, TC
8CPXL32.0ESX	19	C32	920@2100	244	345	3023@1400	312	294	EM, DI, TC
8CPXL32.0ESX	20	C32	1110@2100	296	419	3743@1400	386	364	EM, DI, TC
8CPXL32.0ESX	21	C32	1225@2100	327	462	4129@1400	425	400	EM, DI, TC
8CPXL32.0ESX	22	C32	950@1600	295	317	3627@1200	350	282	EM, DI, TC
8CPXL32.0ESX	23	C32	1110@2100	296	419	3743@1400	386	364	EM, DI, TC
8CPXL32.0ESX	24	C32	800@2100	209	295	2473@1350	249	227	EM, DI, TC
8CPXL32.0ESX	25	C32	920@2100	239	338	3023@1400	312	294	EM, DI, TC
8CPXL32.0ESX	26	C32	1225@2100	327	462	4129@1400	425	400	EM, DI, TC
8CPXL32.0ESX	27	C32	860@2100	221	313	2599@1400	263	248	EM, DI, TC
8CPXL32.0ESX	28	C32	1000@2100	262	370	3047@1400	310	292	EM, DI, TC

Engine Model Summary Template

ATTACHMENT 2 of 2

U-R-001-0341

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: mm/stroke @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)/@peak torque	9.Emission Control Device Per SAE J1930
8CPXL32.0ESX	29	C32	1050@1900	280	359	3686@1350	360	327	ECM, EM, DI, TC, cAC
8CPXL32.0ESX	30	C32	943@1750	272	320	3585@1350	355	322	ECM, EM, DI, TC, cAC

Engine Model Summary Template

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (bs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (bs/hr)@peak torque	9.Emission Control Device Per SAE J1930
8CPXL32.0ESX	31	C32	970@1750	281	331	3461@1300	323	283	EM, DI, TC,
8CPXL32.0ESX	32	C32	1016@1750	296	349	3635@1300	336	294	EM, DI, TC,

Engine Model Summary Template

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9 Emission Control Device Per SAE J1930
8CPXL27.0ESX	1	C27	1150@2100	282	298.9	3876@1400	379	357.4	EM, DI, TC,
8CPXL27.0ESX	2 Cert Engine	C27	1151@2100	277	391.7	3876@1400	375	353	EM, DI, TC,
8CPXL27.0ESX	3	C27	1150@1800	325	393.9	3876@1400	379	357.4	EM, DI, TC,
8CPXL27.0ESX	4	C27	950@2100	233	328.7	3202@1400	317	298.2	EM, DI, TC,
8CPXL27.0ESX	5	C27	950@1800	266	321.8	3202@1400	317	298.2	EM, DI, TC,
8CPXL27.0ESX	6	C27	1050@2100	261	368.3	3539@1400	343	323	EM, DI, TC,
8CPXL27.0ESX	7	C27	1050@1800	298	360.6	3539@1400	343	323	EM, DI, TC,
8CPXL27.0ESX	8	C27	778@2000	195	262.7	2367@1300	230	201.6	EM, DI, TC,
8CPXL27.0ESX	9	C27	787@2000	198	266	2437@1600	228	245.6	EM, DI, TC,
8CPXL27.0ESX	10	C27	789@1800	215	260.5	2568@1200	253	204.2	EM, DI, TC,
8CPXL27.0ESX	11	C27	800@2100	200	282.3	2697@1400	265	249.9	EM, DI, TC,
8CPXL27.0ESX	12	C27	800@1800	223	270.6	2697@1400	265	249.9	EM, DI, TC,
8CPXL27.0ESX	13	C27	875@2100	217	307.1	2950@1400	288	270.8	EM, DI, TC,
8CPXL27.0ESX	14	C27	875@1800	242	293	2950@1400	288	270.8	EM, DI, TC,
8CPXL27.0ESX	15	C27	776@2000	204	275	2378@2000	237	207	EM, DI, TC,
8CPXL27.0ESX	16	C27	805@2000	210	282.3	2720@1300	271	236.5	EM, DI, TC,
8CPXL27.0ESX	17	C27	950@1800	272	329	3206@1400	303	285	EM, DI, TC,
8CPXL27.0ESX	18	C27	950@2100	245	346	3206@1400	303	285	EM, DI, TC,