

<b>California Environmental Protection Agency</b> <b>Air Resources Board</b>	<b>CATERPILLAR INC.</b>	<b>EXECUTIVE ORDER U-R-001-0481</b> New Off-Road Compression-Ignition Engines
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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 engines and emission control systems 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)
2014	ECPXL15.2HTF	15.2	Diesel	8000
<b>SPECIAL FEATURES &amp; EMISSION CONTROL SYSTEMS</b>			<b>TYPICAL EQUIPMENT APPLICATION</b>	
Electronic Direct Injection, Turbocharger, Charge Air Cooler, Oxidation Catalyst, Engine Control Module, Exhaust Gas Recirculation, Periodic Trap Oxidizer, Selective Catalytic Reduction-Urea, Ammonia Oxidation Catalyst			Tractor, Off-road Truck, Dozer, Industrial Equipment	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), 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):

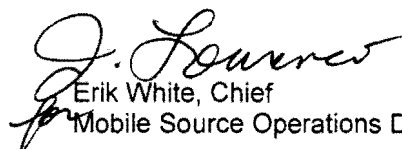
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Final	STD	0.19	0.40	N/A	3.5	0.02	N/A	N/A	N/A
		CERT	0.06	0.11	--	0.05	0.01	--	--	--

**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 19<sup>th</sup> day of August 2013.

  
Erik White, Chief  
Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model Summary Template

U-R-001-0481

1/7/2014 R/C

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
ECPXL15.2HTF	Cert Test 1	C15	578@2100	302	214	1955@1400	372	175	DFI,TC,ECM,CAC,EGR,PTOX, OC,SCR-U,AMOX
ECPXL15.2HTF	1	C15	485@1900	276	176	1891@1200	368	149	DFI,TC,ECM,CAC,EGR,PTOX, OC,SCR-U,AMOX
ECPXL15.2HTF	2	C15	473@2100	247	174	1600@1400	311	146	DFI,TC,ECM,CAC,EGR,PTOX, OC,SCR-U,AMOX
ECPXL15.2HTF	3	C15	473@2100	247	174	1600@1400	311	146	DFI,TC,ECM,CAC,EGR,PTOX, OC,SCR-U,AMOX
ECPXL15.2HTF	4	C15	539@2100	282	199	1820@1400	352	166	DFI,TC,ECM,CAC,EGR,PTOX, OC,SCR-U,AMOX
ECPXL15.2HTF	5	C15	578@2100	310	219	1955@1400	380	179	DFI,TC,ECM,CAC,EGR,PTOX, OC,SCR-U,AMOX
ECPXL15.2HTF	6	C15	485@1700	292	167	1698@1350	327	149	DFI,TC,ECM,CAC,EGR,PTOX, OC,SCR-U,AMOX
ECPXL15.2HTF	7	C15	314@2000	179	120	1438@1300	279	122	DFI,TC,ECM,CAC,EGR,PTOX, OC,SCR-U,AMOX
ECPXL15.2HTF	8	C15	426@1800	245	148	1568@1300	304	133	DFI,TC,ECM,CAC,EGR,PTOX, OC,SCR-U,AMOX

SUPERSEDED