

CATERPILLAR INC.

EXECUTIVE ORDER U-R-001-0665

New Off-Road Compression-Ignition Engines Page 1 of 1

Pursuant to the authority vested in California 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-19-095:

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)					
2023	PCPXL15.2HTF	15.2	Diesel	8000					
SPECIAL	FEATURES & EMISSION C	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION						
Cooler, I Module,	Direct Injection, Turbo Diesel Oxidation Cataly Exhaust Gas Recircula er, Selective Catalytic I Ammonia Oxidation (st, Engine Control tion, Periodic Trap Reduction-Urea,	Loader, Tractor, Dozer, Excavator, Off-road Truck, Commercial Equipment						

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, 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	EMISSION			I	EXHAUST (g/kw-l	OPACITY (%)				
CLASS	STANDARD CATEGORY		NMHC NOx		NMHC+NOx	СО	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
		FEL					0.01			
		CERT	0.06	0.11		0.1	0.01			

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

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 on this <u>13th</u> day of September 2022.

Robin U. Lang, Chief

Emissions Certification and Compliance Division

Jolin U. Lang

Attachment: Engine Models EO #: U-R-001-0665 Family: PCPXL15.2HTF Attachment Last Revised: 11/17/2022

					Displacement -		Peak Power -	Peak Power -	Peak Power -	Peak Power - Fu	el	Peak Torque -	Peak Torque -	Peak Torque -	Peak Torque -				
Model	Code	Trim	Config	Displacement	Units	Peak Power	Units	Speed (rpm)	Fueling	Units	Peak Torque	Units	Speed (rpm)	Fuel	Fuel Units	OBD	GHG	Special	Notes
C15	Cert Test 1	N/A	16	15.19	Liters	578	horsepower	2100	214	lb/hr	1955	lb-ft	1400	175	lb/hr	N/A	N/A	N/A	N/A
C15	1	N/A	16	15.19	Liters	485	horsepower	1900	176.1	lb/hr	1891	lb-ft	1200	148.7	lb/hr	N/A	N/A	N/A	N/A
C15	2	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
C15	2A	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
C15	3	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
C15	3A	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
C15	4	N/A	16	15.19	Liters	539	horsepower	2100	199.3	lb/hr	1820	lb-ft	1400	165.8	lb/hr	N/A	N/A	N/A	N/A
C15	4A	N/A	16	15.19	Liters	539	horsepower	2100	199.3	lb/hr	1820	lb-ft	1400	165.8	lb/hr	N/A	N/A	N/A	N/A
C15	5	N/A	16	15.19	Liters	578	horsepower	2100	219.2	lb/hr	1955	lb-ft	1400	179	lb/hr	N/A	N/A	N/A	N/A
C15	5A	N/A	16	15.19	Liters	578	horsepower	2100	219.2	lb/hr	1955	lb-ft	1400	179	lb/hr	N/A	N/A	N/A	N/A
C15	6	N/A	16	15.19	Liters	485	horsepower	1700	167.2	lb/hr	1698	lb-ft	1350	148.7	lb/hr	N/A	N/A	N/A	N/A
C15	7	N/A	16	15.19	Liters	314	horsepower	2000	120.4	lb/hr	1438	lb-ft	1300	122	lb/hr	N/A	N/A	N/A	N/A
C15	8	N/A	16	15.19	Liters	426	horsepower	1800	148.4	lb/hr	1568	lb-ft	1300	133	lb/hr	N/A	N/A	N/A	N/A
C15	9	N/A	16	15.19	Liters	409	horsepower	2000	148.1	lb/hr	1693	lb-ft	1200	134.5	lb/hr	N/A	N/A	N/A	N/A
C15	10	N/A	16	15.19	Liters	539	horsepower	2100	199.3	lb/hr	1820	lb-ft	1400	165.7	lb/hr	N/A	N/A	N/A	N/A
C15	11	N/A	16	15.19	Liters	314	horsepower	2000	120.4	lb/hr	1438	lb-ft	1300	122	lb/hr	N/A	N/A	N/A	N/A
2506F	12	N/A	16	15.19	Liters	539	horsepower	2100	199.3	lb/hr	1820	lb-ft	1400	165.8	lb/hr	N/A	N/A	N/A	N/A
2506J	12A	N/A	16	15.19	Liters	539	horsepower	2100	199.3	lb/hr	1820	lb-ft	1400	165.8	lb/hr	N/A	N/A	N/A	N/A
2506F	13	N/A	16	15.19	Liters	578	horsepower	2100	219.2	lb/hr	1955	lb-ft	1400	179	lb/hr	N/A	N/A	N/A	N/A
2506J	13A	N/A	16	15.19	Liters	578	horsepower	2100	219.2	lb/hr	1955	lb-ft	1400	179	lb/hr	N/A	N/A	N/A	N/A
2506F	14	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
2506J	14A	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
2506F	15	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
2506J	15A	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
C15	16	N/A	16	15.19	Liters	416	horsepower	2000	153.4	lb/hr	1752	lb-ft	1200	140.6	lb/hr	N/A	N/A	N/A	N/A
C15	17	N/A	16	15.19	Liters	378	horsepower	2050	139.7	lb/hr	1578	lb-ft	1200	121.3	lb/hr	N/A	N/A	N/A	N/A
C15	18	N/A	16	15.19	Liters	409	horsepower	2000	148.1	lb/hr	1693	lb-ft	1200	134.5	lb/hr	N/A	N/A	N/A	N/A
C15	19	N/A	16	15.19	Liters	485	horsepower	1700	167.2	lb/hr	1698	lb-ft	1350	148.7	lb/hr	N/A	N/A	N/A	N/A
C15	20	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
C15	20A	N/A	16	15.19	Liters	473	horsepower	2100	174.4	lb/hr	1600	lb-ft	1400	146.4	lb/hr	N/A	N/A	N/A	N/A
C15	21	N/A	16	15.19	Liters	539	horsepower	2100	199.3	lb/hr	1820	lb-ft	1400	165.8	lb/hr	N/A	N/A	N/A	N/A
C15	22	N/A	16	15.19	Liters	378	horsepower	2050	139.7	lb/hr	1578	lb-ft	1200	125.5	lb/hr	N/A	N/A	New Model Added	N/A
C15	23	N/A	16	15.19	Liters	539	horsepower	2100	199.3	lb/hr	1820	lb-ft	1400	165.8	lb/hr	N/A	N/A	New Model Added	N/A