

## CATERPILLAR INC.

## **EXECUTIVE ORDER U-R-001-0655**

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)				
2022	NCPXL12.5HTF	12.5	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, Agricultural Comb Excavator, Motor Grader, Commerc					

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	0.05	0.26		0.02	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 14th day of December 2021.

Allen Lyons, Chief

Emissions Certification and Compliance Division

Attachment: Engine Models EO #: U-R-001-0655 Family: NCPXL12.5HTF Attachment Last Revised: 10/24/2022

					Displacement -		Peak Power -	Peak Power -	Peak Power -	Peak Power -		Peak Torque -	Peak Torque -	Peak Torque -	Peak Torque -				
Model	Code	Trim	Config	Displacement	Units	Peak Power	Units	Speed (rpm)	Fueling	Fuel Units	Peak Torque	Units	Speed (rpm)	Fuel	Fuel Units	OBD	GHG	Special	Notes
C13	Cert Test 1	NA	16	12.5	Liters	519	horsepower	2100	186	lb/hr	1752	lb-ft	1400	159	lb/hr	N/A	N/A	N/A	N/A
C13	Cert Test 2	NA	16	12.5	Liters	503	horsepower	1500	173.9	lb/hr	NA	lb-ft	NA	NA	lb/hr	N/A	N/A	N/A	N/A
C13	1	NA	16	12.5	Liters	527	horsepower	1870	181.9	lb/hr	1750	lb-ft	1400	158	lb/hr	N/A	N/A	N/A	N/A
C13	2	NA	16	12.5	Liters	479	horsepower	1870	162.5	lb/hr	1635	lb-ft	1400	148	lb/hr	N/A	N/A	N/A	N/A
C13	3	NA	16	12.5	Liters	421	horsepower	1870	146	lb/hr	1434	lb-ft	1400	130.5	lb/hr	N/A	N/A	N/A	N/A
C13	4	NA	16	12.5	Liters	375	horsepower	2000	132.5	lb/hr	1575	lb-ft	1300	132.2	lb/hr	N/A	N/A	N/A	N/A
C13	5	NA	16	12.5	Liters	384	horsepower	2100	136.1	lb/hr	1297	lb-ft	1400	115.7	lb/hr	N/A	N/A	N/A	N/A
C13	6	NA	16	12.5	Liters	414	horsepower	2100	146.5	lb/hr	1398	lb-ft	1400	126	lb/hr	N/A	N/A	N/A	N/A
C13	7	NA	16	12.5	Liters	439	horsepower	2100	154.9	lb/hr	1482	lb-ft	1400	132.3	lb/hr	N/A	N/A	N/A	N/A
C13	7A	NA	16	12.5	Liters	439	horsepower	2100	154.9	lb/hr	1482	lb-ft	1400	132.3	lb/hr	N/A	N/A	N/A	N/A
C13	8	NA	16	12.5	Liters	473	horsepower	2100	168.9	lb/hr	1601	lb-ft	1400	145.3	lb/hr	N/A	N/A	N/A	N/A
C13	9	NA	16	12.5	Liters	519	horsepower	2100	185.6	lb/hr	1752	lb-ft	1400	159.3	lb/hr	N/A	N/A	N/A	N/A
C13	10	NA	16	12.5	Liters	355	horsepower	2050	127.2	lb/hr	1564	lb-ft	1200	121.9	lb/hr	N/A	N/A	N/A	N/A
C13	11	NA	16	12.5	Liters	425	horsepower	1800	148.4	lb/hr	1338	lb-ft	1650	143.7	lb/hr	N/A	N/A	N/A	N/A
C13	11A	NA	16	12.5	Liters	425	horsepower	1800	148.4	lb/hr	1338	lb-ft	1650	143.7	lb/hr	N/A	N/A	N/A	N/A
C13	12	NA	16	12.5	Liters	416	horsepower	2100	152.9	lb/hr	1612	lb-ft	1200	125.2	lb/hr	N/A	N/A	N/A	N/A
C13	12A	NA	16	12.5	Liters	416	horsepower	2100	152.9	lb/hr	1612	lb-ft	1200	125.2	lb/hr	N/A	N/A	N/A	N/A
C13	12B	NA	16	12.5	Liters	416	horsepower	2100	152.9	lb/hr	1612	lb-ft	1200	125.2	lb/hr	N/A	N/A	N/A	N/A
C13	12C	NA	16	12.5	Liters	416	horsepower	2100	152.9	lb/hr	1612	lb-ft	1200	125.2	lb/hr	N/A	N/A	New model added	
C13	13	NA	16	12.5	Liters	429	horsepower	2100	162.2	lb/hr	1612	lb-ft	1200	126.3	lb/hr	N/A	N/A	N/A	N/A
C13	13A	NA	16	12.5	Liters	429	horsepower	2100	162.2	lb/hr	1612	lb-ft	1200	126.3	lb/hr	N/A	N/A	N/A	N/A
C13	13B	NA	16	12.5	Liters	429	horsepower	2100	162.2	lb/hr	1612	lb-ft	1200	126.3	lb/hr	N/A	N/A	N/A	N/A
C13	14	NA	16	12.5	Liters	527	horsepower	1870	181.9	lb/hr	1746	lb-ft	1400	157.6	lb/hr	N/A	N/A	N/A	N/A
C13	15	NA	16	12.5	Liters	479	horsepower	1870	162.5	lb/hr	1635	lb-ft	1400	148	lb/hr	N/A	N/A	N/A	N/A
C13	16	NA	16	12.5	Liters	421	horsepower	1870	146	lb/hr	1434	lb-ft	1400	130.5	lb/hr	N/A	N/A	N/A	N/A
C13	17	NA	16	12.5	Liters	363	horsepower	2000	127.9	lb/hr	1351	lb-ft	1000	90.3	lb/hr	N/A	N/A	N/A	N/A
C13	18	NA	16	12.5	Liters	307	horsepower	1850	108.5	lb/hr	1194	lb-ft	1200	94.4	lb/hr	N/A	N/A	N/A	N/A
2206	19	NA	16	12.5	Liters	439	horsepower	2100	154.8	lb/hr	1482	lb-ft	1400	132.2	lb/hr	N/A	N/A	N/A	N/A
2206	20	NA	16	12.5	Liters	473	horsepower	2100	168.8	lb/hr	1600	lb-ft	1400	145.3	lb/hr	N/A	N/A	N/A	N/A
2206	21	NA	16	12.5	Liters	519	horsepower	2100	185.5	lb/hr	1752	lb-ft	1400	159.2	lb/hr	N/A	N/A	N/A	N/A
C13	22	NA	16	12.5	Liters	503	horsepower	1500	173.9	lb/hr	NA	lb-ft	NA	NA	lb/hr	N/A	N/A	N/A	N/A
C13	23	NA	16	12.5	Liters	567	horsepower	1800	201	lb/hr	NA	lb-ft	NA	NA	lb/hr	N/A	N/A	N/A	N/A
2206	24	NA	16	12.5	Liters	384	horsepower	2100	136.1	lb/hr	1297	lb-ft	1400	115.7	lb/hr	N/A	N/A	N/A	N/A
2206	25	NA	16	12.5	Liters	414	horsepower	2100	146.5	lb/hr	1398	lb-ft	1400	126	lb/hr	N/A	N/A	N/A	N/A
2206	26	NA	16	12.5	Liters	439	horsepower	2100	154.9	lb/hr	1482	lb-ft	1400	132.3	lb/hr	N/A	N/A	N/A	N/A
C13	27	NA	16	12.5	Liters	439	horsepower	2100	154.8	lb/hr	1482	lb-ft	1400	132.2	lb/hr	N/A	N/A	N/A	N/A
C13	28	NA	16	12.5	Liters	473	horsepower	2100	168.8	lb/hr	1600	lb-ft	1400	145.3	lb/hr	N/A	N/A	N/A	N/A
C13	29	NA	16	12.5	Liters	519	horsepower	2100	185.5	lb/hr	1752	lb-ft	1400	159.2	lb/hr	N/A	N/A	N/A	N/A
C13	30	NA	16	12.5	Liters	355	horsepower	2050	127.2	lb/hr	1564	lb-ft	1200	121.9	lb/hr	N/A	N/A	N/A	N/A
C13	31	NA	16	12.5	Liters	429	horsepower	2100	162.2	lb/hr	1612	lb-ft	1200	126.3	lb/hr	N/A	N/A	N/A	N/A
C13	32	NA	16	12.5	Liters	425	horsepower	1800	148.4	lb/hr	1609	lb-ft	1200	126.2	lb/hr	N/A	N/A	N/A	N/A
C13	32A	NA	16	12.5	Liters	425	horsepower	1800	148.4	lb/hr	1609	lb-ft	1200	126.2	lb/hr	N/A	N/A	N/A	N/A
2206	33	NA	16	12.5	Liters	503	horsepower	1500	173.9	lb/hr	NA	lb-ft	NA	NA	lb/hr	N/A	N/A	N/A	N/A
2206	34	NA	16	12.5	Liters	567	horsepower	1800	201	lb/hr	NA	lb-ft	NA	NA	lb/hr	N/A	N/A	N/A	N/A