

CATERPILLAR INC.

EXECUTIVE ORDER U-R-001-0649

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	NCPXL32.0HXF	32.0	32.0 Diesel								
SPECIAL	FEATURES & EMISSION C	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION								
Electronic Cooler, E	Direct Injection, Turbo ingine Control Module, Exhaust Gas Recirc	Oxidation Catalyst,	Loader, Tractor								

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
ELSE > 560 kW	Tier 4 Final	STD	0.19	3.5	N/A	3.5	0.04	N/A	N/A	N/A
		FEL	N/A	3.2		N/A	N/A			
		CERT	0.03	2.6		0.01	0.03			

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>22nd</u> day of November 2021.

Allen Lyons, Chief

Emissions Certification and Compliance Division

Attachment: Engine Models

EO #: U-R-001-0649

Family: NCPXL32.0HXF

Attachment Last Revised: 10/27/2021

					Displacement -		Peak Power -	Peak Power -	Peak Power -	Peak Power - Fuel Peak Torque -			Peak Torque -	Peak Torque - Fuel					
Model	Code	Trim	Config	Displacement	Units	Peak Power	Units	Speed (rpm)	Fueling	Units	Peak Torque	Units	Speed (rpm)	Peak Torque - Fuel	Units	OBD	GHG	Special	Notes
C32	Cert Test 1	NA	V12	32.1	Liters	921	horsepower	1750	315	lb/hr	3504	lb-ft	1300	295	lb/hr	N/A	N/A	N/A	N/A
C32	1	NA	V12	32.1	Liters	896	horsepower	1800	306	lb/hr	3470	lb-ft	1300	286	lb/hr	N/A	N/A	N/A	N/A
C32	2	NA	V12	32.1	Liters	884	horsepower	1750	304	lb/hr	3461	lb-ft	1200	269	lb/hr	N/A	N/A	N/A	N/A
C32B	2A	NA	V12	32.1	Liters	884	horsepower	1750	304	lb/hr	3461	lb-ft	1200	269	lb/hr	N/A	N/A	N/A	N/A
C32	3	NA	V12	32.1	Liters	921	horsepower	1750	315	lb/hr	3504	lb-ft	1300	295	lb/hr	N/A	N/A	N/A	N/A
C32B	3A	NA	V12	32.1	Liters	921	horsepower	1750	315	lb/hr	3504	lb-ft	1300	295	lb/hr	N/A	N/A	N/A	N/A