

## CATERPILLAR INC.

## **EXECUTIVE ORDER U-R-001-0674**

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	PCPXL78.1NSG	78.1	Diesel	8000					
SPECIAL	FEATURES & EMISSION C	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION						
Cooler, E	Direct Injection, Turbo Engine Control Module, ction – Urea, Diesel Oxi Ammonia Oxidation (	Selective Catalytic dation Catalyst,	Generator						

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
GEN > 900kW	Tier 4 Final / ALT 5% PM	STD	0.19	0.19 0.67 N/A		3.5	0.03	N/A	N/A	N/A
		FEL					0.10			
		CERT	0.02	0.56		0.01	0.07			

**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 23rd day of September 2022.

Robin U. Lang, Chief

Emissions Certification and Compliance Division

Jolin U. Lang

Attachment: Engine Models EO #: U-R-001-0674 Family: PCPXL78.1NSG Attachment Last Revised: 9/12/2022

					Displacement -		Peak Power -	Peak Power -	Peak Power -	Peak Power - Fue	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
3516C	Cert 1	NA	V16	78.08	Liters	3064	horsepower	1800	1027.7	lb/hr	8941	lb-ft	1800	N/A	N/A	N/A	N/A	N/A	N/A
3516C	1	NA	V16	78.08	Liters	3064	horsepower	1800	1027.7	lb/hr	8941	lb-ft	1800	N/A	N/A	N/A	N/A	N/A	N/A