	CUMMINS INC.	EXECUTIVE ORDER U-R-002-0778 New Off-Road Compression-Ignition Engines
---	---------------------	---

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)
2021	MCEXL08.9AAK	8.9	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Electronic Direct Injection, Turbocharger, Charge Air Cooler, Engine Control Module, Exhaust Gas Recirculation, Diesel Oxidation Catalyst, Selective Catalytic Reduction – Urea, , Ammonia Oxidation Catalyst			Crane, Loader, Tractor, Dozer, Pump, Compressor, Generator Set, Forklift, Power Unit, Snow Blower	

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):

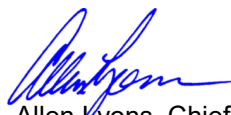
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Final	STD	0.19	0.40	N/A	3.5	0.02	N/A	N/A	N/A
		CERT	0.04	0.18	--	0.1	0.02	--	--	--

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 15th day of December 2020.



Allen Lyons, Chief
Emissions Certification and Compliance Division

Attachment: Engine Models

EO #: U-R-002-0778

Family: MCEXL08.9AAK

Attachment Last Revised: 11/17/2020

Model	Code	Trim	Config	Displacement	Displacement - Units	Peak Power	Peak Power - Units	Peak Power - Speed (rpm)	Peak Power - Fueling	Peak Power - Fuel Units	Peak Torque	Peak Torque - Units	Peak Torque - Speed (rpm)	Peak Torque - Fuel	Peak Torque - Fuel Units	OBD	GHG	Special	Notes
QSL8.9	3888:FR93875	N/A	I6	8.9	Liters	380	horsepower	2100	191	mm3/stroke	1200	lb-ft	1500	231	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93756	N/A	I6	8.9	Liters	380	horsepower	2100	196	mm3/stroke	1200	lb-ft	1500	230	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93993	N/A	I6	8.9	Liters	350	horsepower	2100	179	mm3/stroke	1200	lb-ft	1500	230	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93994	N/A	I6	8.9	Liters	340	horsepower	1800	192	mm3/stroke	1100	lb-ft	1400	206	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93996	N/A	I6	8.9	Liters	333	horsepower	2100	167	mm3/stroke	1050	lb-ft	1500	199	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93997	N/A	I6	8.9	Liters	310	horsepower	2100	156	mm3/stroke	1050	lb-ft	1500	199	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93757	N/A	I6	8.9	Liters	320	horsepower	2200	155	mm3/stroke	1050	lb-ft	1500	199	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93995	N/A	I6	8.9	Liters	300	horsepower	2200	146	mm3/stroke	1050	lb-ft	1500	199	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93758	N/A	I6	8.9	Liters	300	horsepower	2000	156	mm3/stroke	1050	lb-ft	1400	201	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93998	N/A	I6	8.9	Liters	320	horsepower	1800	185	mm3/stroke	1050	lb-ft	1400	201	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93999	N/A	I6	8.9	Liters	275	horsepower	2200	136	mm3/stroke	895	lb-ft	1500	167	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR94000	N/A	I6	8.9	Liters	260	horsepower	2200	130	mm3/stroke	835	lb-ft	1500	156	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR93759	N/A	I6	8.9	Liters	250	horsepower	2200	125	mm3/stroke	800	lb-ft	1500	149	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR94001	N/A	I6	8.9	Liters	230	horsepower	2200	120	mm3/stroke	675	lb-ft	1500	127	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR94002	N/A	I6	8.9	Liters	300	horsepower	2000	157	mm3/stroke	1160	lb-ft	1400	222	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR94003	N/A	I6	8.9	Liters	285	horsepower	2000	150	mm3/stroke	1070	lb-ft	1400	205	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR94004	N/A	I6	8.9	Liters	265	horsepower	2000	141	mm3/stroke	825	lb-ft	1400	154	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	3823:FR94987	N/A	I6	8.9	Liters	300	horsepower	2000	191	mm3/stroke	787	lb-ft	1400	105	mm3/stroke	N/A	N/A	N/A	N/A
QSL8.9	4850:FR95337	N/A	I6	8.9	Liters	272	horsepower	2100	144	mm3/stroke	1069	lb-ft	1400	200	mm3/stroke	N/A	N/A	N/A	N/A