



CUMMINS INC.

EXECUTIVE ORDER U-R-002-0686
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-14-012;

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)
2019	KCEXL23.0AAD	23.0	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Electronic Direct Injection, Turbocharger, Charge Air Cooler, Electronic Control Module, Selective Catalytic Reduction – Urea			Crane, Pump, Other Industrial Equipment	

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
kW > 560	Tier 4 Final	STD	0.19	3.5	N/A	3.5	0.04	N/A	N/A	N/A
		CERT	0.02	2.3	--	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 at El Monte, California on this 19th day of October 2018.


 Annette Hebert, Chief
 Emissions Compliance, Automotive Regulations and Science Division

EO#: U-R-002-0686

R/c 3/14/2019

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Engine Model Summary Template

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Devices Per SAE J1930
KCEXL23.0AAD	5361:FR5368	QSK23	1000@1800	542	327	3005@1600	546	293	DDI ECM TC SCR, CAC
KCEXL23.0AAD	5361:FR5378	QSK23	950@1800	533	321	2785@1400	509	239	DDI ECM TC SCR, CAC
KCEXL23.0AAD	5361:FR5376	QSK23	860@1800	477	288	2785@1400	509	239	DDI ECM TC SCR, CAC
KCEXL23.0AAD	4361:FR5337	QSK23	760@1800	422	255	2558@1350	469	212	DDI ECM TC, CAC SCR
*KCEXL23.0AAD	4361:FR5389	QSK23	760@2100	378	266	2558@1350	463	209	DDI ECM TC SCR, CAC
*KCEXL23.0AAD	5361:FR5371	QSK23	1050@2100	518	365	2897@1400	518	212	DDI ECM TC SCR, CAC
*KCEXL23.0AAD	5361:FR5370	QSK23	950@2100	467	329	2897@1400	525	247	DDI ECM TC SCR, CAC
*KCEXL23.0AAD	5361:FR5377	QSK23	860@2100	420	296	2785@1400	498	234	DDI ECM TC SCR, CAC

* Added for running change